

PRACTICE OF SELF-MEDICATION AND QUALITY OF LIFE ASSESSMENT AMONG HEALTHCARE WORKERS OF A TERTIARY HOSPITAL IN ASSAM DURING COVID-19 PANDEMIC

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ABSTRACT

Objectives: The aims of this study were to collect sociodemographic, clinical data regarding practice of self-medication and to assess quality of life in healthcare workers involved taking care of COVID-19 patients.

Methods: The study population consisted of 104 healthcare workers from Gauhati Medical College and Hospital directly involved in management and control of COVID-19 Pandemic. It was a cross-sectional observational study using non-probability sampling. Data were collected in a questionnaire developed by the investigators which included age, sex, and occupation, COVID-19 such as symptoms, medicines used, contraction and confirmation of COVID-19 positive, and self-medication when COVID positive, symptomatic relief, and adverse effects and usefulness of self-medication. The data for mental health were obtained in a questionnaire based on the Professional Quality of Life Scale (Compassion Satisfaction and Compassion Fatigue Version 5) with responses rated on a five-point Likert scale.

Results: The study consisted of 104 participants. Males were n=42 (40%) and females were n=62 (60%). Doctors n=20 (19%), Laboratory Technicians n=22 (21%), Nurses n=44 (42%), Pharmacists n=13 (13%), Ward boys n=3 (3%), and Ward girls n=2 (2%) took part. Eighty-four (97.7%) respondents took paracetamol, 39 (45.3%) took cough syrup, 30 (34.9%) used nasal decongestants, 25 (29.1%) utilized throat gargle, 24 (27.9%) used azithromycin, 22 (25.6%) used cefixime, 13 (15.1%) took amoxycylav, 27 (31.4%) took ORS, 3 (3.5%) took Doxycycline, 4 (4.8%) used Ivermectin, 1 (1.2%) took Dexamethasone, and 1 (1.2%) used Multivitamin. About 68% (n=51) of COVID Positive respondents self-medicated with Azithromycin, 24% (n=18) with Ivermectin, 41.3% (n=31) with Doxycycline, 20% (n=15) with Dexamethasone, and 4% (n=3) with Levocetirizine and Paracetamol. The Mental Health Assessment Scores were obtained as the sum total of scores of answers to the 30 questions provided per respondent. About 7% (n=7) respondents with total score between 60 and 69, 12% (n=13) from 70 to 79, 29% (n=30) from 80 to 89, 22% (n=23) from 90 to 99, 16% (n=17) from 100 to 109, 13% (n=13) from 110 to 119, and 1% (n=1) between 120 and 129. This indicates that some participants had mild burnout, most had moderate burnout, and a few had severe burnout.

Conclusion: Self-medication practices common among healthcare workers, increased during the COVID-19 Pandemic which must be appropriately managed to stay away from the ill effects. Providing adequate mental health resources and education to the affected health workers will motivate them increasing their productivity during the pandemic.

Keywords: COVID-19, Self-Medication, Quality of life, Mental health assessment, Burnout.

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INTRODUCTION

There has been a challenge to the global health by the advent of Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), previously known as 2019-nCoV. It was first identified in Wuhan, China in December, 2019. This variety of coronavirus is highly communicable. It has spread rapidly all over the world. The World Health Organization declared the disease outbreak as a "Public Health Emergency of International Concern" on January 30, 2020. The COVID-19 Outbreak was declared a global pandemic on March 11, 2020.

Self-medication has been observed to be high during the COVID-19 Pandemic [1]. The World Health Organization defines self-medication as the selection and utilization of medicines to treat self-recognized symptoms or ailments without consulting a physician [2]. It also includes the usage or re-usage of previously prescribed or unused drugs, direct purchasing of prescription drugs without consultation, and irrational use of over-the-counter drugs [3]. It is affecting both developed and developing countries, and hence, it is a matter of concern [3,4].

There has been a great increase in the amount of information regarding medications which has caused confusion and panic among the people. Many remedies have been tried without established efficacy and safety [5,6]. Google trends on self-medication reflected increase in people's interest [7].

Several medicines have been tried as the treatment of COVID-19 [8]. Most medicines resulted in little or no benefit for the patients [9,10] and even harm in some [11]. Hydroxychloroquine achieved a lot of attention as a treatment because *in vitro* or small controlled studies found favorable results [12]. In later trials like the RECOVERY trial [13] and the Solidarity trial [10], no benefit was found compared to usual care. A similar scenario occurred with Azithromycin [14-17]. UK Researchers declared Dexamethasone as a "life-saving drug" and the UK Minister of National Health Service forbade its use in self-medicating oneself or family members [18]. The WHO has also told to be careful when using Ivermectin, other antibiotics, herbal remedies, and over-the-counter drugs [19].

People undertake self-medication as part of self-care for disease prevention and to restore health after injury or disease [20]. However, self-medication may be associated with polypharmacy, incorrect diagnosis, adverse effects, drug interactions, antibiotic resistance, and increased drug expenses [3].

COVID-19 has brought new challenges in the world. Although an infectious disease with physical health implications, it also has a profound affect on mental health and wellbeing [21,22]. People are faced with fear and distress about their personal safety. The adverse socioeconomic consequences such as unemployment and lack of access

to necessary commodities due to quarantine and lockdown has a long lasting affect on the mental health of people [23,24].

In earlier studies, it was found that after major economic crises or natural disasters, people had increase in depression, suicidal tendencies, and post-traumatic stress disorder [25-27]. This also holds true for Covid-19 Pandemic. The health-care system has been strained by the psychological effects of persistence stress among the general population and increase in mental health disorders among vulnerable individuals. It may be difficult for normal people to resume their pre-pandemic life. Government imposed lockdowns and stay home orders have also affected the mental health of individuals [23,24]. They are suffering from depression, anxiety disorders, mood disorders, post-traumatic stress symptoms, sleep disorders, panic, stigmatization, anger, low self-esteem, and lack of self-control [28,29].

COVID-19 also has an impact on the healthcare workers, especially the frontline providers. The frontline workers are at risk of both physical as well as psychological distress [30,31]. The healthcare workers are working for extended hours beyond their regular schedule to meet the increased demand for critical care. As a result, they can suffer from anxiety, depression, burnout, and insomnia [31,32]. Preliminary data from China reports depression in 50.3%, anxiety in 44.6% and insomnia in 34% healthcare workers [33,34]. The health-care systems require physicians to keep record of their physician patient encounters along with many clerical responsibilities [35]. They have to handle life and death situations while putting their own life at risk [36]. As a result, they face frequent challenges [35].

The important components to maintain physical well-being are adequate rest, nutrition, and hydration [36,37]. One of the study depicted that limiting shifts to less than 16 h led to an 18% reduction in attentional failures [38]. This is why the mental health resources and education should be provided to the healthcare workers and the action needs to begin at the earliest [39].

The study aims to find the practice of self-medication and mental health status among healthcare workers in Gauhati Medical College and Hospital as both of them are burning problems during the Covid-19 Pandemic.

The studies conducted by Figueiras *et al.*, 2000; Onchonga *et al.*, 2020; and Barros *et al.*, 2009 in Spain, Kenya, and Brazil, respectively, showed that females are more likely to self-medicate than their male counterparts.

The studies conducted by Onchonga *et al.*, 2020; Barros *et al.*, 2009; and Faqihi *et al.*, 2020 in Kenya, Brazil, and Saudi Arabia, respectively, showed that self-medication was more common among the nursing staff.

Studies conducted by Onchonga *et al.*, 2020 in Kenya and Gutema *et al.*, 2011 in Ethiopia also showed increased frequency of self-medication among doctors followed by pharmacists.

The study of Faqihi *et al.*, 2020; Onchonga *et al.*, 2020; Gutema *et al.*, 2011; Nasir *et al.*, 2020; and Shankar *et al.*, 2002 conducted in Saudi Arabia, Kenya, Ethiopia, Dhaka, and Nepal, respectively, showed that the most common symptom encouraging self-medication was fever followed by cough, sore throat, and muscle pain.

Studies conducted by Saeed *et al.*, 2015; AlBasheer *et al.*, 2016; and Alshahrani *et al.*, 2019 among the University students of Saudi Arabia showed that most people self-medicate to get relief from their symptoms. This was highly prevalent among nursing students as found in the studies of Williams and Crawford, 2016 in Australia and Gama and Secoli, 2017 in Brazil. Studies by Malak and Abukamel, 2019 in Jordan and Gras *et al.*, 2020 in France also showed that most people self-medicate to get relief from their symptoms.

Antipyretics, antibiotics, and cough syrup are the important medicines used to self-medicate as found in the study of Bennadi, 2014. In studies of Faqihi *et al.*, 2020; Gutema *et al.*, 2011; and Auta *et al.*, 2012 conducted in Saudi Arabia, Ethiopia, and Nigeria, respectively, it was found that paracetamol was the most commonly used drug for self-medication followed by antibiotics and cough syrup.

Antibiotic use for self-medication is common in developing countries as found by Calva *et al.*, 1996 in a study in Mexico.

Paracetamol use exceeded that of antibiotics in studies of Quispe-Cañari *et al.*, 2021 and Miñan-Tapia *et al.*, 2020 conducted in Peru.

Self-medication can lead to adverse effects due to incorrect choice of therapy, failure to recognize special pharmacological risks, inadequate or excessive dosage, excessively prolonged use, risk of dependence and abuse, and food and drug interactions which were found in the study of Bennadi, 2014.

Studies of Onchonga *et al.*, 2020 in Kenya and Miñan-Tapia *et al.*, 2020 in Peru showed that less number of participants taking self-medication had adverse effects.

Vomiting, diarrhea, and gastritis were more frequent adverse effects compared to rash or other forms of drug allergy which was found in the studies of Berreni *et al.*, 2015 and Gras *et al.*, 2021.

Respondents had positive attitudes toward self-medication in studies conducted by Onchonga *et al.*, 2020 in Kenya; Al Khaja *et al.*, 2006 in Bahrain; Kayalvizhi S and Senapathi R, 2010 in South India; and Abay S and Amelo W, 2010 in Ethiopia.

In studies conducted by Lai *et al.*, 2020 in China; Rossi *et al.*, 2020 in Italy; Chua *et al.*, 2004 in Hong Kong; West CP, Dyrbye LN, Shanafelt TD, 2018; and Gold JA, 2020, it was found that healthcare workers suffer from burnout after a pandemic. Some healthcare workers had mild burnout, most had moderate burnout, and a few had severe burnout.

Aims and Objectives

The aims of this study were to collect the sociodemographic and clinical data to check significant factors to study the practice of self-medication in the group of healthcare workers involved in the care of COVID-19 patients and to assess the quality of life of Indian healthcare workers during the COVID pandemic.

METHODS

Study design

The study population consisted of 104 healthcare workers from Gauhati Medical College and Hospital who were directly involved in the management and control of COVID-19 Pandemic. It was a cross-sectional observational study. Non-probability sampling method was used for the study.

Study criteria's

Inclusion Criteria: Healthcare workers working at Gauhati medical college and Hospital during the COVID pandemic who were involved in the management of COVID-19 infected patients were included in the study.

Exclusion criteria

The exclusion criteria were excluded from the study:

1. Healthcare workers not directly involved the management of COVID-19 infected patients.
2. Healthcare workers temporarily posted at COVID hospital at Gauhati medical college and hospital, Guwahati.

Following data were collected in a questionnaire form with consultation with healthcare workers

1. Age
2. Gender
3. Dept. or specialty
4. Average time of work
5. Severity of exposure
6. Marital status
7. Questionnaire using the Professional Quality of Life Scale-V (ProQOL-V)
8. Signs and symptoms
9. Data related to self-medication.

Data Collection

The data were collected in a questionnaire developed by the investigators. The physical questionnaire was given to different healthcare workers which were returned after properly answering all the questions. The questionnaire consists of questions which included the age, sex, occupation, COVID-19 like symptoms if any, medicines taken on their own to get relief from the symptoms, if they really contracted COVID-19, how they were confirmed of being COVID Positive, medicines taken on their own after being COVID Positive, symptomatic relief after taking medicines on their own if any, adverse effects after taking the medicines and if self-medication is really useful.

The data for mental health were obtained in a questionnaire based on the Professional Quality of Life Scale (Compassion Satisfaction and Compassion Fatigue Version 5). The responses were rated on a five-point Likert scale, with higher scores on each subscale indicating higher secondary trauma, compassion satisfaction, and burnout.

Data analysis and presentation

Data collected were analyzed using Microsoft Excel 2016 and Statistical Package Program for the Social Science software. Data were analyzed and summarized using descriptive and inferential statistics, and later presented in tables, bar diagrams, pie diagrams, and percentages.

Ethical approval

The approval to conduct this research was obtained from the Institutional Ethical Committee of Gauhati Medical College and Hospital, Guwahati. The respondents were well versed with the intentions of the study. They had to give written consent before admission to the study.

FUNDING

The study was Self-Funded. The study did not receive any form of grant from funding agencies in the public, commercial, or not-for-profit sectors.

CONFLICTS OF INTEREST

Dr. Lakhimi Borah, Dr. Siddhartha Krishna Deka and Dr. Ripunjoy Sarmah have no relevant conflicts of interest.

AUTHOR CONTRIBUTIONS

Dr. Lakhimi Borah conceived the idea. Dr. Siddhartha Krishna Deka and Dr. Ripunjoy Sarmah collected the data and wrote the manuscript. All authors approved the final version of the manuscript.

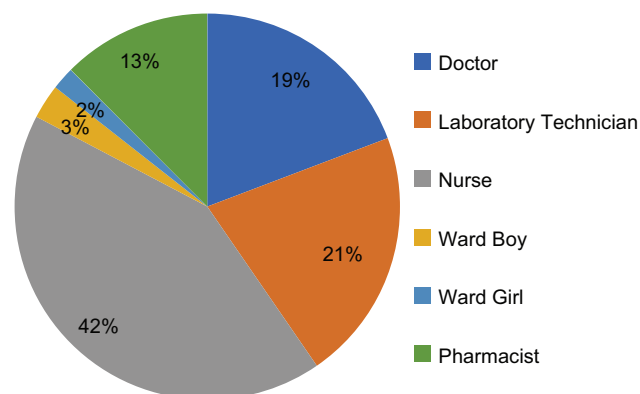
RESULTS

The study consisted of 104 participants.

The number of males were n=42 (40%) and the number of females were n=62 (60%).

Among the participants who took the study, the number of doctors n=20 (19%), number of Laboratory Technicians n=22 (21%), number

of nurses n=44 (42%), number of pharmacists n=13 (13%), number of ward boys n=3 (3%), and number of ward girls n=2 (2%).

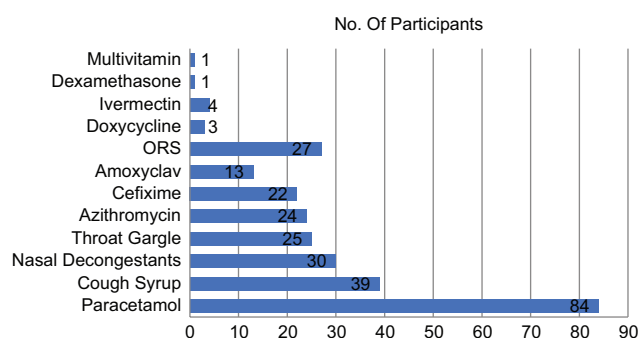


About 81.7% (n=85) of the respondents suffered, while 18.3% (n=19) of the respondents did not suffer from symptoms of COVID-19.

About 94.3% (n=83) of the respondents suffered from fever, 39.8% (n=35) suffered from cough, 35.2% (n=31) had sore throat, 35.2% (n=31) had nasal congestion, 35.2% (n=31) had headache, 34.1% (n=30) had muscle pain, 1.1% (n=1) had respiratory distress, and none of them suffered from tachycardia or tachypnea.

About 81.7% (n=85) of the respondents took medicines to get relief from symptoms, while 18.3% (n=19) did not take any medicines.

About 84 (97.7%) respondents took paracetamol, 39 (45.3%) respondents took cough syrup, 30 (34.9%) respondents used nasal decongestants, 25 (29.1%) respondents utilized throat gargle, 24 (27.9%) respondents used azithromycin, 22 (25.6%) respondents used cefixime, 13 (15.1%) respondents took amoxycyclav, 27 (31.4%) respondents took ORS, 3 (3.5%) respondents took doxycycline, 4 (4.8%) respondents used ivermectin, 1 (1.2%) respondent took dexamethasone, and 1 (1.2%) used multivitamin.



Among those who had symptoms, 78.6% (n=67) were diagnosed as COVID Positive, while 21.4% (n=18) were diagnosed as COVID Negative.

COVID Positive status was confirmed by laboratory investigations in 3.3% (n=3), radiography in 16.7% (n=15), rapid antigen test in 51.1% (n=46), and RT-PCR in 70% (n=63) Positive healthcare workers.

About 78.9% (n=53) among those COVID Positive self-medicated, while 21.1% (n=14) did not.

About 68% (n=51) of COVID Positive healthcare workers self-medicated with Azithromycin, 24% (n=18) with Ivermectin, 41.3% (n=31) with Doxycycline, 20% (n=15) with Dexamethasone, and 4% (n=3) with Levocetirizine and Paracetamol.

About 91.1% (n=48) among those taking medicines on their own got relief from the symptoms, while 8.9% (n=5) did not get any relief.

About 48.3% (n=26) experienced adverse effects after taking the medicines, while 51.7% (n=27) did not have any unwanted effects.

About 53.3% (n=24) among the COVID Positive self-medicated had nausea, 42.2% (n=19) had vomiting, 8.9% (n=4) had rashes, 4.4% (n=2) developed drug allergy, 2.2% (n=1) had severe gastritis, and 62.2% (n=28) had diarrhea.

Among the total 104 participants, 51% (n=53) think that self-medication is useful, while 49% (n=51) regard self-medication to be of great harm.

The Mental Health Assessment Scores were obtained as the sum total of scores of answers to the 30 questions provided per respondent. The category of scores consisted from 60 to 69, 70 to 79, 80 to 89, 90 to 99, 100 to 109, 110 to 119, and 120 to 129. About 7% (n=7) respondents with total score between 60 and 69, 12% (n=13) from 70 to 79, 29% (n=30) from 80 to 89, 22% (n=23) from 90 to 99, 16% (n=17) from 100 to 109, 13% (n=13) from 110 to 119, and 1% (n=1) respondent with total score between 120 and 129. This indicates that some participants had mild burnout, most had moderate burnout, and a few had severe burnout.

DISCUSSION

In this study, it was found that more female participants are likely to self-medicate. Similar studies from different regions (Figueiras et al., 2000; Onchonga et al., 2020; and Barros et al., 2009) showed that females are more likely to self-medicate than their male counterparts [40-42].

Self-medication was more common among the nursing staff which was also seen in similar studies [41-43]. This was followed by increased

frequency of self-medication among doctors followed by pharmacists as seen in different studies [41,44].

The most common symptom encouraging self-medication was fever followed by cough, sore throat, and muscle pain also seen in the study of Faqihi et al., 2020 [43]. Similar studies also established these findings [41,44-46].

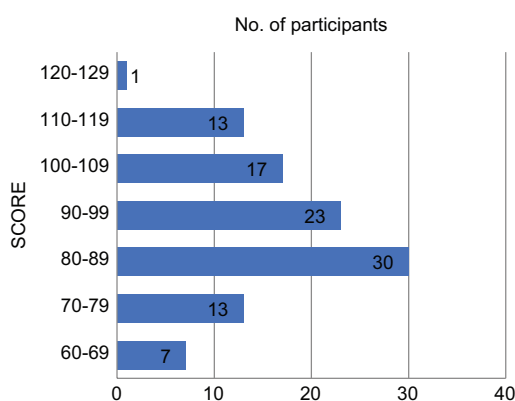
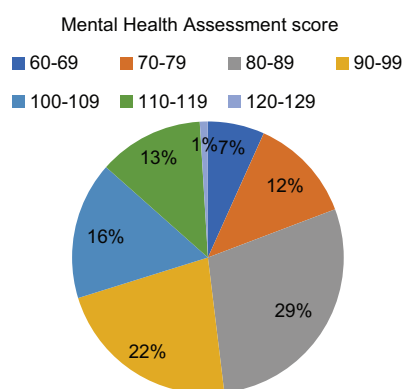
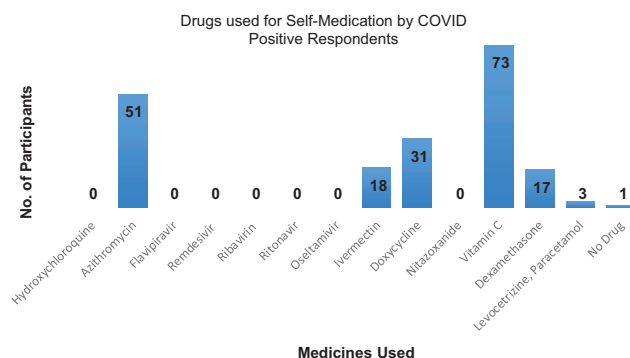
Most respondents were found to self-medicate to get relief from the symptoms. This was seen in several other studies [47-63].

Antipyretics, antibiotics, and cough syrup are the important medicines used to self-medicate [49]. Paracetamol was the most commonly used drug for self-medication followed by antibiotics and cough syrup [43,44,47]. Antibiotic use in self-medication is common in developing countries [48]. Paracetamol use exceeded that of antibiotics in similar studies [50,51].

Self-medication can lead to adverse effects due to incorrect choice of therapy, failure to recognize special pharmacological risks, inadequate or excessive dosage, excessively prolonged use, risk of dependence and abuse, and food and drug interactions [49]. Less number of respondents has adverse effects as seen in similar studies [41,51]. Vomiting, diarrhea, and gastritis were more frequent adverse effects compared to rash or other forms of drug allergy. These findings are similar to other studies [53,54].

A greater number of respondents found self-medication to be useful. This finding was similar to studies, where respondents had positive attitudes toward self-medication [41,54-56].

The study found that some participants had mild burnout, most had moderate burnout, and a few had severe burnout. This is in concordance with various other studies [33,34,64-67].



CONCLUSION

Self-medication practices are common among healthcare workers. This has been more commonly observed during the COVID-19 Pandemic. Healthcare workers have greater knowledge about different medicines; hence, they can easily use them. However, self-medication can lead to serious adverse effects, drug interactions, and microbial resistance. Excessive and prolonged use can also lead to drug dependence and abuse. Therefore, the practice of self-medication should be appropriately managed to stay away from the ill effects.

COVID-19 has affected the mental health and well-being of health workers. Everyone is working with great energy and dedication beyond the regular duty hours to provide the best care to each patient. As a result, they can become more vulnerable to depression, anxiety disorders, panic attacks, sleep disorders, and emotional disturbances. The healthcare workers should not be ostracized or shamed for such conditions. Instead, they should be provided appropriate psychological support. Physical health should also be maintained by proper nutrition, hydration and rest. Providing adequate mental health resources and education is the need of the hour. This will go a long way in uplifting the healthcare workers and increasing their productivity during the pandemic.

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