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## Adherence to Medication Regimens among Low-Income Patients with Multiple Comorbid Chronic Conditions

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### Abstract

This qualitative study sought to explore facilitators and barriers to adherence to multiple medications among low-income patients with comorbid chronic physical and mental health conditions. The 50 focus group participants identified personal/contextual and health system factors as major impediments to adherence to multiple medications. These factors included medication side effects, fear of harm from medication, fear of dependence on medication, complex instructions, suboptimal communications with doctor, suspicion about doctors' and pharmaceutical companies' motives in prescribing medication, and the high cost of medications. Participants also identified motivators, both internal (self-initiated) and external (initiated by family, doctor, support groups), to ensure adherence to multiple medications. These motivators included self-discipline, sense of personal responsibility, faith, support from family members and doctors, and focused health education and self-management support. Three themes emerged that enhanced understanding of the complexity of adherence to multiple medications: (1) reaching one's own threshold for medication adherence, (2) lack of shared information and decision making, and (3) taking less than the prescribed medication. Further analysis of the data revealed that the patients perceived a lack of shared decision making in the management of their comorbid chronic conditions and their medication regimen.

### Keywords

comorbidity; disease management; focus group; medication adherence or compliance; polypharmacy

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Understanding the illness experience from the point of view of patients who have multiple chronic conditions and are managing multiple medications is an area that has had some research attention, but the complexity and scope of the issue begs for additional examination, especially in an aging population (Bayliss, Steiner, Fernald, Crane, & Main, 2003; Dowell & Hudson, 1997; Moen et al., 2009). One in four U.S. citizens lives with two or more chronic conditions, and by age 65 the prevalence rises to almost 70 percent (Anderson & Horvath, 2004). Almost all of these individuals who seek medical care are treated with multiple prescribed medications (Anderson & Horvath, 2004), but nonadherence is highly prevalent, especially when multiple medications are taken for each co-occurring medical illness (Beusterien, Davis, Flood, Howard, & Jordan, 2008; Roter et al., 1998).

Evidence-based guidelines, usually crafted for one disease, often recommend several medications that result in potentially very complex regimens with conflicting directives in people with multiple comorbid conditions. Patients who take multiple medications tend to incur higher out-of-pocket medication costs (Mojtabai & Olfson, 2003), are reluctant to take multiple medications and have a preference to minimize medicine intake (Pound et al., 2005), experience drug interactions that may result in hospitalizations (Winterstein, Sauer, Hepler, & Poole, 2002), and have a higher likelihood of incurring inpatient admissions (Wolff, Starfield, & Anderson, 2002). These effects, which are more pronounced in economically disadvantaged, minority populations with fewer resources (Kaplan, Bhalodkar, Brown, White, & Brown, 2004; Shenolikar, Balkrishnan, Camacho, Whitmire, & Anderson, 2006), may lead to poor adherence and adverse health outcomes (Mojtabai & Olfson, 2003). Indeed, in a population-based study of medication adherence, fully one out of five low-income patients did not fill all their prescriptions because of cost, and they skipped doses to make their prescriptions last longer (Safran et al., 2002). Trust also plays a role in medication adherence; those with low trust in their physician are more likely to forgo medicines because of cost pressures (Piette, Heisler, Krein, & Kerr, 2005).

Studies have shown that reducing the procedural complexity of drug regimens can improve adherence or clinical improvement for some patients (Schroeder, Fahey, & Ebrahim, 2004; Williams et al., 2005), although most of these studies were conducted with single disease conditions (Andrejak et al., 2000; Leenen et al., 1997; Schroeder et al., 2004). Furthermore, contextual reasons for nonadherence are poorly understood but may stem from patients' perceptions of real or perceived benefits and harms (Townsend, Hunt, & Wyke, 2003), factors related to the disease conditions themselves (Bollini, Tibaldi, Testa, & Munizza, 2004), and other patient preferences that arise from trade-offs that patients are willing to make (Moen et al., 2009).

Patient-centeredness has emerged as the core feature of recent national patient-centered medical home (PCMH) efforts to redesign primary care to improve quality and outcomes of care and reduce health care costs (Rosenthal, 2008). Participatory decision making between patients and clinicians is viewed as a critical component of this care transformation (Institute of Medicine, 2000). Observational studies suggest that participatory decision making may enhance patient activation or self-care, which in turn improves medication adherence (Parchman, Zeber, & Palmer, 2010). PCMH transformation incorporates new ways of organizing practices that include multidisciplinary teams of providers with diverse roles aimed at optimizing comprehensive and coordinated care and prioritizing needed services. Social workers play a critical role in these health care teams, working to bridge the patient's cultural and explanatory models of her or his illness and the prescribing clinician's recommendations. Social workers often have more face time with a patient and may be able to uncover the meaning of the medication for the patient and factors that affect self-care. However, little is known about specific factors that affect the medication self-care practices

of low-income minority patients with multiple comorbidities. Unless we systematically ask minority, low-income, and other vulnerable patients about specific factors that promote or impede their self-care for medication adherence, notions about what works remain unclear.

The purpose of this study was to investigate patients' perspectives of barriers and facilitators to their multiple medication taking as well as their strategies for self-care. Theoretically, this exploratory project was based on Bronfenbrenner's (1979) ecological model of behavior, which posits that there are many levels of factors and processes within and outside the individual's control that influence any behavior, including health behaviors. We chose focus group methods to foster understanding of meaning and context from the patient's perspective among predominantly low-income and racial and ethnic minority adults prescribed multiple medications for at least two chronic co-occurring conditions. This naturalistic phenomenological method creates a process of sharing and comparing personal and familial beliefs about medications and the institutions that prescribe them among participants who may typically regard these issues as too private in individual disclosures. The successful experiences from prior focus groups with inner-city populations (Mishra, Lucksted, Gioia, Barnett, & Baquet, 2009) reinforced our assumptions that the qualitative methodology using focus groups as the data collection method of choice would promote an exchange of ideas on this topic, especially in a social setting that was comfortable for these participants.

## Method

### Sample

We conducted the study at University Family Medicine (UFM), an urban outpatient clinic of the University of Maryland, Baltimore (UMB) School of Medicine, Department of Family and Community Medicine. UFM clinicians provide care to about 20,000 patients, about 70 percent of whom come from the surrounding urban communities comprising racial and ethnic minority and low-income groups. Eligible participants were 40 years or older; had two or more chronic medical conditions and were prescribed two or more medications, in any form on a daily basis; resided in the Baltimore metro area; were not UMB employees or students; were not currently pregnant; and were willing to attend a group discussion session and to answer a short questionnaire. A research team member approached potential participants when they attended their appointments at UFM. If they were amenable and eligible, the study was described and participants indicated their consent by completing a pre-focus group survey on sociodemographic and medical history and participating in the focus group. In a few instances, when already enrolled clinic patients brought their relatives to the focus group, we enrolled the relatives on site if they met the eligibility criteria other than receiving their health care at UFM. The UMB Human Research Protections Office approved all aspects of the research protocol.

### Procedures

We conducted five focus groups with 50 eligible participants between February and March, 2008, with each group comprising nine to 11 participants. Although individual interviews may have yielded similar thematic results, for expediency and with a specific sensitivity to the health and transportation needs of our population of interest, focus groups were chosen. As the groups were populated, we made a design decision to use race/ethnicity and gender where possible to further refine and increase the social interaction of the groups. Some groups were all female and African American; others were mixed race/ethnicity and gender. The main moderator (Ramothea Webster) facilitated all focus groups. Each group met for approximately two hours and was audiotaped with participants' prior consent. Each participant received a \$50 gift card for his or her participation. The research team's expertise

was in health services (Shiraz Mishra and Beth Barnett), qualitative methods and focus group expertise (Deborah Gioia and Saltanat Childress), and clinical medicine (Beth Barnett and Ramothea Webster).

### Focus Group Interview Guide

The focus group interview guide (available upon request from Shiraz Mishra) was piloted with a nonpatient group for ease of use. The guide targeted four key areas for discussion: general knowledge of chronic conditions; medication taking, possible reasons for nonadherence, and strategies for adherence; self-care/ lifestyle concerns and whether and how doctors or other health care team members worked with the patients to develop a tailored self-care plan; and strategies used to overcome barriers faced every day with taking multiple medications. Rather than focus solely on barriers, which was the province of other studies, this study guide was slanted toward an individual strengths perspective. In other words, the team really sought to identify what was working well for these individuals. The moderator used follow-up questions and probes where necessary to pursue a particular discussion thread.

### Data Entry and Analysis

A professional medical transcriber, who was not present at the time of the focus group, transcribed the audio recordings. The lead researcher (Shiraz Mishra) and a graduate assistant then checked the transcripts for accuracy against the tape. Transcripts for each focus group, pre-focus group survey data, and facilitator observations and reflections served as the main data. Interview transcriptions were entered into QSR International's NVivo 8 software program (QSR International, 2008) for qualitative data analysis. Individual group members were not identified; rather, we analyzed each focus group in its entirety for the themes derived from the interview guide. We used template analysis as the coding method of choice for the data set (King, 2004; Miles & Huberman, 1994). Template analysis involves the use of a coding "template" developed by the researchers with themes identified as meaningful in the data with the philosophical assumption that the participants are relating "truths" about their experience with a given condition (King, 2004; Miles & Huberman, 1994). This labor-intensive method is frequently used in health research but necessitates a dedicated team to stay focused on the analysis process.

The research team read all the transcripts to become familiar with the responses. We began our open coding with the first focus group, to create our template with which to code the remaining four focus groups, always reminding ourselves of the original study purpose. Each team member open-coded the transcripts line by line and then the team met regularly to discuss progress with the evolving template, resolve coding dilemmas, and develop more concise codes from the density of the existing codes. The coding template consisted of 25 themes and subthemes that were further refined through analyzing all the focus group responses as we discussed our biases about participant responses (coding template is available upon request from Shiraz Mishra).

### Results

Sociodemographic characteristics, the prevalence of chronic comorbid conditions, and the range of different numbers of medications used by the participants are presented in Table 1. One-half (50 percent) of the participants reported four or more comorbid chronic conditions ( $M = 4.1$ ,  $Mdn = 3.5$ ,  $SD = 2.2$ , range = 2 to 11). More than half (56 percent) of the participants reported using five or more medications ( $M = 3.9$ ,  $Mdn = 4.0$ ,  $SD = 1.7$ , range = 1 to 7), with the majority indicating that it was easy or very easy to take the medications (70 percent) and that they had not missed taking medications during the past week (52 percent).

Focus group questions were structured to have participants respond with their own struggles and successes with juggling multiple medications. The focus group facilitator attempted to keep the discussion on the personal stories when there was topic drift. In addition, we asked specifically for participants' insights into what helped versus what hindered their multiple medication taking, including probes regarding their views of their experiences of doctors involving them in the medication-taking decisions. Initial data analysis focused on the barriers and facilitators of medication adherence, which included self-care strategies and help or motivation by others.

### **Barriers to Medication Adherence**

Barriers identified by the participants were divided into two broad categories by our team: (1) personal/contextual and (2) health system related. Participants discussed choosing not to take medications because of family responsibilities, financial constraints, or their own lifestyle preferences. Some felt that their medication regimen interfered with their day-to-day life and caused them to give up important social roles with their children, family, and friends. Many of the comments reflected a substantial amount of fear and uncertainty about the combination of medications they were supposed to take, and the complexity of the instructions compounded the uncertainty.

Medication adherence was also influenced by the participants' beliefs and attitudes toward the medical profession in general and practices of pharmaceutical companies in particular. Many participants expressed frustration that the drugs were not effective or would cause more harm than benefit—"I was afraid to take the whole thing...it will really unbalance me for a couple of days"; were costly and compounded their existing low-income struggles—"I was working and I got laid off and I had to pay for my medications and it cost me \$97 to get all of my prescriptions and I don't have \$97, so I had to choose what medication was the most important"; and were advertised so heavily by the pharmaceutical industry that they felt barraged by media messages and were left confused—"I sit there and I watch TV and I watch all these commercials and it scares the living hell out of me."

### **Facilitators of Medication Adherence**

Motivators for adherence were self-initiated or facilitated by others. Self-initiated motivators included self-care strategies such as self-discipline, sense of personal responsibility, self-initiated decision making, and faith. External motivators included partner/family support, having a good relationship with one's health care team, and educational groups. Within this low-income urban community, social support from family and friends played a very important role in both providing emotional sustenance and encouraging adherence to treatment.

As we began to consider the barriers and facilitators to medication adherence in the context of the participants' lives, we noticed there was more to the data than just barriers and facilitators, and the personal context of medication taking was what we felt the participants were trying to relate to us. The coded data yielded three main results related to the personal context of polypharmacy management. The important main results from this study are as follows: reaching one's own threshold for medication adherence, lack of shared information and decision making, and taking less medication.

### **Reaching One's Own Threshold for Medication Adherence**

Many participants described reaching their limit or threshold for taking medication and not being able to add one more thing to their regimen. One participant's anguish over reaching his threshold with multiple hypertension medications prescribed by his doctor was evident:

“[The doctor said] ‘I can put you on five medications because some people are on five you know,’ and I said, Oh my God...I don’t want that third pill [because] the third pill might be the killer.” Another participant described the following:

I was telling somebody earlier I should be taking pain pills for my back, am in serious pain right now, but am taking so many other pills I said that unless I am really, really, really really in pain I don’t take the pain pill.”

Many focus group participants expressed a common concern that taking multiple medications “is more than I can handle.” Personal decisions and actions from this feeling of being overwhelmed by too many medicines were most often developed by the participants without consultation with their health care professional. This next participant spoke about her personal decision making when she reached the threshold of trying to take all the medications, and she shared strategies about how to make sense of what she was doing.

One thing about medicine, as soon as you get on some medicine...the next thing you know, the doctor put you on something else. Your system may have gotten used to the old medicine and then they give you something else that turns your system all the way around. Sometimes you have to be out of compliance when you get a new medicine. It’s good to keep a journal and write down when you start that medicine and your reactions to it because I was given a medication and told to take two [pills]. I took one [pill] instead and that paralyzed me for six hours. If I had taken two I would have been dead.

Here, negative side effects outweigh perceived benefits, and the participant’s negative personal experiences and history with trying to be compliant affected her ability to do as the doctor had prescribed.

## Lack of Shared Information and Decision Making

The study team was curious to learn whether patients might describe some evidence of shared decision making with their providers. The following quotes allude to evidence about shared decision making.

My doctor sat down with me and told me about the arthritis I have. The plan is to go and see an orthopedist...who suggested I have water therapy.

I work with a diabetes educator who is also here at the university...alongside my primary care physician and that’s where I go to discuss my diabetes.

Nobody knows your body better than you...you got to be strong and the best way to take care of your disability [is by] doing the best you can for yourself, you can’t depend on doctors, they are only human. You got to work with them.

A central barrier to shared decision making was having too many doctors prescribing the medications, too many pharmacies filling the prescriptions, and no sharing of information between those entities or with the patient. As one participant indicated, “how do you, how do you know [when] I am taking this for my high cholesterol, and these two medications don’t mix...and so you wonder [is it] better not to take the medications?”

## Taking Less Medication

When individuals make the decision to “doctor themselves” as one participant stated, they often undermanage their disorders with less medication than prescribed. In this construct, noxious medication side effects or route of medication (for example, injection) played a strong role in taking less medication than prescribed as did the misunderstanding or absence of medication instructions from a medical professional. People struggling with overcoming

addiction who also had co-occurring diabetes could not bring themselves to test their blood or give themselves an injection because of the association with their IV drug use. They did not speak with their doctor about this concern. A diabetic participant stated, “I forget every now and then to take my insulin, but I don’t like needles to begin with, so that is a mental thing.” When there is an afternoon pill to take, “Give me a pill in the middle of the day and I have trouble with it. I have never figured that one out!” Individuals do notice when they have not been able to keep to the routine but the behavior is harder to change, as indicated by the following: “I didn’t take my meds...if I don’t take them in the morning you can feel the difference ...high blood pressure, diabetes.”

Participants may unknowingly compromise their health when they only follow part of their medication regimen. Because the approach of many physicians may be to add more medications when the patient is symptomatic, the individual participant often adopts a counter or subtractive approach to controlling their multiple disorders and medications. One participant with high blood pressure said,

you know I am thinking I can beat this thing. My doctor ,, , he’s starting me off with one pill. So I’m saying...am not gonna take ’em. (And the blood pressure stayed high). After that I got another prescription from him and he put me on not one but two [pills].” Finally the individual decides to take the medication and he explains, “I don’t want that third pill...the third pill might be the killer, you know what I mean?”

Some participants ascribed their negative symptoms to their medications rather than to their disease processes. In turn, they reduced their medication adherence without consulting their doctor. In particular, participants in the all-male group discussed sexual side effects that they attributed to their medications, even though many of their chronic disease processes could also have caused their sexual dysfunction. The participants’ discussion regarding sexual dysfunction revealed a great deal of misinformation about medications like Viagra and Cialis as expressed in the following statement: “[The pill] relieves the blood flow in the penis so you can get an erection because when you eat a lot of greasy foods—that’s what clots your blood up. Cialis...it cleans the blood clotting.”

## Discussion

This research was motivated by the need to understand how participants with multiple comorbid conditions dealt with adherence to complex medication regimens that resulted from multiple prescribed medications and whether and to what extent they sought help from their providers on navigating the complexities of medication taking. A compelling finding of this study is participants’ perceptions of a lack of shared decision making with their doctors in the management of their comorbid chronic conditions and multiple medications when this was introduced as a topic in the focus groups. With one exception, the participants were unable to articulate whether their doctors or health care team discussed the multiple medications prescribed to them or helped them design a tailored medication and self-care management plan. In lieu of a doctor–patient devised management plan, participants used their resources to adhere (optimally or suboptimally) to their medication regimens at the risk of undermanagement of their chronic conditions. Data seem to suggest that medication adherence is negatively affected when participants reach a personal threshold or saturation point that stems from additions or changes to their medication schedule, resulting in “doctor[ing]” themselves.

Recent qualitative studies on this topic have sampled specific disease and population targets in medication management, such as hypertension (Williams et al., 2005), depression (Bollini et al., 2004), and people over 65 years of age (Moen et al., 2009). This current study is

unique for its contribution of sampling a general family clinic population and not restricting to either physical or mental disorders. The focus group format allowed the researchers to discover, as the group unfolded, the complicated medication regimens that many participants were handling on a daily basis for a host of physical and mental disease processes. Through the group sharing, participants were able to react to the complexity of their fellow group member's experiences as well as describe their own strategies.

Reaching the decision-making threshold on whether to take or not take medication seemed to be a personal explanatory model, a rationale for how these participants influenced their medication taking, and worthy of further study to unpack the components of this decision-making threshold process. The decision-making process also represents a point of entry for the social worker on the team, especially when the patient does not disclose these medication barriers with his or her physician.

Our findings support prior studies demonstrating that patients with multiple chronic conditions are more effectively supported when their physicians provide a combination of thorough and relevant information in the context of shared decision making (Bodenheimer, Lorig, Holman, & Grumbach, 2002; Heisler, Bouknight, Hayward, Smith, & Kerr, 2002; Heisler, Cole, Weir, Kerr, & Hayward, 2007). Within their clinical encounters, participants in our study described that their own preferences and goals were not generally integrated into treatment plans, and they ended up taking less medication than prescribed. In contrast, shared decision making promotes effective and viable treatment and management plans (Van Hecke, Grypdonck, & Defloor, 2009; World Health Organization, 2003); fosters more effective treatment relationships between patients and health care professionals; and provides the context to explore therapeutic options, discuss medication regimens, and consider follow-up actions (Van Hecke et al., 2009). Yet other reasons are rooted in, and are exacerbated by, systemic barriers such as high medication costs, lack of insurance, and the relationship between drug companies, medical practitioners, and patients in the management of chronic diseases.

Social workers who understand the literature on medication adherence can intervene by asking each patient to discuss in detail what his or her strategy is for filling and taking each prescription. If they have just one new medication, patients can ask how they will add it to the other medications they already take. Social workers can play a big role in helping to initiate and strengthen a shared decision-making model by education and role play with the patient and encouraging the patient to take these concerns back to their doctors. The perspectives of patients and health care professionals can be pooled to arrive at mutually agreed goals (Bissell, May, & Noyce, 2004). Our study extends these findings to low-income, racial and ethnic minority patients who generally experience worse outcomes than less vulnerable populations. Shared decision making may promote a patient's sense of personal control, an important prerequisite for successful self-management and self-efficacy (Bandura, 1997).

Despite its importance, shared decision making in the management of comorbid chronic conditions was largely absent from participants' experiences with their doctors and medication regimens. Our findings shed light on possible contextual factors necessary for shared decision making to occur. One is a general understanding that self-management of chronic diseases does not happen in isolation. Individuals need a sense of self-efficacy to manage their chronic conditions. People face multiple personal barriers that are mutually reinforcing and that make it difficult to adhere to their multiple medication regimens. Yet other reasons are rooted in and exacerbated by systemic barriers such as high medication costs; lack of insurance; and the relationship between drug companies, medical practitioners, and patients in the management of chronic diseases.



This study has several additional implications for social work practice with patients with comorbid chronic conditions. Social work research underscores the importance of incorporating contextual understanding in the development of community-based programming and interventions with disadvantaged populations. This study's identification of potential barriers and facilitators offers an opportunity to include an understanding of these factors in the development of strengths-based programs and interventions. The study's results imply that practitioners working with low-income patients with multiple comorbid chronic conditions need to be aware of the various personal, contextual, and systemic barriers that may affect multiple medication adherence. Results of the present study imply that family support and responsibilities are one of the biggest motivators for both adherence and healthy lifestyle. Social work practitioners can develop programs that decrease social isolation and enhance social networks to increase compliance and improvement in health outcomes through coordination of interventions—like local self-help groups—to provide outreach, health education, or referrals to appropriate social services.

Furthermore, as the findings indicate, patients often report a good relationship with the doctor as the most significant facilitator for adherence. Conversely, when patients report suboptimal communication and relationship with the doctor to their social worker, they may feel intimidated or disregarded, which often makes it difficult for them to follow the doctor's recommendations. The study's results suggest it is important that all practitioners use the existing strengths of individuals in the population and develop programs and interventions that would empower and educate them for new ways of coping with the disease through their shared experience and use the necessary resources and means to improve relationships and expand the capacity of the population to take advantage of the full range of services provided by health care professionals—such as exercise facilities, special educational opportunities, and community or self-help groups (Holman & Lorig, 1992).

Finally, in the voices of the participants we learn that self-discipline and self-monitoring, relying on others, cultivating a sense of personal responsibility, and faith are important self-initiated motivators for adherence that need to be explored in future studies. With the growth of strengths-based models in social work, practitioners play a crucial role in ensuring the health and well-being of marginalized populations using self-efficacy models. In these models patients are encouraged to develop self-management behaviors in ways that foster independence, shared-decision making, efficacy, and active participation in the determinants of their health outcomes. Such partnerships between physicians and patients and social workers encourage processes tailored to an individual patient's needs. These care processes may benefit from social work interventions that extend beyond the clinical setting to include family and community based support networks.

Our study has some limitations. First, there was no larger discussion in the focus groups to determine whether participants' supports directly affected barriers to adherence. A follow-up series of focus groups with the same participants, or individual interviews, might have provided a deeper level of understanding of the interplay between these barriers and supports. Second, our findings are neither representative nor generalizable to any other population of patients with comorbid chronic conditions taking multiple medications. Third, we did not tie the comments back to the speaker, so we were not able to analyze the data with regard to gender, race, or other demographic data collected in the screening form. Focus groups serve us best in obtaining formative targeted information about the main research questions, and we did observe convergence on themes of barriers and facilitators which may help inform future interventions to enhance adherence to multiple medication regimens.

In conclusion, understanding medication regimen complexity and lack of shared decision making seem to be major adherence barriers faced by patients with multiple comorbid chronic conditions. The descriptions in this study are rich and telling about next steps for health care teams. Rather than blame individuals for their struggles with adherence, we need to consider interventions aimed at improving medication taking, self-efficacy, and enhanced shared decision making that may help improve patients' adherence to complex, multiple medication regimens within their community context. Social workers are in a unique position to encourage patients to talk about the meaning of their medications and their plans for taking the medications and facilitate the dialogue between all stakeholders for a more informed use of multiple prescriptions and better health outcomes.

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**Table 1**

Sociodemographic Characteristics, Prevalence of Chronic Comorbid Conditions, Multiple Medication Usage among the Focus Group Participants ( $N = 50$ )

Characteristic	All	
	<i>n</i>	%
Age (years)		
40–49	19	38
50–59	17	34
60 or older	14	38
Gender		
Female	30	60
Male	20	40
Race/ethnicity		
White	8	16
Black	42	84
Group composition, gender by race/ethnicity		
Group 1: Black, female	11	22
Group 2: Black and white, male and female	9	18
Group 3: Black and white, female	10	20
Group 4: Black, male	10	20
Group 5: Black, male and female	10	20
Education level		
Some high school or less	11	22
High school graduate	23	46
Some college	11	22
College graduate	5	10
Marital status		
Married or living together	14	28
Single (divorced, widowed, separated, never married)	31	79
Employment status		
Not in the workforce (homemaker, student, retired)	34	68
In the workforce (employed for wages, self-employed, unemployed)		
Health insurance status		
Only private insurance	16	33
Only government insurance	27	55
Both private and government insurance	5	10
Uninsured	1	2
Resources received		
None	15	30
Temporary Assistance for Needy Families	4	8
Women, Infants and Children	1	2
Social Security Insurance	20	40
Disability insurance	4	8

Characteristic	All	
	<i>n</i>	%
Veterans assistance	2	4
Unemployment benefits	4	8
Total annual household income from all sources		
Less than \$7,500	20	42
\$7,500–\$24,999	15	31
\$25,000 or more	13	27
Most commonly cited chronic conditions <sup>a</sup>		
High blood pressure	33	66
High cholesterol	25	50
Depression	21	42
Diabetes	20	40
Chronic back pain	20	40
Arthritis	18	36
Asthma	11	22
Acid reflux	10	20
Chronic bronchitis/emphysema	9	18
Heart disease	8	16
Osteoporosis	8	16
Headache/migraine	6	12
Obesity	6	12
Incontinence	5	10
Nerve pain	4	8
Number of comorbid chronic conditions		
Two comorbid chronic conditions	12	24
Three comorbid chronic conditions	13	26
Four comorbid chronic conditions	11	22
Five or more comorbid chronic conditions	14	28
Number of medications taken daily		
2–4 medications	22	44
5–6 medications	18	36
7 or more medications	10	20
How difficult or easy is it to take medications?		
Very or somewhat difficult	15	32
Easy	25	50
Very easy	10	20
During the past week, how often did you miss taking medications?		
Never	26	52
1–2 times	19	38
3 times or more often	5	10

<sup>a</sup>Participants had the option to provide multiple responses; thus, the sample size (*n*) and proportion (%) add up to more than 50 and 100 percent, respectively.