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Journal of the American Pharmacists Association

journal homepage: [www.japha.org](http://www.japha.org)

## BRIEF REPORT

## The impact of the COVID-19 pandemic on medical conditions and medication adherence in people with chronic diseases

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## ARTICLE INFO

## Article history:

Received 22 July 2021

Accepted 10 November 2021

Available online 15 November 2021

## ABSTRACT

**Background:** The coronavirus disease 2019 (COVID-19) pandemic has drastically disrupted primary health care and pharmacy services, posing a challenge in people with chronic diseases who receive routine care. Currently, there exists limited literature on the indirect impact of the pandemic on chronic disease management, particularly related to accessibility to medications and health care resources.

**Objectives:** To determine the prevalence of medical- and medication-related problems reported by people with chronic diseases during the pandemic. The secondary objective was to identify the barriers and contributing factors related to these medical- and medication-related problems.

**Methods:** The anonymous and voluntary, Web-based survey was filled out by interested adult respondents with chronic disease(s) across Michigan between September 1, 2020, and January 1, 2021. The primary outcome included self-reported medical- and medication-related problems during the pandemic. Secondary outcomes included potential risk factors for medical- and medication-related problems. Descriptive statistics was used to describe respondents' demographics, chronic disease characteristics, medication adherence, medical- and medication-related problems, and COVID-19-related factors. The multivariable Firth logistic regression was used to analyze correlations between potential risk factors associated with medical- and medication-related problems.

**Results:** A total of 1103 respondents completed the survey and were included in the analysis. Approximately, 51% of respondents reported a medication-related problem with 19.6% reported problems obtaining medication(s) and 31.7% reported forgetting or not taking their medication(s). The top reason for problems obtaining medication(s) was doctor's office being closed for in-person visit(s). In addition, of all responses, more than half reported worsening symptoms of their chronic disease(s) during the pandemic especially with psychiatric disorders (79.5%) and inflammatory bowel disease (60%). Respondents with a significantly higher risk of medication-related problems included those who were younger, were female, and had psychiatric disorder(s), diabetes, arthritis, or lupus, and respondents with a significantly higher risk of medical-related problems included those with multiple chronic diseases, psychiatric disorder(s), and heart failure.

**Conclusion:** Understanding the consequences of the pandemic, such as medical- and medication-related problems, in this population is critical to improving health care accessibility and resources through potential outpatient pharmacy services during this and future pandemics.

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**Disclosure:** The authors declare no relevant conflicts of interest or financial relationships.

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## Background

With more than 30 million reported cases of coronavirus disease 2019 (COVID-19) in the United States from March 2020 to July 2021, the COVID-19 pandemic has affected the health care system and has been considered a public health crisis.<sup>1</sup> Primary health care and pharmacy services have drastically been disrupted,<sup>2</sup> posing a challenge in people with chronic diseases who receive routine care.<sup>3</sup> During the early phase of

the pandemic, the number of in-person clinic visits across the country decreased and telemedicine visits increased. Despite the increase in telemedicine visits, the overall number of visits (in-patient and telemedicine) declined.<sup>3</sup> The decline in the overall number of visits may put these patients' health at risk of worsening of their chronic disease, especially those with psychiatric disorders. One study showed that patients with an increased number of missed appointments were at a greater risk of all-cause mortality, especially in patients with long-term mental health conditions. In patients with long-term mental health conditions, those who missed 2 or more appointments per year had at least an 8-fold increased risk of all-cause mortality compared with those who did not miss any appointments.<sup>4</sup> Furthermore, some experts worry that patients may face obstacles obtaining their chronic medications from pharmacies,<sup>3</sup> yet others have predicted that patients would be willing to and intend on going to their local community pharmacy during the pandemic despite having multiple comorbid conditions that would further increase their risk of COVID-19 infection.<sup>5</sup>

There have been several studies that showed the impact of the pandemic on mental health,<sup>6-10</sup> alcohol consumption and alcoholic liver disease,<sup>11</sup> liver transplantation listings,<sup>12</sup> substance use disorders,<sup>13-15</sup> and obesity.<sup>16,17</sup> However, there is still limited literature on the indirect impact of the pandemic on other common chronic diseases (i.e., diabetes, cardiovascular diseases, hypertension), particularly related to accessibility to medications and health care resources. Understanding the indirect consequences of the pandemic in people with chronic diseases will help us define the necessary measures needed to improve health care and outpatient pharmacy accessibility and resources for patients during this current pandemic and future pandemics that may arise.

## Objectives

This study aimed to assess the indirect impact of the COVID-19 pandemic on people with chronic diseases. The primary objective of this study was to assess the prevalence of medical- and medication-related problems reported by people with chronic diseases during the COVID-19 pandemic. The secondary objective was to identify the barriers and contributing factors related to these medical- and medication-related problems.

## Methods

### Participants

A sample of adults across Michigan, using the University of Michigan (UM) health research platform, was included. Adults who were enrolled in this platform were routed available surveys based on their health history and demographic characteristics. This survey was available to platform members who were at the age of 18 years or older and had at least one chronic disease listed in their profile. Chronic diseases included asthma, chronic obstructive pulmonary disease (COPD), arthritis, atrial fibrillation, cancer, cardiovascular disease (history of angina or heart attack), chronic kidney disease, diabetes, gastroesophageal reflux disease (GERD) or peptic ulcer disease, heart failure, hyperlipidemia, hypertension, inflammatory bowel disease

(IBD), psychiatric disorders, and stroke. Respondents who showed interest in the study were then sent this survey link through the platform. One reminder was sent to all respondents who showed interest in the study. The anonymous and voluntary, Web-based survey was filled out by respondents between September 1, 2020, and January 1, 2021. Respondents who showed interest in the study and completed the survey were included in the study. We aimed for a convenience sample of 1000 respondents in our study over a 3-month time frame because of the study timeline and funding constraints. The study was approved by the UM Health Sciences and Behavioral Sciences Institutional Review Board.

### Survey design

The survey questions were developed through the Qualtrics Survey Software version 2020 (Qualtrics, Provo, UT) by investigators, reviewed by content experts in public health and survey design, and modified based on feedback. This established face and content validity of the survey. The survey was then pilot tested in respondents with chronic diseases to identify unclear instructions or questions, ambiguous wording of questions and responses, or any other problems with the survey. The survey was further modified based on their feedback. The survey questionnaire included a brief background on COVID-19, reason for this study, and items assessing demographics, respondent characteristics, COVID-19-related questions, medication adherence and problems, and disease-specific management. Demographics and respondents' characteristics included age, gender, religion, ethnicity, marital status, children status, education level, current employment status, annual income, health insurance status, and established primary care physician (PCP) and specialist care. Medication adherence and problem assessment included self-reported nonadherence and reasons for nonadherence, problems obtaining medications and reasons for those reported problems, and self-adjustment of medications. The disease-specific questionnaire included type of chronic disease, self-reported symptoms related to the respondents' chronic disease (i.e., worsening symptoms, less symptoms, no change in symptoms), nonpharmacologic interventions (i.e., exercise), and objective measurements, which included validated asthma and COPD symptom assessments (Global Initiative for Asthma [GINA]<sup>18</sup> and COPD Assessment Test [CAT]<sup>19</sup>), body weights, and blood pressure and glucose measurements before and during the pandemic. Medication adherence and problem assessment and disease-specific questions were similar regardless of disease state, with the exception of objective measurements (i.e., diabetes and blood glucose measurements). The COVID-19-related questions focused on how the pandemic affected the respondents' career, finances, and other aspects of their life (i.e., childcare, health insurance). Examples of medical- and medication-related questions included in the survey are presented in [Appendix 1](#).

### Outcome measure

The primary outcome was self-reported medical- and medication-related problems associated with respondents' chronic diseases during the pandemic. Medication-related problems included problems obtaining and forgetting or not

taking their chronic medications. Medical-related problems included worsening symptoms of chronic disease(s). Secondary outcomes included potential risk factors for medical- and medication-related problems and problems associated with being overweight or obese. Potential risk factors included age, gender, insurance impact, employment status, chronic disease type, and not having a PCP.

### Statistical analysis

Descriptive statistics was used to describe respondents' demographics, chronic disease characteristics, medication adherence, medical- and medication-related problems, and COVID-19–related factors. Numeric data were summarized with means and standard deviations. The multivariable Firth logistic regression was used to analyze correlations between potential risk factors associated with medical- and medication-related problems. A *P* value of < 0.05 indicated statistical significance. All statistical analyses were performed using R Statistical Software, version 4.0.2 (R Foundation for Statistical Computing, Vienna, Austria).

### Results

The survey was started by 1267 individuals and 1103 completed the survey who were included in the analysis. Respondents' mean age was 54.2 ± 16.2 years, most were white (87.7%) and female (68.5%), 45% reported an annual income of < \$50,000, 44% were employed, and 67% had at least a bachelor's degree. Most common chronic diseases reported included hypertension (47.9%), psychiatric disorders (44.4%), hyperlipidemia (28.6%), arthritis or lupus (28.5%), asthma or COPD (27.6%), and diabetes (23.2%). A summary of the respondents' demographics and characteristics is presented in Table 1.

Approximately 51% of respondents reported at least 1 medication-related problem with 13.6% reported problems obtaining medications and 35.5% reported forgetting or not taking their medications during the pandemic. The top 5 reasons reported for problems obtaining medications included doctor's office being closed for in-person visit(s) (14.3%), doctor's office requiring an appointment before prescribing medication(s) (12.5%), drug shortage (13.1%), respondent's fear of COVID-19 exposure (12.5%), and canceled or rescheduled appointment(s) (9.3%). In addition, 16% of all responses indicated that respondents self-adjusted their medications. Unfortunately, 56.2% of all responses indicated worsening symptoms of respondents' chronic disease(s) during the pandemic, which is a concerning finding.

Respondents with a significantly higher risk of medication-related problems included those who were younger (aged < 65 years) (odds ratio 1.57 [CI 1.12–2.21], *P* < 0.009), female (1.70 [1.23–2.35], *P* = 0.001), having psychiatric disorder(s) (2.40 [CI 1.78–3.26], *P* < 0.001), having diabetes (1.60 [1.15–2.24], *P* = 0.005), and having arthritis or lupus (1.55 [1.12–2.15], *P* = 0.008). Respondents with a significantly higher risk of medical-related problems included those who were younger (aged < 65 years) (1.66 [1.03–2.70], *P* = 0.039), female (1.92 [1.20–3.13], *P* = 0.007), and having multiple chronic diseases (37.51 [5.27–4757.67], *P* < 0.001), asthma or COPD (2.41 [1.63–3.58], *P* < 0.001), arthritis or lupus (3.25 [2.17–4.89], *P* <

**Table 1**  
Respondents' demographics and characteristics

Characterizes	Values
<b>Respondent characteristics</b>	
Age, mean ± SD (n = 1071)	54.2 ± 16.2
<b>Gender (n = 1072)</b>	
Male	320 (29.9)
Female	734 (68.5)
Nonbinary	18 (1.7)
<b>Race (n = 1074)</b>	
White	942 (87.7)
African American	39 (3.6)
Other	93 (8.7)
<b>Marital status (n = 1072)</b>	
Married	583 (54.4)
Widowed	33 (3.1)
Divorced	136 (12.7)
Separated	14 (1.3)
Single	181 (16.9)
In a relationship	125 (11.7)
<b>Highest level of education (n = 1071)</b>	
No high school diploma or GED	5 (0.5)
High school diploma or GED	49 (4.6)
Trade school	26 (2.4)
Some college, but no degree	181 (16.9)
Associate degree	96 (9.0)
Bachelor's degree	345 (32.2)
Master's degree	237 (22.1)
Doctoral or professional degree	132 (12.3)
<b>Annual income (n = 1031)</b>	
< 20,000	203 (19.7)
20,000–49,000	263 (25.5)
50,000–74,000	153 (14.8)
75,000–99,000	142 (13.8)
100,000–149,000	163 (15.8)
≥ 150,000	107 (10.4)
<b>Current employment status (n = 1071)</b>	
Employed	469 (43.8)
Unemployed	97 (9.1)
Retired	321 (30.0)
Other	184 (17.2)
<b>Chronic diseases (n = 1103)</b>	
Asthma or chronic obstructive pulmonary disease	305 (27.6)
Arthritis or lupus	314 (28.5)
Atrial fibrillation	70 (6.3)
Cancer	43 (3.9)
Cardiovascular disease	85 (7.7)
Chronic kidney disease	48 (4.3)
Diabetes	256 (23.2)
Gastroesophageal reflux disease or peptic ulcer disease	217 (19.7)
Heart failure	30 (2.7)
Hyperlipidemia	316 (28.6)
Hypertension	528 (47.9)
Inflammatory bowel disease	46 (4.2)
Psychiatric disorders	490 (44.4)
Stroke	31 (2.8)
Other	233 (21.1)

Abbreviation used: GED, General Educational Development.

Note: Values are numbers (%) of respondents unless otherwise indicated.

0.001), diabetes (2.92 [1.87–4.60], *P* < 0.001), GERD or peptic ulcer disease (3.40 [2.23–5.23], *P* < 0.001), heart failure (4.89 [1.43–18.11], *P* = 0.011), hypertension (2.44 [1.59–3.77], *P* < 0.001), IBD (3.80 [1.65–9.00], *P* = 0.002), psychiatric disorder(s) (5.12, [3.41–7.81], *P* < 0.001), and stroke (3.13 [1.09–9.24], *P* = 0.034).

**Table 2**  
Characteristics of medical- and medication-related problems based on chronic disease state

Disease state	Patients who encountered problems obtaining medications	Patients who forgot or chose not to take medications during the pandemic	Patients with worsening of symptoms during the pandemic
Asthma or COPD	55/305 (18.0)	82/284 (28.9)	105/303 (34.7)
Arthritis or Lupus	23/165 (13.9)	46/136 (33.8)	129/306 (42.2)
Diabetes	31/256 (12.1)	95/253 (37.5)	77/204 (37.7)
GERD	23/216 (10.6)		91/215 (42.3)
Heart failure	6/30 (20.0)		9/30 (30.0)
Hyperlipidemia	17/312 (5.4)	79/268 (29.5)	
Hypertension	40/520 (7.7)	159/507 (31.4)	94/358 (26.3)
IBD	4/30 (13.3)	14/36 (38.9)	26/41 (63.4)
Psychiatric disorders	93/481 (19.3)	194/421 (46.1)	381/479 (79.5)

Abbreviations used: COPD, chronic obstructive pulmonary disease; GERD, gastroesophageal reflux disease; IBD, inflammatory bowel disease.  
Note: Values are numbers (%) of respondents unless otherwise indicated.

As for disease-specific medical- and medication-related problems, 42.2% of respondents with arthritis or lupus experienced worsening symptoms; 39% of respondents with IBD reported forgetting or not taking their medications, and 63.4% reported increased IBD flare-ups. Almost 80% of respondents with psychiatric disorders experienced worsening symptoms, and 43% had trouble seeing a therapist or psychiatrist, which further worsened their symptoms. One-third of respondents with asthma or COPD reported worsening symptoms, and the GINA and CAT assessments confirmed these self-reports. Approximately 26% of respondents with hypertension and 38% with diabetes reported worsening symptoms; however, there were not statistically significant differences in the average self-reported blood pressure (systolic blood pressure  $133.1 \pm 12.9$  vs.  $132.7 \pm 14.0$  [ $P = 0.54$ ], diastolic blood pressure  $80.6 \pm 9.5$  vs.  $80.4 \pm 10.0$  [ $P = 0.63$ ], respectively) and glucose ( $162.0 \pm 62.2$  vs.  $169.2 \pm 57.1$  [ $P = 0.112$ ], respectively) measurements before and during the pandemic. As for the impact of the pandemic on people with obesity or being overweight, approximately 60% of respondents with obesity or being overweight reported weight gain ( $19.9 \pm 37.3$  pounds) with the biggest contributor being inaccessibility to gyms (29.4%). Disease-specific medical- and medication-related problems are summarized in Table 2.

## Discussion

More than half of respondents with chronic diseases reported at least 1 medication-related problem and more than half of all responses indicated worsening of respondents' disease symptoms during the pandemic. Self-reported worsening symptoms of chronic disease were highest in respondents with psychiatric disorder(s) and IBD, and risk factors associated with worsening symptoms of chronic disease were highest in respondents with multiple chronic diseases, psychiatric disorder(s), and heart failure. This may be caused by several factors reported in our study and others, which include inability to obtain medications, reduction in chronic disease management services and clinic care, statewide shutdowns, and fear of COVID-19 exposure.<sup>6,20</sup>

Respondents with psychiatric disorders seemed to be most affected by the pandemic in regard to worsening symptoms. In addition, our study showed that more than 40% of respondents with psychiatric disorder(s) had trouble seeing a therapist or psychiatrist during the pandemic, further worsening their

symptoms. A recent study showed that there was more than a 3-fold increase in the prevalence of depression symptoms during the COVID-19 pandemic compared to the prepandemic.<sup>6</sup> Another study showed that people without baseline depression, anxiety, or obsessive-compulsive disorders reported a greater increase in symptoms of these psychiatric disorders during the COVID-19 pandemic.<sup>7</sup> In addition, a recent meta-analysis showed that there was a 3-fold increase in anxiety during the COVID-19 pandemic and the prevalence of anxiety was highest during the beginning and peak of the pandemic.<sup>21</sup> Our study also supports and adds to these findings by describing the number of people with worsening psychiatric disorder(s) (79.5% of respondents), identifying barriers associated with getting medications (31.8% reported issue because of doctor's office being closed for in-person visits, followed by canceled or rescheduled doctor's appointment [15.8%] and fear of being exposed to COVID-19 [15.5%]), and issues with access to therapy (43%).

The COVID-19 pandemic has affected other chronic diseases as seen in our study. The second largest group who experienced worsening of their chronic disease condition in our study was respondents with IBD. Worsening in IBD symptoms could be caused by the reduction in therapeutic drug monitoring, widespread cancellation of elective procedures (i.e., endoscopies), and outpatient activity (i.e., infusion centers, clinic appointments).<sup>22</sup> Our study also reported worsening asthma and COPD symptoms, which was supported by the GINA and CAT scores during the pandemic compared to the prepandemic. The impact on asthma and COPD may have been caused by limited access to several diagnosis procedures and reduction in usual medical care.<sup>23</sup> To the best of our knowledge, our study is the first study that reports the impact of COVID-19 on other chronic disease(s), such as asthma or COPD and IBD.

In addition to the impact of the pandemic on chronic diseases, our study showed that more than 60% of respondents who were obese or overweight reported weight gain during the pandemic with the biggest contributor to weight gain being inaccessibility to gyms. Our findings are consistent with recent reports that showed that 42% of adults reported undesired weight gain during the pandemic with an average of 29 pounds gained.<sup>16</sup> This is particularly concerning in the era of COVID-19 because being obese or overweight has been identified as a major risk factor for hospitalization or COVID-related death in patients who contract the COVID-19 virus.<sup>24,25</sup> With statewide restrictions becoming less strict in

more recent months and more gyms opening, it is predicted to see a decrease in worsening obesity.

The COVID-19 pandemic has also resulted in medication-related problems in this population. Our study is the first study that reported on the prevalence of medication-related problems in people with chronic disease(s) during the pandemic, which showed that 51.4% of respondents reported at least 1 medication-related problem, mostly because of nonadherence to their medications. Our study also showed that the risk of medication-related problems was higher in younger people, women, and people with psychiatric disorders, diabetes, or arthritis or lupus. Our study findings are concerning because we know that medication nonadherence and medication-related problems in people with chronic disease(s) can result in an increased risk of worsening chronic diseases (i.e., inadequate glycemic control, COPD exacerbation), use of health care resources, medical costs, and rates of mortality and morbidity.<sup>26-29</sup>

The occurrence of medication-related problems and worsening of these chronic disease(s) may be a result of health care services, such as primary care services, being suspended and patients avoiding routine or urgent medical care during the pandemic. The Centers for Disease Control and Prevention reported that 41% of adults have avoided medical care during the pandemic because of concerns related to COVID-19.<sup>30</sup> In addition, 12% avoided urgent or emergency care and 31% avoided routine medical care. Unfortunately, avoidances of medical care can lead to worsening of chronic disease(s), further leading to worsening clinical outcomes (i.e., hospitalizations, morbidity, and mortality). Therefore, it is crucial to address these medication-related problems and access to medical care, and clinical pharmacists are ideal to identify and resolve medication-related problems as provider extenders to primary care and other specialty care in people with chronic diseases.<sup>31-33</sup>

This study had several limitations, which included all symptoms or measurements reported being self-reported and respondents' need to recall and compare their chronic disease symptoms or measurements before and after the pandemic. We acknowledge that this may result in recall bias. In addition, we limited our study population to those with chronic diseases in the state of Michigan, and the data were not collected from a random sample. We tried to address these limitations by increasing the timeline of the survey and including a large sample size in the study. However, we acknowledge that the medical- and medication-related problems identified in this study may not be fully generalized to the general population in the United States.

Despite these limitations, our study conveys that medical- and medication-related problems have arisen because of the pandemic. Based on our findings, interventions could be developed to target high-risk patient populations identified, such as people with obesity, psychiatric disorder(s), and diabetes. Clinical pharmacist involvement in these patients may address potential medication-related problems associated with these chronic disease(s) and address potential barriers (i.e., access to care, fear of COVID-19) that could result in medication-related problems. The use of telehealth to provide clinic services, including pharmacy services, during the pandemic could be a potential method to address medication-related problems and access to care. These are a few suggested interventions that may help improve health care and outpa-

tient pharmacy accessibility and provide resources for people with chronic diseases during this and future pandemics.

## Conclusion

Medical- and medication-related problems have arisen because of the restrictions put in place to reduce the spread of COVID-19, along with the fear of exposure to COVID-19. Understanding the consequences of the COVID-19 pandemic in people with chronic diseases is crucial to improving health care and outpatient pharmacy accessibility and resources for this population during this and future pandemics. Further research is needed to understand the long-term implications of the COVID-19 pandemic on chronic disease management and to evaluate the effectiveness of interventions during the pandemic to address medication-related problems in people with chronic disease(s).

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## Appendix

## Appendix 1

## Medical- and medication-related survey questions

## Medical-related questions

- Which of the following best describes your experience with [chronic disease] DURING the coronavirus/COVID-19 pandemic (compared with before coronavirus/COVID-19)?
  - I have been experiencing more symptoms
  - I have been experiencing less symptoms
  - My symptoms have not changed
- Diabetes specific questions
  - BEFORE/DURING the coronavirus/COVID-19 pandemic (before March 2020), what was your HIGHEST/LOWEST (estimated) blood sugar reading?
    - Blood sugar reading (mg/dL):
      - I do not check my blood sugar levels
      - I do not know my blood sugar levels
  - Why do you not check your blood sugar levels? (select all that apply)
    - I do not have a glucometer or strips/solution to check my blood sugar
    - My doctor told me that I do not have to check my blood sugar
    - I forget to check my blood sugar
    - I do not think it is necessary for me to check my blood sugar
    - Other (please specify)
- Hypertension specific questions
  - BEFORE/DURING the coronavirus/COVID-19 pandemic (before March 2020), what was your HIGHEST/LOWEST (estimated) systolic and diastolic blood pressure reading?
    - Systolic and diastolic blood pressure reading (mg/dL):
      - I do not check my blood pressure
      - I do not know my blood pressure
  - Why do you not check your blood pressure? (select all that apply)
    - I do not have a blood pressure machine to check my blood pressure
    - My doctor told me that I do not have to check my blood pressure
    - I forget to check my blood pressure
    - I do not think it is necessary for me to check my blood pressure
    - Other (please specify)

## Medication-related questions

- What type(s) of treatments are you currently receiving for your [chronic disease]? (select all that apply)
  - Oral medication (examples: pill, capsule, liquid)
  - At-home injections
  - IV infusions at a facility
  - I am not taking any medications for my chronic disease
  - Other (please specify)
- Have you had any problems getting your [chronic disease] medications (refills and/or new prescriptions) DURING the coronavirus/COVID-19 pandemic (since March 2020)?
  - Yes
  - No
  - I do not use [specific] medication
- What problems did you have getting your [chronic disease] medications? (select all that apply)
  - The doctor's office required an appointment prior to sending the prescription to the pharmacy
  - The doctor's office was closed for in-person visits
  - The doctor's office canceled/rescheduled the appointment
  - The doctor's office was unable to send the prescriptions to the pharmacy
  - The doctor's office visit was not affordable (no or poor insurance coverage, etc)
  - I was not comfortable using telehealth (phone/video call) for my appointment
  - Lack of transportation to doctor's office and/or pharmacy
  - Fear of being exposed to coronavirus/COVID-19
  - Medications were not affordable (no or poor insurance coverage, etc)

## Appendix 1 (continued)

- The pharmacy did not have my medication in stock due to a drug shortage
- Pharmacy hours changed
- I am a front-line worker and could not go to the doctor's office due to risk of coronavirus/COVID-19
- Other (please specify)
- Have you ever forgotten to take and/or chosen not to take your [chronic disease] medication(s) as prescribed DURING the coronavirus/COVID-19 pandemic (since March 2020)?
  - Yes
  - No
- Have you ever adjusted your [chronic disease] medication dose yourself (without doctor recommendation) DURING the coronavirus/COVID-19 pandemic (since March 2020)?
  - Yes
  - No