

## **Family as Motivation and Adjuncts to Therapy in Sustained Improvement of Chronic Modifiable Illnesses**

A survey of family involvement in the care of patients with chronic illnesses seen by providers at Central Mississippi Health Services, Inc. in Jackson, Mississippi with recommendations for clinic promotion of family integration in care

**By Jasmine Washington**

MD Candidate, Class of 2016

The Warren Alpert Medical School of Brown University, Providence Rhode Island

GE-National Medical Fellowship Primary Care Leadership Program Scholar, Summer 2014

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### **Abstract**

Chronic illnesses currently affect about half of the American population, and many are prescribed multiple medications to control each condition.<sup>6, 12</sup> Although about 60% of these patients are poorly adherent to treatment regimens, few tactics short of hospitalization lead to significantly increased and sustained compliance<sup>4</sup>. Although the role of family in the care of these patients has been investigated with mixed conclusions, family members themselves have not been implicated as supplements to current medical treatment regimens. In light of this, a study was conducted involving the patient population of Central Mississippi Health Services, Inc. in Jackson, Mississippi. It is proposed that encouraging patients to involve family members in all aspects of their care is related to lasting improvement in patient outcomes with the potential to decrease incidence and prevalence of early onset chronic illnesses in younger generations due to lifestyle changes implemented. After surveying the patient population over a three week period, it was found that hypertension, diabetes, and hyperlipidemia were the most common illnesses, with those with a family history of chronic conditions having a greater than 50% chance of developing the same condition. In addition, it was shown that 51% of those with chronic conditions are living with more than 1 condition, and 41% of those with chronic conditions are currently prescribed more than 3 medications per day to attempt to control

symptoms and prevent sequelae of the illness. Despite 77% of patients believing family is important to their treatment, only 33% have family involved in clinic visits in some way and less than 50% encourage healthy lifestyle modifications like eating healthier. To combat these issues, it is recommended that providers actively encourage family companions to accompany patients for clinic visits, conduct effective motivational interviews to increase likelihood of lasting lifestyle modifications and treatment adherence, and implement family-centered programs to educate patients and family members about chronic conditions plaguing their families and how to better manage these conditions with lifestyle alterations, familial assistance, and medication compliance.

**Key Words**

Family, Chronic Illness, Therapy, Lifestyle Modifications, Hypertension, Diabetes

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## **Introduction**

It is now popular knowledge that chronic illnesses plague a significant portion of the world's population. In fact, chronic illnesses currently affect about half the American population, with almost a third afflicted with 2 or more chronic conditions.<sup>8,12</sup> Of the major chronic illnesses prevalent in the American population, the most common and morbid conditions including hypertension, diabetes, dyslipidemia, and obesity are among those that are not only modifiable but potentially preventable. The main risk factors causing many of these chronic conditions, regardless of socioeconomic status, include unhealthy diet, minimal physical activity, and tobacco usage. Also, it is known about 80% of these chronic conditions and their sequelae like premature heart disease and stroke could be prevented with healthier diets, regular physical activity, and smoking cessation.<sup>14</sup> Because many seek medical attention after conditions have already worsened, the state of their health is such that they require multiple medications to control each condition<sup>6,12</sup>. This likely contributes to the fact that more than 75% of the nation's healthcare costs are generated from patients with chronic conditions.<sup>8,12</sup> In addition, many of these chronic conditions tend to be present in family members of patients suffering from these illnesses. Despite knowing chronic conditions "run" in their families, some feel powerless to prevent these conditions which seem pervasive within their family<sup>1</sup>. Therefore, action must be taken to disprove this myth and decrease the incidence of these illnesses as well as better treat existing cases.

## **Background**

Although chronic illnesses like hypertension, diabetes, and obesity are prevalent within the American population, little is done to treat these conditions outside of medical treatment and encouraging positive lifestyle modifications. Though medications are actively prescribed to aid

in improving health outcomes, these medications and proposed lifestyle changes rarely come with resources to support proper transition into this new lifestyle and to aid in long-term maintenance. In fact, about 40% of adults with chronic conditions rarely receive any help to manage their conditions.<sup>11</sup> In addition, it is also known that up to 60% of those on medications for chronic illnesses are non-compliant with 30-60% failing to take medications per instructions<sup>4</sup>. In light of this information, it is proposed that family involvement in the care and therapy of patients with chronic modifiable illnesses will lead to lasting improvement in compliance with treatment regimens with the added potential to decrease the incidence and prevalence of early onset of chronic illness in younger generations due to stronger support for positive change and the lifestyle modifications implemented.

### **Methodology**

In order to further investigate this question, a randomized cross-sectional survey of the Central Mississippi Health Services patient population was conducted. From June 27- July 18, 2014, a 4 page questionnaire was distributed at clinic sites located at Winter Street, Robinson Road Extension, and Tougaloo College in Jackson, Mississippi. Surveys were distributed in the waiting room, post-triage, while patients waited to be seen in the exam room, and after their encounter with their provider. For patients with difficulty reading the survey, assistance was given to help them complete the survey. Upon completion, surveys were collected either by hand or were placed in a designated box at the front desk.

### **Results**

Over the 3 week period, 111 surveys were returned. In Figure 1, the sex of patients surveyed is graphed, showing 67% (74) were female and 33% (37) were male. In Figure 2, the age groups of patients are displayed, showing 8 patients in the 20-29 age group, 9 in the 30-39

group, 23 in the 40-49 group, 31 in the 50-59 group, 27 in the 60-69 group, 12 in the 70-79 group, and 1 in the 80+ group.

Figure 3 shows the body mass index (BMI) of patients surveyed, with 1 patient with an underweight BMI (<18.5), 18 within a healthy weight range (BMI 18.5-24.9), 26 who were overweight (BMI 25-29.9), 24 who were obese (BMI 30-34.9), 17 with a BMI of 35-39.9, and 17 with a BMI of 40+. Figure 4 shows the chronic conditions present within a patient's family as well as conditions the patients themselves currently live with. Figure 5 displays the number of chronic conditions a patient is living with, with 16% (18) having 0 chronic conditions, 33% (36) having 1 chronic condition, and 51% (57) having more than one chronic condition.

Figure 6 shows the number of medications taken daily for patients' chronic conditions showing that 25 take 0 medications; 36 take 1-3 medications; 23 take 4-6 medications; 15 take 7-9 medications; and 4 take 10 or more medications.

Figure 7 shows 23% of patients do have some form of family assistance in order to remain compliant with medication regimens while 77% do not. Figure 8 demonstrates 33% of patients have family members that are involved in clinic visits while 67% do not. Figure 9 displays 17% of patients who stated they do engage in exercise also exercise with family while 83% do not. Figure 10 shows 47% of patients feel their families encourage healthy eating habits while 53% do not.

Figure 11 shows 81% of patients feel their family motivates them to become healthier while 19% do not. Figure 12 demonstrates 70% of patients feel family members actively encourage positive lifestyle changes and habits while 30% do not. Figure 13 shows 76% of patients feel their lifestyle changes have helped to improve the health of their family while 24%

do not agree. Figure 14 demonstrates 77% of patients feel their family plays an important role in their care while 23% do not agree.

## **Discussion**

It is evident that by looking at Figure 1, female patients are significantly over represented as compared to their male counterparts. This may be due to the fact that women are generally more likely to seek medical attention. Also, it is seen that the majority of those surveyed were within the 40-69 age group, possibly confirming statements by Dubar-Jacob et al that the young-old demonstrate the highest levels of treatment adherence.<sup>4</sup> From Figure 3, it is clear that the majority of the patient population (82%, 84 patients) seen at CMHS is overweight or obese. Data in Figures 4 and 5 show the top 3 conditions plaguing the patient population is hypertension, diabetes and hyperlipidemia, with hypertension being the most common by far. It is interesting to note that the majority of patients (51%, 57 patients) live with more than 1 chronic condition, usually with overlap seen in their family histories. This is significantly higher than the roughly 30% quoted by Salzman et al.<sup>12</sup> It is also seen that a significant number of patients within this population (41%, 42 patients) are currently taking 4 or more medications each day. In light of this data, it is easier to understand that patients can feel overwhelmed by their treatment regimen's complexity as addressed by McGowen.<sup>8</sup> Surprisingly, only 23% of patients admit they receive assistance in some form from their family members in order to remain compliant with medication regimens (see Figure 7). Despite this, 87% of patients state they are compliant with their medications.

As relates to clinic visits, only 33% of patients' family members were involved in some form from scheduling appointments to accompanying the patient to the clinic (see Figure 8). This could also be related to strains in family ties or patients desiring to keep health information

between the patient and physician. Despite this, family involvement should be encouraged by incorporating the family as partners in patients' treatment plans between acute and follow-up appointments. Concerning physical activity, although 70% of those surveyed stated they do engage in some form of exercise, a significant number stated this was only on an occasional basis. This may be why only 17% of those who stated they did engage in exercise did so with a family member (see Figure 9). Encouraging patients to do physical activity daily with a family member can improve the health of both individuals and cultivate better familial relationships. As for eating habits, although roughly 70% of patients admitted to signs of healthier eating habits, only 47% state their family encourages them to do so (see Figure 10). This could be due to the age or place of residence of the family members, their relationship to their family members, or to the Southern culture related to cooking and eating.

In general, patients feel their family motivates them to become healthier, both actively and passively (see Figures 11, 12). This includes reminding patients to take medications, improving eating habits, and increasing exercise regimens. Also, 76% of patients feel their lifestyle changes help to improve the health of their family (see Figure 13). In concordance with data shown in Figure 13, 77% of patients feel family members play an important role in the treatment of their chronic conditions (see Figure 14). If this is truly the case, utilizing families as therapy and motivation could be a promising venture for community health centers like Central Mississippi Health Services to consider in improving the health of its entire patient population.

From this study, it is evident a closer look at patients with hypertension, diabetes, and hyperlipidemia should be taken to better understand what other lifestyle changes were initiated or encouraged by family members. It would also be interesting to conduct interviews of patients and their families to delve further into understanding the impact of being aware that chronic

illness does “run” in their family and what, if any, prophylactic lifestyle changes are made on the part of the currently unaffected family members. It would also be enlightening to discover how open patients are with their families about their chronic conditions and treatment regimens. Additionally, it would be interesting to investigate what are the barriers to engaging in daily physical activity and what exactly do patients consider physical activity to be because this could also shed light on how to better counsel patients on this sort of lifestyle change.

As a result of this study, I am more aware of reasons for poor adherence to treatment regimens, lack of exercise, and poor food choice. I feel that conducting a study of this format encourages building rapport with patients in order to better understand the world from which they come.

### **Recommendations**

In light of this study, it is recommended that providers take into account the significant role family members play in the care of patients with chronic conditions by encouraging patients, if possible, to bring a family member for clinic visits. The family member can serve as historian to fill in gaps left by the patient as well as a first responder, motivator, and emotional supporter. It is also recommended that providers effectively conduct brief, engaging motivational patient interviews to inspire them to make lifestyle changes and seek familial support in their care. By utilizing these techniques, patients are engaged in a conversation with the provider so both can come to an agreement on feasible and sustainable lifestyle changes for the patient. Lastly, it is recommended that there be implementation of family-centered programs for high-risk or consistently non-compliant patients. In this way, patients and family members are able to learn about their chronic condition and the best way for them to manage it.

## **Conclusion**

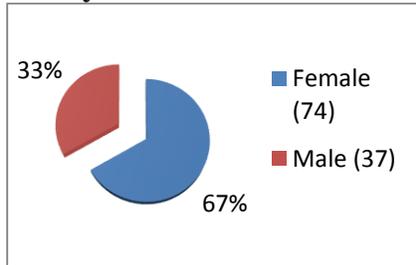
Chronic illnesses affect a significant portion of the American public. Known to “run” in families, conditions like hypertension, diabetes, hyperlipidemia, and obesity are among the most common and most preventable by simple lifestyle changes such as exercise and dieting. Despite beginning poly-pharmaceutical therapy and encouraging lifestyle modifications, many are not able to remain compliant with treatment regimens long-term because they are not equipped with all the necessary resources in which to do so. In order to combat both the rising incidence and prevalence of chronic disease, both patient and family members must be targeted to cause a meaningful impact in the health of these patients. It is recommended that family members be actively encouraged to accompany patients at clinic visits, providers be trained in motivational interviewing, and family-centered programs be implemented to educate high-risk or non-compliant patients and their family members about these conditions and how to manage their treatment.

## References

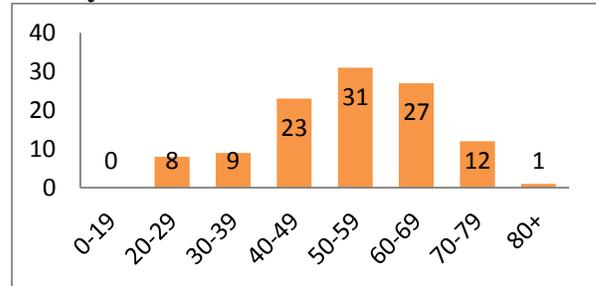
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## Appendix A: Graphed Data Acquired from the Patient Questionnaire

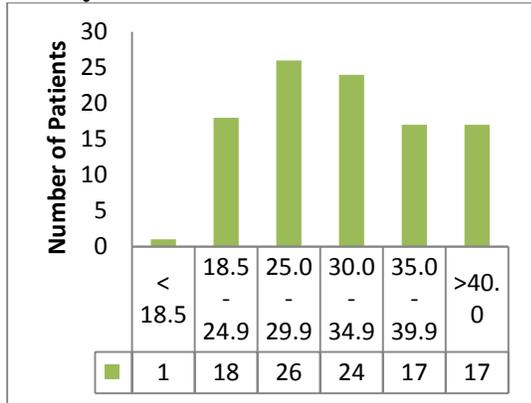
**Figure 1. Sex of Patient Population Surveyed**



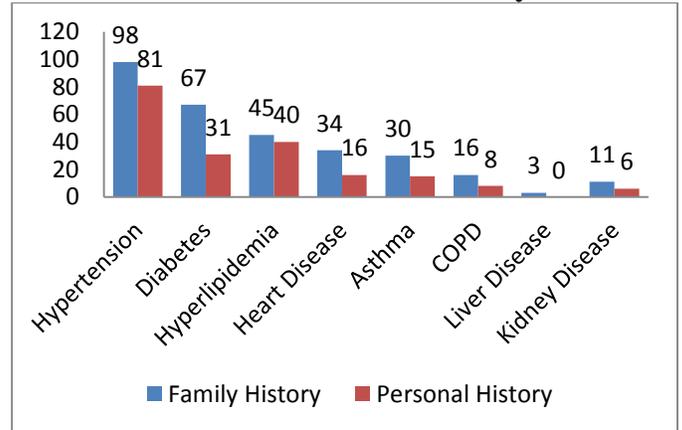
**Figure 2. Age Groups of Patients Surveyed**



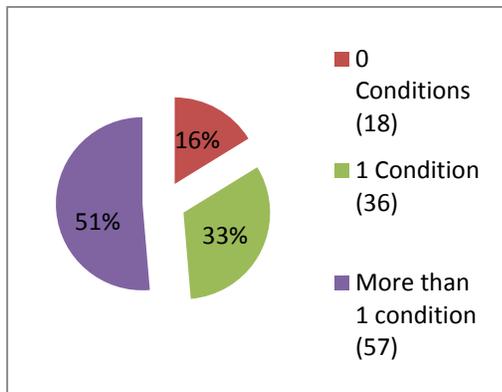
**Figure 3. Body Mass Index of Patients Surveyed**



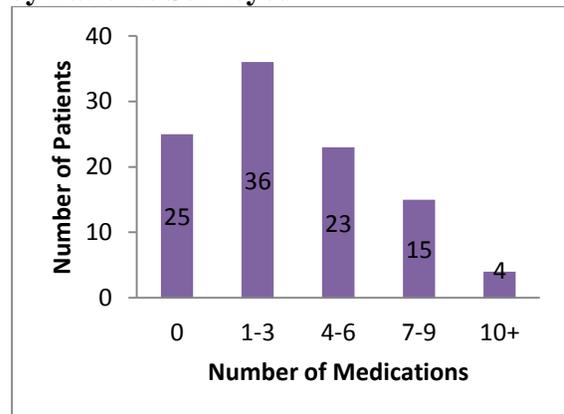
**Figure 4. Family and Personal History of Chronic Conditions in Patients Surveyed**



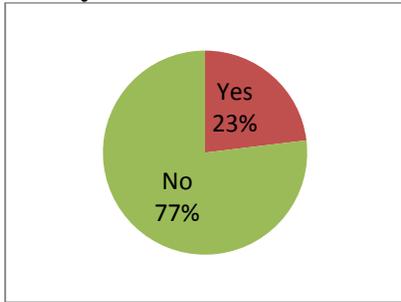
**Figure 5. Patients Surveyed with Personal History of Chronic Illness**



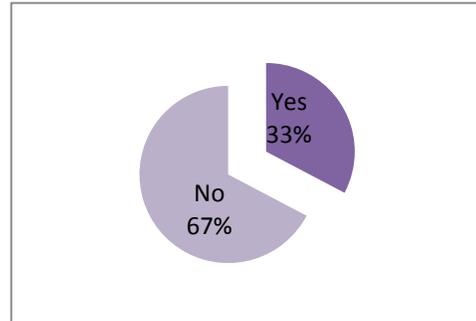
**Figure 6. Number of Medications Taken by Patients Surveyed**



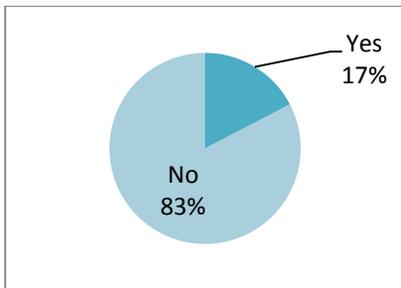
**Figure 7. Family Assistance with Medication Compliance of Patients Surveyed**



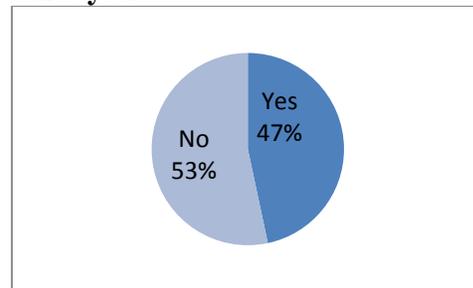
**Figure 8. Family Involved with Patient Clinic Visits**



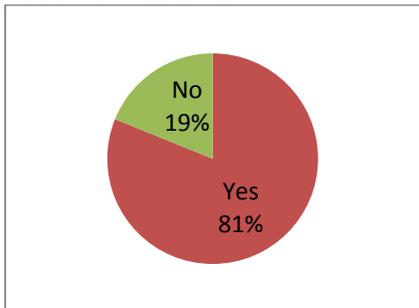
**Figure 9. Family Members Involved in Patient Physical Activity**



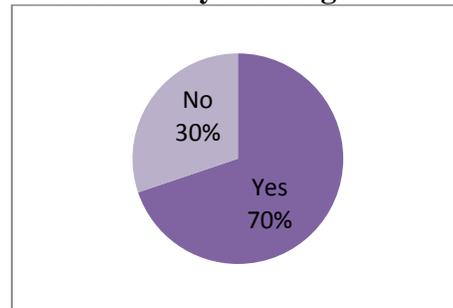
**Figure 10. Family Members Encourage Healthy Eating Habits in Patients Surveyed**



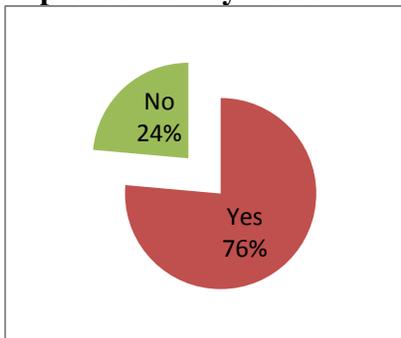
**Figure 11. Family Motivates Patient to Become Healthier**



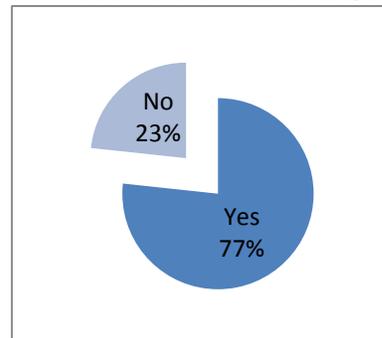
**Figure 12. Family Actively Encourages Positive Lifestyle Changes**



**Figure 13. Patient Feels Lifestyle Changes Improved Family Health**



**Figure 14. Family Plays Important Role in Treatment of Patients Surveyed**



**Appendix B: 4 Page Questionnaire Presented to the Patient Population of the Central Mississippi Health Services, Incorporated in Jackson, Mississippi**

## **Central Mississippi Health Services Patient Questionnaire**

*We are doing a general survey of patient healthcare at Central Mississippi Health Services. Please take a moment to complete this survey so we can better serve you. All information provided in this survey will remain completely anonymous. When you're done, please drop the questionnaire in the labeled box at the front desk. Thank you for your participation.*

### **Section I: Patient Demographics**

- 1) **Your Age:** \_\_\_\_\_
- 2) **Your Gender:**  Male  Female
- 3) **Your Most Recent Weight:** \_\_\_\_\_pounds
- 4) **Your Education Level:**
  - Some Primary Education
  - High School Graduate
  - GED
  - Vocational Education
  - Some College Education
  - Associate's Degree
  - Bachelor's Degree
  - Master's Degree
  - Doctoral Degree
  - Other: \_\_\_\_\_

- 5) **Your Height:**  
\_\_\_\_\_  
*(Example: 5 feet 7 inches)*
- 6) **Your Marital Status:**
  - Single  Married  Divorced  Separated
  - Widowed
- 7) **Do you have any children?**  Yes  No
- 7a) If you answered **yes to Question 7**, what are their ages?  
**No Names Please. (Example- Ages 3,6,9,12)**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### **Section II: Your Health Information**

- 1) Has **anyone in your family** (grandparents, parents, brother or sister, children, or grandchildren) **been diagnosed** with any of the following chronic conditions? **(Select all that apply.)**
  - High Blood Pressure
  - Diabetes (Sugar)
  - High Cholesterol
  - Heart Disease
  - Asthma
  - COPD (Chronic Obstructive Pulmonary Disease)
  - Liver Disease
  - Kidney Disease

- 1a) If you **selected any** of the previous chronic conditions in **Question 1**, please **list who has or had which conditions.** (grandparents, parents, brother or sister, children, or grandchildren). **No Names Please. (Example: Brother--Diabetes)**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2) Have **you previously been diagnosed** with any of the following chronic conditions?

- High Blood Pressure
- Diabetes (Sugar)
- High Cholesterol
- Heart Disease
- Asthma
- COPD (Chronic Obstructive Pulmonary Disease)
- Liver Disease
- Kidney Disease

2a) If you **selected any** of the above conditions in **Question 2**, at what ages were you diagnosed?

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3) Are you a **current or former smoker**?

- Yes  No

3a) If you answered **yes to Question 3**, for **how long** have you or did you smoke?

\_\_\_\_\_ years

3b) If you answered **yes to Question 3**, **how many** packs of cigarettes or how many cigars per day do you or did you smoke?

\_\_\_\_\_ packs

\_\_\_\_\_ cigars

4) If you are a **current smoker**, have you **ever tried to quit smoking**?

- Yes  No

5) If you are a **current smoker**, has a **family member ever suggested** that you **try to quit** smoking?

- Yes  No

6) Do you currently have health insurance?

- Yes  No

7) Are you **able to pay** the **cost to fill your prescriptions** at your local pharmacy?

- Yes  No

### Section III: Your Prescription Medications

1) Do you take medications for your chronic conditions?

- Yes  No

1a) If you answered **yes to Question 1**, **how many different medications** do you take each day?

- 1-3 medications
- 4-6 medications
- 7-9 medications
- 10 or more medications

2) Do you take **all-natural or herbal pills or remedies** for your chronic conditions?

- Yes  No

3) Do you take a **multivitamin** each day?

- Yes  No

4) Do you **take your medications as prescribed** on the bottle each day?

- Yes  No

5) Do you feel it is **important to take your medications as prescribed** on the bottle?

- Yes  No

6) Does **anyone in your family remind you** to take your medications each day?

- Yes  No

6a) If you answered **yes to Question 6**, who reminds you?

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## Section IV: Your Clinic Visits

1) **Before today's visit**, when did you **last see your healthcare provider** for a **check-up or follow-up doctor's appointment** for your chronic conditions?

- Less than 1 month ago
- 1-3 months ago
- 3-6 months ago
- 6-9 months ago
- 9 months- 1 year ago
- More than 1 year ago

2) Do you make your own doctor's appointments?

- Yes  No

3) Does **anyone in your family** remind **you to schedule** your check-up or follow up doctor's appointments?

- Yes  No

4) Do you **go to your scheduled check-up or follow-up doctor's appointments** each time?

- Never
- Sometimes
- Most times
- Always

5) Does **anyone in your family** remind **you to go to** your check-up or follow-up doctor's appointments?  Yes  No

5a) If you answered **yes to Question 5**, **how often** does someone in your family remind you?

- Never
- Sometimes
- Most times
- Always

6) Do you have a **family member(s) to come with you** to your check-up or follow-up doctor's appointments?

- Never
- Sometimes
- Most times
- Always

7) Do you **prefer (like) for your family member(s) to be included** in your check-up or follow-up doctor's appointments?

- Yes  No

8) Do you **prefer (like) for your family member(s) to be included in the exam room** during your check-up or follow-up doctor's appointments?

- Yes  No

## Section V: Your Lifestyle

1) Do you currently exercise?  Yes  No

1a) If you answered **yes in Question 1**, how often?

- Never
- Occasionally
- 1-2 times a week
- 3-4 times a week
- 5 or more times a week
- Everyday

1b) If you answered **yes to Question 1**, do you **exercise with family member(s)**?

- Yes  No

2) Do you feel that it is important to exercise often?

- Yes  No

3) Do you sleep **at least 7 hours** each night?

- Never
- Occasionally
- 1-2 times a week
- 3-4 times a week
- 5 or more times a week
- Every night

4) Do you eat fast food or foods with lots of salt or sugar in them?

- Never
- Occasionally
- 1-2 times a week
- 3-4 times a week
- 5 or more times a week
- Everyday

5) Do you prepare your own meals at home?

- Yes  No

5a) Do you **add salt or sugar** to foods **after** they have been **prepared**?

- Never
- Occasionally
- 1-2 times a week
- 3-4 times a week
- 5 or more times a week
- Everyday

6) Do you **feel that you need to cut back** on your salt or sugar intake?

- Yes  No

7) Has **a family member suggested** that you **should cut back** on your salt or sugar intake?

- Yes  No

### **Section VI: Your Family Life**

1) Do you feel that your family is important to you?

- Yes  No

2) Do you feel you have a good relationship with your immediate family member(s) (grandparents, parents, brother or sister, children, or grandchildren)?

- Yes  No

3) Do you feel that your family motivates you to become healthier?

- Yes  No

4) Do you feel that your family helps you to remain in good health?

- Yes  No

5) Do you feel that your family actively encourages you to improve your health by checking if you are taking medications as prescribed, going to doctor's appointments with you, exercising with you, or making sure you are eating less salt or sugar?

- Yes  No

6) Do you feel that your health affects the health of your family?

- Yes  No

7) Do you feel that your lifestyle changes have improved the health of your family?

- Yes  No

8) Do you feel that your family plays an important role in the treatment of your chronic condition(s)?

- Yes  No

**Thank you for your participation!**  
**PLEASE RETURN the Completed Survey to the**  
**SURVEY BOX Located at the Front Desk.**