

August 1, 2011

# The Role of Social Support in Multiple Morbidity Self-Management Among Rural Residents

Shoshana Bardach, *University of Kentucky*

Yelena N. Tarasenko, *Georgia Southern University*

Nancy E. Schoenberg, *University of Kentucky*

Published in final edited form as:

*J Health Care Poor Underserved*. 2011 August ; 22(3): 756–771. doi:10.1353/hpu.2011.0083.

## The role of Social Support in Multiple Morbidity: Self-Management among rural residents

**Shoshana H. Bardach, MA [doctoral student]**,  
Graduate Center for Gerontology, University of Kentucky.

**Yelena N. Tarasenko, MPH, MPA [doctoral student]**, and  
College of Public Health, University of Kentucky.

**Nancy E. Schoenberg, PhD [Professor]**  
Department of Behavioral Science at the University of Kentucky in Lexington.

### Abstract

Social support generally is considered a valuable asset that may compensate for health service deficiencies among rural populations. Employing a mixed methods approach, we explored how vulnerable rural residents described social support in the context of self-management for multiple chronic conditions. Participants generally felt support was available, though emotional/informational support was perceived as less available than other types of support. Participants did not rely heavily on informal support to help them manage their multiple morbidities, preferring to call on their doctor and their own resources. We discuss implications of these findings for meeting this vulnerable population's self-management needs.

### Keywords

Appalachian region; rural health; social support

---

Researchers have long assumed that social support may be useful to buffer the health inequities and contextual challenges faced by rural residents.<sup>1–2</sup> We sought to examine this assumption by answering several questions: (1) What types of and how much social support do low-income rural residents with multiple morbidity (MM) receive? (2) From their perspectives, does the social support received by rural residents facilitate MM self-management? (3) What explanations do rural residents offer for their perspectives on social support and MM self-management?

### Rural health inequities and the Appalachian context

Rural residents suffer significant health inequalities, often in a context of resource scarcity, compared with the national population overall. Prevalence rates of cancer, diabetes, arthritis, asthma, and heart disease are higher among rural residents than among the overall U.S. population.<sup>3–4</sup> Insufficient personal resources, contextual challenges, and suboptimal health behaviors likely contribute to these inequities.<sup>5–7</sup> Rural residents also experience more socioeconomic disadvantages, including higher poverty and unemployment rates and lower levels of formal education, than the U.S. population at large.<sup>8–10</sup> Moreover, rural communities, particularly those in distressed counties of Appalachia, often have health care professional shortages and certain health services are not available locally; even when

services are available, rural residents may lack transportation to reach them.<sup>11–15</sup> Social services may also be less widely available in rural areas.<sup>16</sup> The health disadvantages that rural residents face are especially pronounced for residents of rural Appalachia, who tend to be older and have fewer personal resources, making them vulnerable to worse outcomes.<sup>8</sup> Appalachian residents have higher rates of certain types of cancer,<sup>17</sup> heart disease,<sup>18</sup> and diabetes<sup>19</sup> than residents of other regions. These disparities are most pronounced in distressed counties of Appalachia, such as the ones in which this study took place.<sup>12</sup> Although we currently lack prevalence data specifically focused on MM, given the higher rates of various individual conditions among Appalachian residents, this population likely has higher rates of MM than their non-rural-Appalachian counterparts.<sup>20</sup> Further, given the aforementioned contextual disadvantages, the experience of managing MM is likely to be particularly challenging for this population.

## Multiple morbidity and self-management

Multiple morbidity refers to the co-occurrence of two or more chronic health conditions. It has become fairly common among middle-aged and older adults; estimates of MM for those aged 45–64 range from 35% to 93%, and for those aged 65 and over range from 63% to nearly 100%.<sup>21–22</sup> Controlling disease in under-resourced communities is difficult; managing multiple conditions leads to substantially increased challenges as individuals try to balance various, and occasionally conflicting, behavioral recommendations and medication regimes.<sup>23–24</sup> Optimal management may be quite time intensive and costly, limiting personal resources for self-management.<sup>23,25</sup> Other challenges to disease management can include symptoms, such as pain and fatigue, as well as logistical impediments, such as transportation.<sup>26</sup>

Researchers have argued that in the face of these health challenges, rural residents may draw on a valuable asset of social support.<sup>27–28</sup> Social support may be especially important to residents of Appalachia, where disease rates are high and strong informal social support network values are normative.<sup>29–35</sup> In this context, researchers have suggested social support may serve as a buffer against the impact of life stressors.<sup>27–28,36</sup>

Social support is a multi-dimensional phenomenon that refers to membership and participation in voluntary associations and formal and informal relationships among significant others, associates, and colleagues.<sup>37</sup> Sources of support can include one's spouse, children, siblings, friends, neighbors, co-workers, and professionals (such as health care providers).<sup>38</sup> Dimensions of social support include constructs such as emotional support, esteem, social networks, instrumental support, and active support.<sup>39</sup> Sherbourne and Stewart<sup>40</sup> emphasized the following five dimensions assessed *via* the Medical Outcomes Study (MOS) Social Support Survey: 1) emotional support (i.e., the expression of positive affect, empathetic understanding, and the encouragement of expressions of feelings); 2) informational support (i.e., the offering of advice, information, guidance or feedback); 3) tangible support (i.e., the provision of material aid or behavioral assistance); 4) positive social interaction (i.e., the availability of other persons to do fun things with you); and 5) affectionate support (involving expressions of love and affection). The MOS Social Support Survey, which was originally developed as part of a study of patients with chronic conditions, is predicated on evidence that a person's perceptions of the availability of support may be more important than the degree of support actually received.<sup>41</sup> Sherbourne and Stewart suggested that received support was confounded with need and therefore might not accurately reflect the amount of support available to a person.<sup>40</sup>

Although conceptualization and measurement of social support differ across studies, most have demonstrated physical and emotional health benefits of social support.<sup>2,37,42</sup>

Researchers suggest that high levels of social support availability lead to better health, help prevent physical and emotional problems, and enable individuals to recover from and cope with serious illness and injury.<sup>43</sup> The impact of support seems to be greater for those with higher levels of life stressors.<sup>44</sup> Low levels of support may be detrimental for physical and mental functioning.<sup>45</sup>

Research indicates social support may play a particularly prominent role in the life satisfaction and mental health of rural residents.<sup>35</sup> The prominent role that social support plays in rural residents' lives may relate to the rural reality of greater health challenges in the face of fewer resources, making the provision of emotional and logistical assistance particularly critical to well-being. While Gallant<sup>46</sup> conducted a review of the relationship between social support and chronic disease self-management, rural adults were not the focal population; thus, we currently lack insights on the ways in which vulnerable rural residents use support in the face of multiple illnesses. To rectify this deficit, this paper examines the nature of social support among vulnerable adults in rural Appalachia with multiple morbidities.<sup>47</sup>

## Methods

### Study location

This study took place in rural Appalachian Kentucky. Appalachia is a geographically and culturally diverse region of 410 counties in 13 states with nearly 22 million people, or 8.3% of the total U.S. population.<sup>48</sup> Appalachia has high rates of extreme poverty, isolation, and poor health.<sup>8,49–50</sup> Socioeconomic and educational indicators of Appalachian Kentucky are among the worst in the United States, with the majority of Appalachian Kentucky counties ranking in the lowest 10% of the nation's counties in terms of poverty, unemployment rate, and *per capita* income.<sup>48,51</sup> The two counties where this study took place have even lower SES indicators than the region overall. The percentage of individuals living below poverty level varies from 29.1% to 33.2% in the two counties, compared with 12.4% in the U.S.<sup>48</sup> Rural Appalachian Kentucky also has notably low rates of health insurance coverage.<sup>11</sup>

### Sample recruitment and eligibility

Participants were recruited with the help of staff from three federally qualified health centers in Appalachian Kentucky. These practices were selected because they were situated in communities with characteristics typical of rural underserved populations, such as health care provider shortages and low socioeconomic and health-related indicators. Clinical staff from each of the family medicine practices compiled a list of up to 100 patients who had been seen during the past year. Eligibility criteria included having two to six chronic conditions that required fairly extensive self-management. Because the parent project for this study focused on colorectal cancer (CRC) screening, we included those aged 50–76 years, the recommended ages for CRC screening. Additionally, we excluded participants with colostomy, Crohn's Disease, iron deficiency anemia, ulcerative colitis, rectal bleeding, lower abdominal pain, or irritable bowel syndrome, since these conditions may lead to endoscopy for reasons other than CRC screening. Potential participants also were excluded if they were unable or unwilling to be involved in our study or had received a colorectal, cervical or breast cancer diagnosis. Providers confirmed patient eligibility and then signed a letter of invitation to participate in the study. Participants were instructed to mail back a pre-addressed stamped letter if they were interested in participating. Once letters of interest were received, we re-verified participants' eligibility (diagnosed disease status, age, willingness to participate in two interviews) by telephone and arranged for an in-person meeting time.

## Interview protocol

We conducted two in-depth interviews with each participant. Participants selected the location for interviews; most were conducted in the participant's home. Each interview lasted 60–90 minutes, and the second interview took place within a month of the initial interview. Two interviews were necessary in order to complete all instruments and adequately cover experiences of managing MM and social support without unduly burdening the participants.

Informed consent was obtained from each participant prior to the first interview. At the end of the first interview, the participants were asked to complete a socio-demographic questionnaire and social support was assessed using the MOS Social Support Instrument and follow up open-ended questions. The MOS consists of four separate social support subscales: 1) emotional/informational, 2) tangible, 3) affectionate, and 4) positive social interactions, and an overall functional social support index. This index also includes one additional item, "Someone to do things with to help you get your mind off things." For each item, respondents indicate how often each kind of support would be available to them if needed, with responses ranging from one, "none of the time," to five, "all of the time." A higher score for an individual scale or for the overall support index indicates more support. The validity and reliability of the MOS Social Support Survey Instrument have been established,<sup>40</sup> and the instrument has been used previously with rural residents.<sup>52–53</sup> In our study, the Cronbach's Alpha ( $\alpha$ ) for each of the sub-scales of social support ranged from 0.89 to 0.95, with the overall Cronbach's  $\alpha$  of 0.95, indicating acceptable reliability. Although using the MOS allowed us to assess the availability of social support, it is not able to capture the meaning of or explanations for such support, an important series of insights that can only be obtained through in-depth interviews.<sup>54</sup>

Due to limited literacy of the participants, all documents were administered orally by our trained local interviewer. The qualitative component of the interviews was audio-taped, with the permission of the participants. Participants were provided an honorarium (\$25 and \$35) after each interview. Approval to conduct the study was obtained from the university's Institutional Review Board.

## Data analysis

**Quantitative data analysis**—The data from the completed questionnaires were entered into Microsoft Excel 2007. We used Stata version 10<sup>55</sup> for Windows to calculate descriptive statistics, to form a sample description, and to conduct bivariate analyses, including correlations and a one-way analysis of variance, on the associations between the overall social support and its dimensions and sociodemographic characteristics of our sample.

**Qualitative data analysis**—As we were investigating a previously unexplored topic, we used a content analysis approach, which allows for the development of inductive categories and for the identification of emergent themes.<sup>56–57</sup> We did not use any pre-existing analytic templates; rather, we relied on immersion into existing research on social support and MM, leading us to anticipate some themes and patterns.<sup>58–59</sup> Within the broad analytic orientation of content analysis, we did not count words or categorize text; rather, we subjected our transcribed textual data to a process of coding and identifying themes and patterns.<sup>60</sup>

Consistent with qualitative data analysis, our approach was iterative and recursive.<sup>61</sup> After each interview was complete, the tape-recorded session was professionally transcribed, checked for accuracy, and reviewed to identify themes and to ensure that any missing line of inquiry was represented in subsequent interviews.<sup>62</sup> To ensure contextualization, we immersed ourselves in the transcripts, read and re-read each one, and engaged in line-by-line

coding. Our initial codes were refined and we sorted these codes into categories, or useful grouping devices.<sup>63</sup> To develop a codebook, we compiled these codes and emergent categories together, and refined the codebook as new codes emerged.

Coding outcomes were discussed through periodic meetings and comparisons by members of the research team. Discrepancies were addressed by modifying the code-book and recoding the transcripts. Inter-coder reliability was calculated based on the number of codes agreed upon by two independent raters (SB and YT) divided by the total number of codes of the two raters used. Through this iterative coding process we established an inter-coder reliability ratio of approximately 80%, generally considered to be a satisfactory level of agreement.<sup>64</sup> We used QSR international's NVivo 2 software to improve data organization and management.<sup>65</sup>

## Results

### Sample description

We interviewed a total of 42 participants. One participant reported having colon cancer and was excluded from the study. Thus, our final sample consisted of 41 participants. Our participants were longtime residents of Appalachia, having lived in their present counties on average for 50 years (range 8–76). Consistently with the general population of the Appalachian counties (97% White),<sup>48</sup> all of our participants were White, and had low incomes and modest educational attainment. Unemployment was pervasive (83%). Ten percent had no health insurance coverage; others had Medicaid (18%), Medicare (13%), company-sponsored (10%), private (20%), or dual/combination (30%) insurance coverage.

A majority of our participants self-reported their health status was either poor (27%) or fair (27%). High blood pressure (76%) and arthritis (68%) were reported by the majority of participants, and a sizable number of participants also reported high cholesterol (49%), heart disease (37%), and diabetes (29%). On average, participants reported 4.7 health conditions [range 2–10]. The most common combination of conditions was arthritis and high blood pressure (49%) followed by high blood pressure and high cholesterol (41%), and high blood pressure and heart disease (36%). The average participant age was 63 years, ranging from 51 to 76. Most participants were female (71%), married (73%), and currently lived in a household of two people (56%). On average, our participants had two children (range 0–7).

### Type and extent of social support

On average, participants reported an overall social support score of 3.98 [with one = support available none of the time and five = support available all of the time, range 2.11–5.00], with the strongest support indicated for affectionate support, followed by positive social interaction, tangible support, and emotional/informational support. The average scores for these domains of support were: affectionate support, 4.55 [range 2.33–5.00], positive social interaction, 4.20 [range 2.00–5.00], tangible support, 4.08 [range 1.25–5.00], and emotional/informational support, 3.66 [range 1.50–5.00]. While the means for each dimension of support are above the scale midpoints, the averages suggest perceptions of various types of support being available more than “some of the time” but less than “all of the time.” Thus, although on the higher end of the scale, the pattern of responses indicated some shortcomings in perceived support availability, particularly for emotional/informational support. Bivariate analyses did not demonstrate statistically significant relationships between overall social support and its dimensions and the socio-demographic characteristics of our sample.



## Narrative themes

The MOS elicited participants' perspectives on the quantity of affectionate, interactional, tangible, and emotional/informational support they experienced, the qualitative responses provided insights into what this social support meant in their lives. Several key themes emerged, including participants' perception that although support was available, (1) their tradition of self-reliance; (2) their focus on meeting self-management needs primarily through health care professionals; and (3) their concern about overburdened, already challenged family members motivated them to postpone drawing on support until doing so was absolutely essential.

While participants perceived support to be available from their family members, when asked through open-ended questions how exactly they experienced this support, they often described feeling that it was unnecessary to draw on such support at present. Participants explained this postponement of soliciting social support in terms of their self-reliance, their sense that the more appropriate source of support to meet medical needs was their provider, and their perception of the limits of family capacities.

**Culture of self-reliance**—Many participants discussed the importance of personal responsibility and self-reliance in the face of addressing chronic conditions. This self-reliance included the belief in being one's own strongest advocate and the importance of being knowledgeable enough about one's own situation to be able to look out for oneself. Mrs. M., age 58, with arthritis and high blood pressure, succinctly summed up the importance of self-reliance in the health arena: "We got to understand that we got to manage our own health because we care more about our health than others." She continued,

As a patient you are responsible for your own self. You need to say, if they find a polyp, "How deep was it? Did you get all of it? If not, why?" If you walk away without asking any of these questions then you bear the responsibility if things go wrong and get on the Internet and learn. You've got a better reason to learn about your own conditions ... I know I care more about my medical problems than anyone else on earth, so I read everything I can about them. I may not practice what I read, but at least I'm aware of what I do need to do. So any medical problems that I have I take full responsibility.

Others, such as 66-year old Mrs. I., echoed this emphasis on self-reliance: "You have to look out for yourself anyway, no matter where you are." Similarly, Mrs. G., age 61, with arthritis, hyperthyroidism, and high cholesterol, commented that patients "aren't as proactive or assertive as [they] need to be today," emphasizing the importance of asking doctors questions and seeking answers to health concerns.

Although managing MM in this rural context is challenged by limited resources, residents' life-long socioeconomic disadvantage appeared to enable them to adapt and compensate, often without the use of social support. Despite the majority of participants reporting they either had just enough to get by or were struggling financially, and all having at least two chronic conditions, rarely did participants discuss a need for or acceptance of assistance. When Mrs. Y., age 56, with arthritis, high blood pressure, high cholesterol, uterine fibroids, and tumors, was asked about receiving any assistance, she replied, "Well at this point it's not been an issue that I would have to rely on another person. So far I've been healthy enough to be able to take care of it [my conditions] myself." Many participants echoed this sentiment and the goal of avoiding assistance from others. Mrs. J, age 56, who had arthritis, heart disease, high blood pressure, high cholesterol, and sleep apnea, spoke about the challenge of working through her many illnesses; she indicated that her coworkers

don't know about most of them [her conditions]. They don't ask you. I just told one of them the other night and he said don't push yourself. I think that if they knew all of it that they would probably work with me, try to make it easier for me, maybe not schedule me so many days in a row so I can get some rest in the meantime.

Mrs. J realized that her life could be easier if she accepted assistance from others, but preferred to remain self-reliant. However, many participants also recognized their vulnerability to changing circumstances, qualifying their statements that they did not need help "at this point," seemingly leaving open the possibility of future assistance.

Even respondents who said they needed and appreciated support expressed a reluctance to accept it. For instance, Mrs. S. was a single woman, age 57, who lived by herself, earned less than \$10,000 a year, and had to manage arthritis, heart disease, high blood pressure, diabetes, Ménière's disease, degenerative bone disease, sleep apnea, edema in her foot and legs, as well as kidney problems. When asked about assistance, she spoke of strong family resources in rural areas; however, she also revealed reluctance to accept assistance. She described her situation as follows:

I have a cousin that lives upstairs with her husband. I didn't even know I had a cousin till we got to talking one day and found out that we were related. Ever since then she helps me all that she can, she and her husband both do. She will cook and one of them will bring me down something to eat. Or if they are going out to the store, then she asks me do I need her to bring me back anything. But I hate to ask her because if she knows that I don't have the money she will buy it out of her own pocket, and she is the only one working because her husband is disabled with heart disease also.

**Medicalization of support needs**—Much of the literature addressing social support in rural contexts emphasizes a heavy reliance on family support to meet extensive needs,<sup>66–67</sup> but perspectives from participants from this and other studies<sup>68</sup> also suggest that health care providers' support may be more heavily emphasized when it relates to health concerns. When asked about the assistance they received with their health issues, participants who reported receiving assistance overwhelmingly conceptualized their needs narrowly, with a focus on medical needs, rather than addressing auxiliary help with self-management. Accordingly, the source of support reported was frequently the participant's doctor. Participants did not report any reluctance in making office visits when they had problems or in calling their doctors when they had concerns. Mrs. E., age 51, with arthritis, high cholesterol, and thyroid disease explained to whom she could go for help:

Well I have sisters that are nurses and of course I run to family members that are not nurses but are in the health profession. I could call my family doctor and he would be glad to help me. Actually, most of the time, if I have questions I will look them up on the Internet and stuff.

Her response demonstrates a medicalization of needs, viewing the physician as a valuable resource; in contrast to many of the other participants, she also considered family for medical needs, though she explained that involvement of her family was due to their medical credentials. Many participants praised their doctors and believed they truly wanted to help; participants appreciated knowing that someone was looking out for them. Regardless of the frequency with which they actually went to the doctor, participants prioritized their doctors over their family members as valuable sources of assistance with their health needs.

**The nature and scope of family support**—Given the challenges—emotional, informational, tangible—of managing MM, most of the assistance received from family members involved compensating for limitations related to health decrements. Family



members helped with tangible non-medical activities, mainly in the form of instrumental, emotional/informational, or affective support, such as household chores, rather than direct medical management. Many participants reported receiving tangible assistance from members of their family with their dietary management, chores that may be challenging due to MM, and transportation both in the context of MM self-management and in overall activities. For instance, Mrs. T., age 58, has arthritis, heart disease, and migraines; she said,

My husband, he takes me back and forth to the doctor and he makes sure the kids are doing their own thing. When I have migraines I have to have a dark room until it eases off. While I was working I had this horrible migraine, I'm talking about a month, a month, twenty four hours a day, seven days a week. That's the first and only time in my life I have had Oxycontin. I took it twice a day and he drove me to work because you can't drive while you are on that stuff.

Family members with medical knowledge also lent support by providing emotional/informational and tangible assistance. Mrs. W., age 56, with arthritis, reflux, nerve pain, and plantar fasciitis, discussed how the various members of her family assisted her. She [my daughter] knows a lot and what to do in medical situations. So she was always there every day and every evening. And I have another daughter who is an accountant, so she did a good job of keeping up with all of my paying the bills because my husband doesn't know a lot about writing a check or keeping up with the bills. So I do have great support from family.

Participants appreciated the emotional reassurance and non-medical tangible assistance provided by family members. For instance, Mrs. A., age 70, with arthritis, high blood pressure, high cholesterol, thyroid disease, and a previous hip replacement, emphasized the need for tangible support when recovering from surgery:

It took a lot of my time just to manage my hip replacement and what is most aggravating is that you're not able to do your housework like you do all your life. That's what has bothered me the most. My husband, he helps, and I've got a daughter and she helps, but if you don't have somebody you can't hardly make it by yourself at all.

Other participants discussed how positive relationships helped, not necessarily by providing concrete assistance, but by offering emotional and affectionate support and creating a supportive atmosphere. Whether or not assistance was actually provided, the knowledge that someone was or would be there to talk to and feel loved by was reassuring for many. Mrs. G. mentioned how her relationship with her husband made it easier for her to deal with her MM. She said, "We have a lot of dialogue, a lot of laughter, just a really, really good marriage and relationship which helps enormously." Mrs. H., age 62, with high blood pressure, high cholesterol, heart disease, fibromyalgia, scoliosis, osteoporosis, retinitis pigmentosa, and depression, indicated that while she had so far been successfully self-reliant, the knowledge that her family was there for her was reassuring. She said, "Well they [my immediate family] know I've got these conditions, and they, my immediate family, will always be there, but I've never had to actually call on them for anything like that but I'm sure they would [help]." Mrs. H. expressed an assurance, shared by many, that family support was available, but reserved it for times of greater need.

## Discussion

This mixed-method study demonstrated the complexity and nuance of the measurement and interpretation of social support among vulnerable rural adults. This study provided a new insight into the variety and extent of social support within rural, under-resourced areas. Findings from the interviews highlight diverse and multilayered views on the need for and

receipt of assistance that may challenge standard social support characterizations, particularly as they differ from social support in rural contexts.

Although participants perceived great affection and positive interaction, their experiences suggest that a culture of self-reliance (that serves to emphasize self-management), coupled with a medicalization of needs (that results in placing a greater emphasis on formal care) leads to less reliance on family support than the literature might suggest. Narratives also revealed a specialization of who plays what role in the provision of social support, with family and providers drawn on for particular needs. Medical needs were seen as the purview of providers, and family was drawn on for support regarding more auxiliary needs. Despite fairly strong perceptions of support availability, participants generally attempted to meet their own self-management needs, emphasizing their self-reliance. While the strong social ties discussed by these vulnerable, rural residents may be similar to perceptions of social support among other disadvantaged groups, the social support experiences of residents of rural Appalachia are strongly shaped by a context of greater resource scarcity and isolation.<sup>69–70</sup> Research indicates factors such as poverty and social class relate to perceptions of social support.<sup>71–72</sup> Accordingly, the various indicators of socioeconomic deprivation within rural Appalachia likely exert a profound influence on experiences of social support.

### **What types of and how much social support do low-income rural residents with multiple morbidity (MM) receive?**

Prior discussion of social support has explored how the type of support required may vary by situational need;<sup>73</sup> this study suggested the importance of examining domain-specific social support for those with significant medical needs and limited personal and community resources. The quantitative responses to the MOS social support questions demonstrated generally high levels of perceived support, with all the means above the scale midpoints, though the values also indicated some shortcomings in perceived support availability. Perceptions of support were greatest for affectionate support, followed by positive social interaction support, and then tangible support, and were weakest for emotional/informational support. This suggested that social support within this underserved rural community may not be as strong across the specific domains as generally described in existing research.<sup>27–28</sup> Perceptions of support did not seem to vary according to personal characteristics.

### **What explanations do rural residents offer for their perspectives on social support and MM self-management?**

Rather than put strain on family and friends, members of these communities may focus on support from specialists—doctors for medical needs, social services, when available, for auxiliary services—and may turn to family for more emotional needs. Prior research has demonstrated that for health care needs, individuals are more likely to rely on health care providers than on consultations with family and friends.<sup>68,74</sup> However, the generalizability of this tendency to rural residents has not been demonstrated, perhaps due to provider shortages or distrust of providers.<sup>75–77</sup> Findings from this study challenge an assumption about support preferences in rural areas; participants with multiple chronic conditions seemed to emphasize their medical needs, resulting in a greater reliance on providers, or at least individuals with medical knowledge, rather than family supports. Due to this hierarchy of needs, family support and informal assistance became secondary. When formal sources of assistance are available, prior research indicated individuals with strong values of self-reliance often prefer to utilize these services before asking for help from family, though they are still comforted by knowing additional support was available if needed.<sup>78</sup> This utilization of non-family support may also result from contemporary trends towards individuals to leave rural areas for work, leaving fewer family members in easy reach to rely upon.<sup>29</sup>

Participants in this study suggested that family served as a reservoir of support, a valuable potential resource, but one that individuals hesitated to drain too soon. Many participants expressed a recognition of the widespread disadvantage within the community and felt reluctant to accept assistance if they could manage on their own. This hesitation to seek and accept informal support seemed to stem from a conflux of factors: a culture of self-reliance, a desire not to be a burden to others with similarly limited resources, and perhaps, a sense that one should wait to take advantage of support until it was really needed. Social support can also be considered as a social “fund,” implying that taking also requires giving, and those with limited personal resources may not want to assume this responsibility.<sup>79</sup>

### **Does the social support received by rural residents facilitate MM self-management?**

The reluctance to involve others resulted in family support functioning more as a coping mechanism in times of extreme need, consistent with the stress and coping perspective,<sup>80</sup> rather than a health-promoting or disease-preventing mechanism in times of moderate need. Other researchers have also found reluctance to rely upon family members due to a desire not to concern them or add stress to their lives; however, when crises occurred these subjects would utilize family social support.<sup>81</sup> This finding is consistent with our participants, who expressed “hating to ask” others for assistance due to their challenging circumstance, but a willingness to utilize support if they reached the “point” of need.

The decision to draw on social support may occur at a certain internalized tipping point; once one’s needs reach a point where health demands exceed an individual’s capacity and such need is beyond the scope of health care professionals, he or she may leverage social supports. Prior to this point, when individuals are able to meet their own needs or may draw on health care providers, perceptions of support may provide individuals with the reassurance that they can manage their challenging circumstances and this reassurance may be more valuable than the actual receipt of support.

### **Limitations**

The small sample size in the current study precluded the identification of any statistically meaningful relationships in the quantitative analysis of social support survey responses. Due to our desire to focus on vulnerable adults, there may not have been sufficient variation in support needs to find relationships between individual factors and social support responses. Evaluating not just number of conditions, but overall disease burden, health trajectory,<sup>82</sup> or specific disease types<sup>83</sup> might have provided additional information. The qualitative analysis, however, helped elucidate not just perceptions of social support, but also sources of support and willingness to draw upon that support. This study provided insight into the experience of social support among vulnerable rural Appalachian adults. Although many of the challenges these participants faced and resources they relied upon may be similar in other rural communities, it is unclear whether our findings are similar to others that concern perceptions of social support among rural residents.

### **Implications**

Despite these limitations, this study’s emphasis on assessing, both quantitatively and qualitatively, the nature of social support in a rural population offers key insights and novel and situated findings. By using the MOS Social Support Survey, an established instrument that is widely used and validated, we were able to identify the extent of perceived support within certain domains. By complementing these data with grounded insights, rural middle-aged and older adults provided a more nuanced view of support. The hesitation to draw upon family support suggests that self-management support programs may be particularly promising for helping residents address their health needs while maintaining their value of self-reliance. Respondents’ utilization of professionals also suggests that enhancing medical

and social service resources within the community is likely to promote MM self-management. Such insights are greatly needed to advance substantive, theoretical, and applied knowledge to improve the lives of vulnerable rural adults.

## Notes

1. Revicki DA, Mitchell JP. Strain, social support, and mental health in rural elderly individuals. *J Gerontol.* Nov; 1990 45(6):S267–74. [PubMed: 2229953]
2. Gore S. The effect of social support in moderating the health consequences of unemployment. *J Health Soc Behav.* Jun; 1978 19(2):157–65. [PubMed: 681730]
3. Wingo PA, Tucker TC, Jamison PM, et al. Cancer in Appalachia, 2001–2003. *Cancer.* Jan 1; 2008 112(1):181–92. [PubMed: 18000806]
4. Murray CJ, Kulkarni S, Ezzati M. Eight Americas: new perspectives on U.S. health disparities. *Am J Prev Med.* Dec 29.2005 (5 Suppl 1):4–10. [PubMed: 16389119]
5. Blazer DG, Landerman LR, Fillenbaum G, et al. Health services access and use among older adults in North Carolina: urban vs. rural residents. *Am J Public Health.* Oct; 1995 85(10):1384–90. [PubMed: 7573622]
6. Hutson SP, Dorgan KA, Phillips AN, et al. The mountains hold things in: the use of community research review work groups to address cancer disparities in Appalachia. *Oncol Nurs Forum.* Nov; 2007 34(6):1133–9. [PubMed: 18024340]
7. Yabroff KR, Lawrence WF, King JC, et al. Geographic disparities in cervical cancer mortality: what are the roles of risk factor prevalence, screening, and use of recommended treatment? *J Rural Health.* 2005 Spring;21(2):149–57. [PubMed: 15859052]
8. Behringer B, Friedell GH. Appalachia: where place matters in health. *Prev Chronic Dis.* Oct.2006 3(4):A113. Epub 2006 Sep 15. [PubMed: 16978488]
9. Bostick RM, Sprafka JM, Virnig BA, et al. Predictors of cancer prevention attitudes and participation in cancer screening examinations. *Prev Med.* Nov; 1994 23(6):816–26. [PubMed: 7855115]
10. Litaker D, Tomolo A. Association of contextual factors and breast cancer screening: finding new targets to promote early detection. *J Womens Health (Larchmt).* Jan-Feb;2007 16(1):36–45. [PubMed: 17324095]
11. Halverson, JA.; Ma, L.; Harner, EJ. An analysis of disparities in health status and access to health care in the Appalachian region. West Virginia University; Morgantown, WV: 2004. Available at: [http://www.arc.gov/assets/research\\_reports/AnalysisofHealthDisparitiesIntroductionExecutiveSummary.pdf](http://www.arc.gov/assets/research_reports/AnalysisofHealthDisparitiesIntroductionExecutiveSummary.pdf)
12. Zhang, Z.; Infante, A.; Meit, M., et al. An analysis of mental health and substance abuse disparities and access to treatment services in the Appalachian region. Appalachian Regional Commission; Washington, DC: 2008. Available at: [http://www.arc.gov/assets/research\\_reports/AnalysisofMentalHealthandSubstanceAbuseDisparities.pdf](http://www.arc.gov/assets/research_reports/AnalysisofMentalHealthandSubstanceAbuseDisparities.pdf)
13. Stensland, J.; Mueller, C.; Sutton, J. An analysis of the financial conditions of health care institutions in the Appalachian region and their economic impacts. Appalachian Regional Commission; Washington, DC: 2002. Available at: [http://www.arc.gov/assets/research\\_reports/AnalysisoftheFinancialConditionsofHealthCareInstitutionsinAppalachianRegion.pdf](http://www.arc.gov/assets/research_reports/AnalysisoftheFinancialConditionsofHealthCareInstitutionsinAppalachianRegion.pdf)
14. Ricketts TC. The changing nature of rural health care. *Annu Rev Public Health.* 2000; 21(1):639–57. [PubMed: 10884968]
15. Hartley D. Rural health disparities, population health, and rural culture. *Am J Public Health.* Oct; 2004 94(10):1675–8. [PubMed: 15451729]
16. Belanger K, Stone W. The social service divide: service availability and accessibility in rural versus urban counties and impact on child welfare outcomes. *Child Welfare.* 2008; 87(4):101–24. [PubMed: 19391469]
17. Lengerich EJ, Tucker TC, Powell RK, et al. Cancer incidence in Kentucky, Pennsylvania, and West Virginia: disparities in Appalachia. *J Rural Health.* 2005 Winter;21(1):39–47. [PubMed: 15667008]

18. Halverson JA, Barnett E, Casper M. Geographic disparities in heart disease and stroke mortality among Black and White populations in the Appalachian region. *Ethn Dis.* 2002 Fall;12(4):S3–82–91. [PubMed: 12477161]
19. Serrano E, Leiferman J, Dauber S. Self-efficacy and health behaviors toward the prevention of diabetes among high risk individuals living in Appalachia. *J Community Health.* Apr; 2007 32(2): 121–33. [PubMed: 17571525]
20. Rowland D, Lyons B. Triple jeopardy: rural, poor, and uninsured. *Health Serv Res.* Feb; 1989 23(6):975–1004. [PubMed: 2645253]
21. Fortin M, Bravo G, Hudon C, et al. Prevalence of multimorbidity among adults seen in family practice. *Ann Fam Med.* May-Jun;2005 3(3):223–8. [PubMed: 15928225]
22. Van den Akker M, Buntinx F, Metsemakers JF, et al. Multimorbidity in general practice: prevalence, incidence, and determinants of co-occurring chronic and recurrent diseases. *J Clin Epidemiol.* May; 1998 51(5):367–75. [PubMed: 9619963]
23. Piette JD, Kerr EA. The impact of comorbid chronic conditions on diabetes care. *Diabetes Care.* Mar; 2006 29(3):725–31. [PubMed: 16505540]
24. Bayliss EA, Steiner JF, Fernald DH, et al. Descriptions of barriers to self-care by persons with comorbid chronic diseases. *Ann Fam Med.* May-Jun;2003 1(1):15–21. [PubMed: 15043175]
25. Vogeli C, Shields AE, Lee TA, et al. Multiple chronic conditions: prevalence, health consequences, and implications for quality, care management, and costs. *J Gen Intern Med.* Dec; 2007 22(Suppl 3):391–5. [PubMed: 18026807]
26. Jerant AF, von Friederichs-Fitzwater MM, Moore M. Patients' perceived barriers to active self-management of chronic conditions. *Patient Educ Couns.* Jun; 2005 57(3):300–7. [PubMed: 15893212]
27. Beaver, PD. Rural community in the Appalachian South. University Press of Kentucky; Lexington, KY: 1986.
28. Bryant, FC. We're all kin: a cultural study of a mountain neighborhood. University of Tennessee Press; Knoxville, TN: 1981.
29. McCulloch BJ. The relationship of family proximity and social support to the mental health of older rural adults: the Appalachian context. *Journal of Aging Studies.* 1995 Spring;9(1):65–81.
30. Keefe SE. Southern Appalachia: analytical models, social services, and native support systems. *Am J Community Psychol.* Oct; 1986 14(5):479–98. [PubMed: 3799549]
31. Hansen MM, Resick LK. Health beliefs, health care, and rural Appalachian subcultures from an ethnographic perspective. *Family and Community Health.* 1990; 13(1):1–10.
32. Brown, JS.; Schwarzweller, HK. The Appalachian family. In: Riddel, FS., editor. *Appalachia: its people, heritage, and problems.* Kendall/Hunt; Dubuque, IA: 1974. p. 63-75.
33. Rowles GD, Johansson HK. Persistent elderly poverty in rural Appalachia. *J Appl Gerontol.* Sep 1; 1993 12(3):349–67.
34. Duncan, CM. Social capital in America's poor rural communities. In: Saegert, S.; Thompson, JP.; Warren, MR., editors. *Social capital and poor communities.* Russell Sage; New York, NY: 2001. p. 60-86.
35. Evans RJ. A comparison of rural and urban older adults in Iowa on specific markers of successful aging. *J Gerontol Soc Work.* May-Jun;2009 52(4):423–38. [PubMed: 19382028]
36. McIntosh WA, Shifflett PA, Picou JS. Social support, stressful events, strain, dietary intake, and the elderly. *Med Care.* Feb; 1989 27(2):140–53. [PubMed: 2918765]
37. Specht H. Social support, social networks, social exchange, and social work practice. *The Social Service Review.* Jun; 1986 60(2):218–240.
38. Kelsey K, Earp JL, Kirkley BG. Is social support beneficial for dietary change? A review of the literature. *Family and Community Health.* Oct; 1997 20(3):70–82.
39. Kahn, RL. Aging and social support. In: Riley, MW., editor. *Aging from birth to death: interdisciplinary perspectives.* Westview Press; Boulder, CO: 1979. p. 72-92.
40. Sherbourne CD, Stewart AL. The MOS social support survey. *Soc Sci Med.* 1991; 32(6):705–14. [PubMed: 2035047]



41. Wethington E, Kessler RC. Perceived support, received support, and adjustment to stressful life events. *J Health Soc Behav.* Mar; 1986 27(1):78–89. [PubMed: 3711634]
42. House JS. Social support and social structure. *Sociological Forum.* 1987; 2(1):135–46.
43. Sherbourne CD, Hays RD. Marital status, social support, and health transitions in chronic disease patients. *J Health Soc Behav.* Dec; 1990 31(4):328–43. [PubMed: 2135935]
44. Achat H, Kawachi I, Levine S, et al. Social networks, stress and health-related quality of life. *Qual Life Res.* Dec; 1998 7(8):735–50. [PubMed: 10097622]
45. Sherbourne CD, Meredith LS, Rogers W, et al. Social support and stressful life events: age differences in their effects on health-related quality of life among the chronically ill. *Qual Life Res.* Aug; 1992 1(4):235–46. [PubMed: 1299454]
46. Gallant MP. The influence of social support on chronic illness self-management: a review and directions for research. *Health Educ Behav.* Apr; 2003 30(2):170–95. [PubMed: 12693522]
47. Flaskerud JH, Winslow BJ. Conceptualizing vulnerable populations: health-related research. *Nurs Res.* Mar-Apr; 1998 47(2):69–78. [PubMed: 9536190]
48. Appalachian Regional Commission. Socioeconomic overview of the Appalachian region. Appalachian Regional Commission; Washington, DC: 2010. Available at: [http://www.arc.gov/appalachian\\_region/SocioeconomicOverviewoftheAppalachianRegion.asp](http://www.arc.gov/appalachian_region/SocioeconomicOverviewoftheAppalachianRegion.asp)
49. Huttlinger K, Schaller-Ayers J, Lawson T. Health care in Appalachia: a population-based approach. *Public Health Nurs.* Mar-Apr; 2004 21(2):103–10. [PubMed: 14987209]
50. Beck RW, Jijon CR, Edwards JB. The relationships among gender, perceived financial barriers to care, and health status in a rural population. *J Rural Health.* 1996 Summer; 12(3):188–9. [PubMed: 10162850]
51. Black, DA.; Sanders, SG. Labor market performance, poverty, and income inequality in Appalachia. Population Reference Bureau; Washington, DC: 2004. Available at: [http://www.arc.gov/assets/research\\_reports/LaborMarketPerformancePovertyandIncomeInequality1.pdf](http://www.arc.gov/assets/research_reports/LaborMarketPerformancePovertyandIncomeInequality1.pdf)
52. Vyavaharkar M, Moneyham L, Tavakoli A, et al. Social support, coping, and medication adherence among HIV-positive women with depression living in rural areas of the southeastern United States. *AIDS Patient Care STDS.* Sep; 2007 21(9):667–80. [PubMed: 17919094]
53. Logan TK, Walker R, Cole J, et al. Qualitative differences among rural and urban intimate violence victimization experiences and consequences: a pilot study. *J Family Violence.* 2003; 18(2):83–92.
54. Luborsky, M.; Sangar, A. Cultural forces in the acceptance of qualitative research: advancing mixed methods research. In: Curry, L.; Shield, R.; Wetle, T., editors. *Improving aging and public health research: qualitative and mixed methods.* American Public Health Association; Washington, DC: 2006. p. 27–38.
55. StataCorp. *Stata Statistical Software: Release 10.* StataCorp LP; College Station, TX: 2007.
56. Kondracki NL, Wellman NS, Amundson DR. Content analysis: review of methods and their applications in nutrition education. *J Nutr Educ Behav.* Jul-Aug; 2002 34(4):224–30. [PubMed: 12217266]
57. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res.* Nov; 2005 15(9):1277–88. [PubMed: 16204405]
58. Willms DG, Best JA, Taylor DW, et al. A systematic approach for using qualitative methods in primary prevention research. *Med Anthropol Q.* 1990; 4(4):391–409.
59. Miles, MB.; Huberman, AM. *Qualitative data analysis: an expanded sourcebook.* 2nd ed. Sage Publications; Thousand Oaks, CA: 1994.
60. Downe-Wamboldt B. Content analysis: method, applications, and issues. *Health Care Women Int.* Jul-Sep; 1992 13(3):313–21. [PubMed: 1399871]
61. Schoenberg, NE. In-depth interviews. In: Rowles, GD.; Schoenberg, NE., editors. *Qualitative gerontology.* 2nd ed. Springer Publishing Company; New York, NY: 2002.
62. Crabtree, BF.; Miller, WL. Depth interviewing. In: Miller, WL.; Crabtree, BF., editors. *Doing qualitative research in primary care: multiple strategies.* 2nd ed. Sage Publications; Thousand Oaks, CA: 1999. p. 89–107.



63. Patton, MQ. Qualitative research and evaluation methods. Sage Publications; Thousand Oaks, CA: 2002.
64. Bernard, HR. Research methods in anthropology: qualitative and quantitative approaches. Alta Mira Press; Walnut Creek, CA: 2002.
65. NVivo. NVivo qualitative data analysis software: version 2. QSR International Pty Ltd.; Melbourne, Australia: 2002.
66. Ellison CG, George LK. Religious involvement, social ties, and social support in a southern community. *Journal for the Scientific Study of Religion*. Mar; 1994 33(1):46–61.
67. Hofferth SL, Iceland J. Social capital in rural and urban communities. *Rural Sociology*. 1998; 63(4):574–98.
68. Pullen C, Walker SN, Fiandt K. Determinants of health-promoting lifestyle behaviors in rural older women. *Fam Community Health*. Jul; 2001 24(2):49–72. [PubMed: 11373166]
69. Schoenberg NE, Coward RT. Residential differences in attitudes about barriers to using community-based services among older adults. *J Rural Health*. 1998 Fall;14(4):295–304. [PubMed: 10349279]
70. Tickamyer AR, Duncan CM. Poverty and opportunity structure in rural America. *Annu Rev Sociol*. 1990; 16:67–86.
71. Krause N, Borawski-Clark E. Social class differences in social support among older adults. *Gerontologist*. Aug; 1995 35(4):498–508. [PubMed: 7557520]
72. Klebanov PK, Brooks-Gunn J, Duncan GJ. Does neighborhood and family poverty affect mothers' parenting, mental health, and social support? *Journal of Marriage and Family*. May; 1994 56(2): 441–55.
73. Schaefer C, Coyne JC, Lazarus RS. The health-related functions of social support. *J Behav Med*. Dec; 1981 4(4):381–406. [PubMed: 7338894]
74. Primomo J, Yates BC, Woods NF. Social support for women during chronic illness: the relationship among sources and types to adjustment. *Res Nurs Health*. Jun; 1990 13(3):153–61. [PubMed: 2343156]
75. Elliot-Schmidt R, Strong J. The concept of well-being in a rural setting: understanding health and illness. *Aust J Rural Health*. May; 1997 5(2):59–63. [PubMed: 9444122]
76. Fox J, Merwin E, Blank M. De facto mental health services in the rural south. *J Health Care Poor Underserved*. 1995; 6(4):434–68. [PubMed: 7495936]
77. Bushy A. Rural women. Lifestyle and health status. *Nurs Clin North Am*. Mar; 1993 28(1):187–97. [PubMed: 8451207]
78. Hayes PA. Home is where their health is: rethinking perspectives of informal and formal care by older rural Appalachian women who live alone. *Qual Health Res*. Feb; 2006 16(2):282–97. [PubMed: 16394215]
79. Thoits PA. Stress, coping, and social support processes: where are we? What next? *J Health Soc Behav*. 1995; (Spec No)
80. Lakey, B.; Cohen, S. Social support theory and measurement. In: Cohen, S.; Underwood, LG.; Gottlieb, BH., editors. *Social support measurement and intervention: a guide for health and social scientists*. Oxford University Press; New York, NY: 2000. p. 29-52.
81. Heitman LK. The influence of social support on cardiovascular health in families. *Fam Community Health*. Apr-Jun;2006 29(2):131–42. [PubMed: 16552290]
82. Arora NK, Finney Rutten LJ, Gustafson DH, et al. Perceived helpfulness and impact of social support provided by family, friends, and health care providers to women newly diagnosed with breast cancer. *Psychooncology*. May; 2007 16(5):474–86. [PubMed: 16986172]
83. Penninx BW, van Tilburg T, Kriegsman DM, et al. Social network, social support, and loneliness in older persons with different chronic diseases. *J Aging Health*. May; 1999 11(2):151–68. [PubMed: 10558434]