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Systematic Review

A systematic review of knowledge, attitude, practice and health impacts of self-medication among COVID-19 affected people in South Asia

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ABSTRACT

The objective of this study was to assess the knowledge, attitude and practice of self-medication and its health impact among South Asian people. This systematic review was conducted at the Department of Public Health, under the Faculty of Health Sciences of University of Sunderland, United Kingdom (UK) during December 2020 to December 2022.For this study, a comprehensive literature review was conducted on the knowledge, attitudes, and behaviors of self-medication among COVID-19-affected adults aged 18 and older in South Asian nations The design of this review was completed in accordance with the Preferred Reporting Items for Systematic Reviews (PRISMA). Critical Appraisal Skills Programme (CASP)-2019 were used to identify the methodological problems in each individual study report. In this systematic review ten qualifying studies were examined with a total of (n=5137) study subjects. Among the study subjects, 2211 (43.04%) COVID 19 afflicted People had enough knowledge of self- medication followed 2001 (38.95%) COVID19 affected people in South Asia had a favorable attitude toward self-medication, 2906 (56.56%) people had performed self-medication and 206 (4.01%) had adverse impacts on their health. Bangladesh and India had the greatest and lowest rates of self-medication, 88.3% and 17.9%, respectively. In addition, the greatest rate of self-medication was seen among medical students in Pakistan (83%). This study investigated that during the COVID-19 Pandemic, self-medication was very common, with over half of the study population engaging in it. Therefore, it is vital to enhance the public awareness about the adverse effects of self-medication without having proper knowledge.

Keywords: Systemic review, COVID-19 self-medication, Knowledge, Attitude, Practice

INTRODUCTION

Infectious diseases are one of the several worldwide issues that affects humans. The corona virus was shown to be the cause of several occurrences of pneumonia in China in 2019.[1] When this particular coronavirus (COVID-19) pandemic spread quickly over the world, millions of people's lives were in jeopardy.[2] In the South Asian Association for Regional Cooperation (SAARC) areas, which include Pakistan, Afghanistan, Bangladesh, India, Sri Lanka, Nepal, the Maldives, and Bhutan, the Coronavirus Disease 2019 (COVID-19) has significantly disrupted socioeconomic life. The first country in South Asia to declare a confirmed case was Nepal, which reported its first case on January 23, 2020. As of November 18th, 2021, 1.28+ million incidents had been reported, and there had been more than 28.6 thousand deaths overall in the SAARC countries.[3] Self-medication is defined by the World Health Organization (WHO) as "the choice and use of medications by people (or a member of the individual's family) to address self-recognized or self- diagnosed diseases or symptoms".[4] According to several studies, self-medication is a common habit across the world, with prevalence rates ranging from 32.5-81.5%.[5-6] The COVID-

19 Pandemic may have an influence on those seeking for effective antiviral medications, especially those who have already experienced or have recovered from COVID-19-like symptoms.[7] The problem has also been exacerbated by the rise in incorrect information on self-medication in social media, which sows fear and uncertainty and encourages self-medication, including the use of unproven home treatments that are unsafe or ineffective.[8] With the increased knowledge and impact of the internet, it is typical for individuals to use over the-counter drugs prior to contacting a healthcare practitioner. Self-medication of pharmaceuticals permitted by a country's legislation has its own advantages, including lowering the pressure on healthcare facilities, particularly in areas with little resources. It may assist to decrease work absences due to mild ailments and save money and time. However, the surge in self-medication is reason for worry due to the possible dangers of wrong self-diagnosis, inappropriate dose, incorrect selection of treatment, masking of severe illness, drug interactions, and the development of unpleasant responses.[9] Self-medication with antimicrobial medicines carries the danger of resistance development.[10] People with minor symptoms of the COVID-19 epidemic have resisted going to the doctor in favor of self-medicating.[11] Additionally, there are dangers associated with the COVID- 19 pandemic that might affect antibiotic stewardship efforts and result in antibiotic resistance. For instance, antibiotics are often given to COVID-19 patients who have a mild sickness without pneumonia or a moderate illness with pneumonia. The purchasing of over-the-counter antibiotics for home use is one of the variables that affect drug misuse. Additional elements that significantly contribute to antibiotic overuse include sharing drugs with others and supplying patients more medication than they need.[12-13] As the COVID-19 epidemic spread, a number of medications were put out as potential treatments, but most of them offered patients little to no relief. Some are even in charge of doing harm.[14-16] Initial findings from small investigations or in vitro studies presented a drug called hydroxychloroquine, which received a great deal of attention.[17] However, randomized controlled trial investigations among hospitalized patients (recovery study and solidarity trials) revealed no evidence to support the therapeutic effects of the drug, compared to standard treatment.[18] Azithromycin is also included on this list.[19-21] Despite these results, many individuals prefer self-medication because of a lack of access to healthcare, misinformation, and fear of contracting COVID-19.[20] Various studies that looked into the incidence of self-medication during the COVID-19 epidemic around the world produced varying findings. Additionally, a number of research highlighted the impact of self-medication across different South Asian nations. But no study had provided an overview of the total findings. The aim of this paper was to evaluate the knowledge, attitude, practice (KAP) and health impacts of self-medication among COVID-19 affected people in South Asia.

METHODS

This systematic review was conducted at the Department of Public Health, under the Faculty of Health Sciences of University of Sunderland, United Kingdom (UK) during December 2020 to December 2022. For this study, a comprehensive literature review was conducted on the knowledge, attitudes, and behaviors of self-medication among COVID-19-affected adults aged 18 and older in South Asian nations The design of this review was completed in accordance with the Preferred Reporting Items for Systematic Reviews (PRISMA). In this review six databases: PubMed, Science Direct, Medline, Scopus, Google Scholars and Research Gate were searched for the articles relevant to the topic. The following search terms: health impact, self-medication, COVID-19, and relevant synonyms, knowledge, attitude practice and relevant synonyms, were used to narrow down the database searches. These keywords were utilized to search the databases for relevant publications that may be used to perform a full systematic review. Using a mix of keywords and Boolean operators, AND, OR, and NOT, numerous searches were conducted on all of the datasets. The search string that generated the most relevant results were: Knowledge AND Attitude AND Practice AND Self-medication AND Covid-19. Search were coupled using the NOT operator to exclude irrelevant results. Further, the search results were refined using various other filters like: Open Access, Language: English, Time Period: 2020 to 2022, Article types: Review articles, and Research articles. Searches were conducted between December 2022 and January 2022, during which time different search criteria and search expressions were explored to improve the selected articles. Critical Appraisal Skills Programme (CASP)-2019 were used to identify the methodological problems in each individual study report. Each research was evaluated using ten criteria outlined in the CASP instrument. Ten criteria are outlined in the critical evaluation against which each research was evaluated. The CASP screening questions were streamlined in accordance with the needs of this study. The protocol of this study was approved by the Department of Public Health of University of Sunderland, United Kingdom (UK). The inclusion, exclusion criteria and the PRISMA screening reports were as follows.

Inclusion criteria

Observational studies reported to age of the study subjects >18 years, study subjects affected with COVID-19, study subjects included from South Asia, study subjects reported to their knowledge, attitude, practice of self-medication and its impacts on them.

Exclusion criteria

Research articles unrelated to knowledge, attitude, practice of self-medication and its impacts among COVID-19 affected patients. Research articles including co-morbid conditions like diabetes, pregnancy and hypertension.

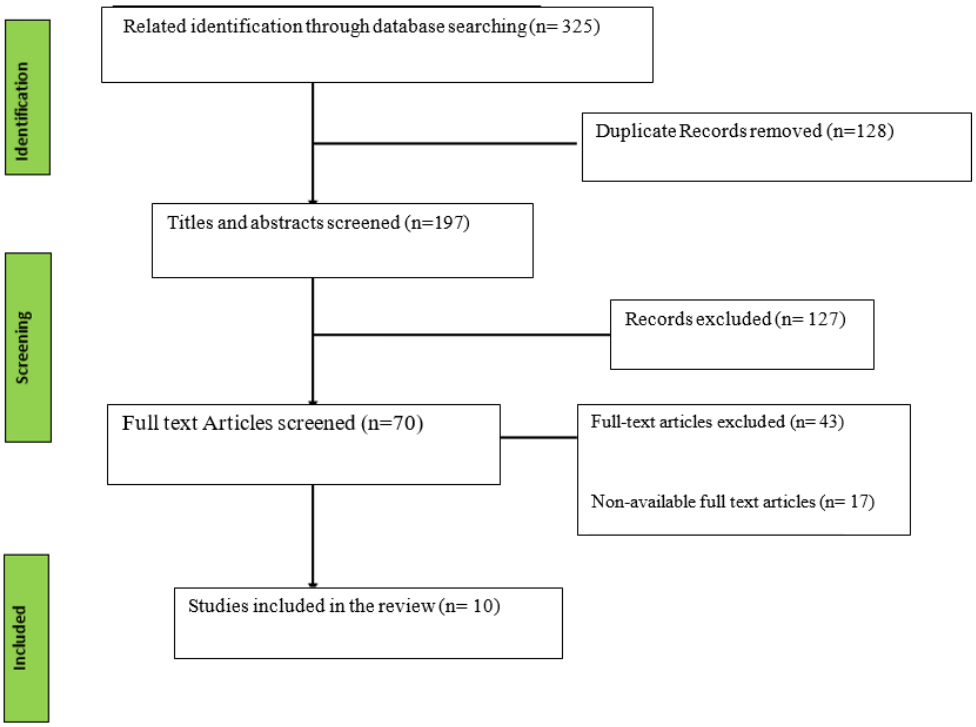

Figure 1: Preferred reporting item for systematic review (PRISMA)-2019.

Brief summary of literature critique of included studies by prisma (n=10)

The design of the cross-sectional research was intended to evaluate outcomes. Self-medication practice was one of the inclusion criteria used to identify participants. There is no explanation of proper processes and materials, and there is no uniformity. The study's strength is that the option for self-medication was clearly described. In addition, the attitude toward self-medication and its cause were described. The research is limited by the omission of effects or the possibility of experiencing adverse effects owing to self-medication. The study's findings are trustworthy. Change in percentage was recorded with the p value. Estimates derived from multilevel logistic regression models for demographic and self-medication variables were given as percentages. No data were missing or incomplete. The research revealed the incidence of self-medication and its relationship to socio-demographic parameters. Self-medication has also proven to be the result of health-seeking behavior. The use of the medications is discussed. The research advised that all students, regardless of their area of study, be informed about the advantages and disadvantages of self-medication and health-seeking behavior.[2]

The cross-sectional research was well-designed and intended to evaluate the results. Based on inclusion criteria like self-medication, participants were chosen. There was no uniformity, and proper procedures and supplies were not taught. The study's advantage is that the self-medication option was well presented. The study's ability to explain drug dosage awareness and information obtained for self-medication is another one of its strengths. Self-medication risk is also stated; however, it is not specified what kind of danger they face. The study's findings are reliable. No p values were added, but percentage change was recorded. There were no data gaps or errors. Self-medication was not linked to any other risk factors. There is no mention of drug type use. Another limitation is the sample size which is only 100. The research suggested doing a comparison of conventional treatments and OTC drug use during COVID-19, as well as a study of OTC medication use during COVID-19 across various age groups and geographic areas.[3]

To look at the awareness and use of self-medication, a descriptive non-experimental study approach is used. Participants were selected based on inclusion criteria like self-medication. There was little consistency, and the right practices and resources weren't taught. The study's advantage is that it was able to determine public perceptions and reactions to taking medications without a prescription during the COVID-19 outbreak without including respondents with involvement in or knowledge of the medical field (medical graduates, medical practitioners, nurses, medical researchers, pharmacist). The sociodemographic information and self-medication option were provided clearly, which is another benefit. Symptom-based drug consumption is also explained, as is the rationale behind self-medication. The study's conclusions are trustworthy. The p value was used to track percentage change. Estimates for demographic and self-medication variables from multilevel logistic regression models were presented as percentages. There were no incomplete or missing data.

Table 1: CASP analysis reports of the studies finally included by PRISMA screening (n=10).

QUESTIONS	Likhar, 2022.	Nair et al., 2021.	Neafsey et al., 202.	MCPS Mallik et al., 2022	Yang et al., 2022	Azhar et al., 2021	Mustafa et al., 2023	Mirdoosti et al., 2021	Saleem et al., 2021	Acharya et al., 2022
Did the study address a clearly focused Research question?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Did the authors look for the right type of papers?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Do you think all the important, relevant studies were included?	N	Y	N	Y	N	N	N	N	N	Y
Did the review's authors do enough to assess quality of the included studies?	N	Y	Y	Y	Y	Y	Y	N	Y	Y
Were the investigators 'blind' to the intervention they were giving to participants.	N	N	N	N	N	N	N	N	N	N
Were the people assessing/analyzing outcome/s'blinded'?	?	?	?	?	?	?	?	?	?	?
Apart from the study group, did each study group receive the same level of care (that is, were they treated equally)?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Was the precision of the self-medication effect reported?	Y	N	N	Y	Y	Y	Y	N	N	Y
Do the benefits of the study outweigh the harms and costs?	Y	Y	N	Y	Y	?	Y	N	N	Y
Is the model applicable to a general population?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Score out of 10	6	7	5	8	7	6	7	4	5	9

Y=yes, N= no, ? =not sure.

Table 2: Summary findings of the included studies by PRISMA screening on knowledge, attitude and practice (KAP) of self-medication and its health impacts (n=10).

First author, year	N	CASP score	Country	Self-medication agent	Finding	Health impact
Likhar, 2022	394	8	India	OTC medication, antibiotics	Before administering the medication, 65.48% of participants read the prescription's instructions. Student health-seeking behavior during COVID 19 was relatively low, at 26.14%. Self-medication use was 73.85% prevalent.	-
Nair, 2021	100	9	India	OTC drugs	Self-medication was practiced by 73% of people. 13% of respondents said they checked their neighborhood pharmacy, while 63% said they went to their family doctor to find out how much of the OTC drug to take.	Side effect and alleviated symptoms due to self - medication, 15%,
Nasir, 2020	639	7	Bangladesh	Ivermectine azithromycin, montelukast, calcium supplements, doxycycline, hydroxychlor oquine	53.03 percent were aware of self- medication and used pharmacies and doctors as a result. Self-medication was 88.33% common during the COVID-19 pandemic.	-
Mcps Malik, 2022	451	10	Pakistan	Pain reliever, antibiotics, Steroids	Patients self-medicated in 85.25% of cases. The vast majority of patients (74.7%) were in support of self-medicating.	Adverse health impact due to self-medication, 5.6%
Yasmin, 2022	489	9	Pakistan	Paracetamol, multivitamins, ibuprofen, cetirizine, azithromycin	Self-medication was used often (83.0%). 71.4% of people had a view on utilizing drugs for self-medication.	side effect and alleviated symptoms due to self - medication, 22.3%,
Azhar, 2021	290	7	Pakistan	Analgesics; Hydroxychloroquinone; Azithromycin; and Ivermectin	As 46.7% of them were aware of self-medication, they sought medical advice. For "self-medication," 53% of the individuals utilized the medications. Self- medication was a factor in how they felt about it (10.7%) and how terrified they were of becoming sick (16.3%).	Adverse health impact due to self-medication, 6%
Mustafa, 2023	1173	8	Pakistan	Antipyretics, antibiotics, vitamins	86.4% of people knew about self- medication. During the COVID-19 epidemic, self-medication was used by 60% of persons. Self- medication, according to 37%, is a kind of self-care.	-
Mudassar, 2021	698	5	Pakistan	OTC	Fear of developing COVID-19 (30.5%) was the main motivator of the attitude toward self-medication. 12.6% were aware of self- medication. Self-medication is practiced by 23.3% of respondents.	-
Saleem, 2021	520	6	Pakistan	Analgesics, Antipyretic, Antibiotic,	Respondents had a positive opinion of SM and almost half of participants (44.7%) practised SM once day due to fear of COVID-19.	-

Continued.

First author, year	N	CASP score	Country	Self-medication agent	Finding	Health impact
				Antihistamine	Due to participants' visits to the pharmacy to speak with the pharmacist about drug consumption, dose suggestions, duration of use, and concurrent use, 42% of them were aware of self- medication. 58% of people are estimated to have SM.	
Acharya, 2022	383	10	Nepal	Paracetamol, Vitamin C	Self-medication was common during the pandemic with a rate of 50.4%. 62.6% of patients were aware of self-medication thanks to prescriptions from pharmacies and telemedicine.	Self-medications had adverse effects for (11%) responders. Headache (26.2%), allergic responses (20.1%), vertigo (18.8%), gastritis (15%), constipation (10%), diarrhea (6.2%), and fungus infection (3.3%) were the most frequent adverse effects.

Table 3: Summary data of key findings of knowledge, attitude and practice (KAP) of self- medication among COVID19 affected people in South Asia and its impacts on their health (n=5137).

KAP status of self-medication and its impacts on health	Number of study (%)	Frequency	Percentage (%)
COVID 19 affected population had knowledge of self-medication	8 (80)	2211	43.04
COVID 19 affected population had positive attitude to self-medication	8 (80)	2001	38.95
COVID 19 affected population had practiced self-medication	10 (100)	2906	56.56
COVID-19 affected population had Impacts of self-medication on health	5 (50)	206	4.01

According to the study, the most effective treatments to alter people's behavior about health seeking include immediate acceleration of health education programs, strong regulations on medication distribution, and improving the quality and accessibility of healthcare.[4]

The design of the cross-sectional research was intended to evaluate outcomes. Self-medication practice was one of the inclusion criteria used to identify participants. Self-mediation practice assessments were conducted fairly by skilled researcher, and baseline characteristics were mapped properly. There was a clearly defined study protocol. The strength of the study is that there were only 49 dropouts considering the nature of study. The results of the study are credible. However, no confidence intervals are reported, but the outcomes were measured and reported, results are expressed as percentage. Percentage change was reported along with p value. Used SPSS statistics software. The study demonstrated higher self-medication among lower socio-economic group. Most of the respondents had favorable attitude toward self-medication. This particular study also assessed the adverse response of the drug usage.[5]

The design of the cross-sectional research was intended to evaluate outcomes. Self-medication practice was one of the inclusion criteria used to identify participants. Self-mediation practice assessments were conducted fairly by skilled researcher, and baseline characteristics were mapped properly. There was a clearly defined study protocol. The results of the study are credible. However, no confidence intervals are reported, but the outcomes were measured and reported, results are expressed as percentage. Percentage change was reported along with p value. Used SPSS statistics software. Bivariate analysis of the factors associated with the self-medication of various drugs during the COVID-19 lockdown were also shown. The strength of the study is that it showed the effect of self-medication.[6]

The cross-sectional study approach was meant to assess results. The practice of self-medication was one of the inclusion criteria used to identify individuals. The evaluations of self-mediation practice were completed by a competent researcher, and the mapping of baseline features was accurate. A properly established research procedure existed. The study's findings are trustworthy. The outcomes were measured and reported, and the percentage findings are given. Change in percentage was recorded with the p value. Utilized the statistics program SPSS. Reasons for self-medication and sources of self-medication were mentioned, which aided in achieving our objective. The study's strength is that it demonstrated the effects of self-medication.[7]

The design of the cross-sectional research was intended to evaluate outcomes. Self-medication practice was one of the inclusion criteria used to identify participants. Self-mediation practice assessments were conducted fairly by skilled researcher, and baseline characteristics were mapped properly. There was a clearly defined study protocol. The results of the study are credible. Outcomes were measured and reported, results are expressed as percentage. Percentage change was reported along with p value. Used SPSS statistics software. Knowledge, attitude and practice were included which is a strength in finding our desired result. The limitation is that the study did not conducted research on the adverse effect of self-medication.[8]

The cross-sectional research was well-designed and intended to evaluate the results. Based on inclusion criteria like self-medication, participants were chosen. There was no uniformity, and proper procedures and supplies were not taught. Self-mediation practice assessments were conducted fairly by skilled researcher, and baseline characteristics were mapped properly. There was a clearly defined study protocol. The study's limitation is that the self-medication option was not well presented. The study's findings are reliable. P values were added, with percentage change was recorded. Used SPSS statistics software. There were no data gaps or errors. Self-medication was not linked to any other risk factors. There is no mention of drug type use.[9]

The design of the cross-sectional research was intended to evaluate outcomes. Self-medication practice was one of the inclusion criteria used to identify participants. Self-mediation practice assessments were conducted fairly by skilled researcher, and baseline characteristics were mapped properly. There was a clearly defined study protocol. The strength of the study is that there were large no. of sample size considering the nature of study. The study's findings are reliable. Although continuous variables were given as mean with standard deviation (M SD), all categorical variables were reported in frequency (N) and percentage (%). A 0.05 p value was regarded as significant. Using the chi-square test, the socio-demographic data were compared between respondents who self-medicate and those who do not during the COVID-19 pandemic. Applied the statistical program SPSS. The study's strength is that it demonstrated in-depth understanding, attitude, and self-medication practice. The drawback of self-medication is that it has no negative effects on health.[10]

The design of the cross-sectional research was intended to evaluate outcomes. Self-medication practice was one of the inclusion criteria used to identify participants. Self-mediation practice assessments were conducted fairly by skilled researcher, and baseline characteristics were mapped properly. There was a clearly defined study protocol. The strength of the study is that there were large no. of sample size considering the nature of study. The study's findings are reliable. Variables were expressed by percentages and descriptive statistics were utilized. For binary data, the point estimate with a 95% confidence interval was generated along with frequency and percentage. A 0.05 p value was regarded as significant. Applied the statistical program SPSS. The study's strength

is that it demonstrated in-depth understanding, attitude, and self-medication practice. In addition, other negative effects brought on by self- medication were also recorded.[11]

Characteristics of the included studies

In this review, 10 cross-sectional research were included. All of the chosen studies were presented, with a total of 5763 respondents who were fully engaged and subjected to analysis. The studies that were chosen had samples ranging in size from 100 to 1173. The majority of study lasted two to four months on average, with a handful lasting more than six months. The investigations were carried out in South Asian nations including Bangladesh, India, Pakistan, and Nepal at universities or medical facilities. Their self-medication knowledge was evaluated based on the information they obtained from physicians, pharmacists, and drug booklets. The cause for self-medication was used to evaluate attitudes.

RESULTS

Knowledge of self-medication among the respondents

Several characteristics were included in order to examine the knowledge, attitude, behavior, and health effect of self-medication. Variables were used for knowledge of self-medication by consulting with pharmacists and physicians.[2-10] Respondents in other research had broad awareness about self-medication but did not elaborate on the source of their information.[8-9] By reading drug leaflets, respondents gain knowledge about self-medication, according to a study.[10] But, regardless of the source of information respondents get, the primary objective is to determine their degree of self-medication expertise, which I have found in all but two research.[10-11]

Attitude towards the self-medication among the respondents

Few research has been undertaken on the perception of self-medication. Several reasons were cited, including convenience (23.09%), the goal to get immediate relief/for emergency usage (21.06%), faith in their prescription (20.8%), and cost savings (5.83%).[2] According to studies, attitudes about self-medication were comparable (71-75%).[3-4] According to two research, between 30 and 45% of those who self- medicate are driven by the fear of developing COVID-19.[5-6]

Practice of self-medication among the respondents

All investigations demonstrated the frequency of self-medication among people affected by COVID-19. Many research indicate that the prevalence of self-medication is rather high (73-89%).[7-8] 50-60% self-medication was found in certain research.[7-10] Nevertheless, according to survey revealed that just 12.6% of subjects engaged in self-medication.[8]

Health effect of self-medication

Not much studies are conducted on the health impact of self-medication. Two of the studies indicated adverse health impact due to self-medication, 5.6-6%.9 Studies by some reports reported side effect and alleviated symptoms due to self -medication, 15-22.3%, respectively.[7-8] None of the aforementioned research, nevertheless, detailed the symptoms or outcomes that self-medication caused. Only the one trial shown that using these medications had adverse effects for (11%) responders.[6] Headache (26.2%), allergic responses (20.1%), vertigo (18.8%), gastritis (15%), constipation (10%), diarrhea (6.2%), and fungus infection (3.3%) were the most frequent adverse effects.

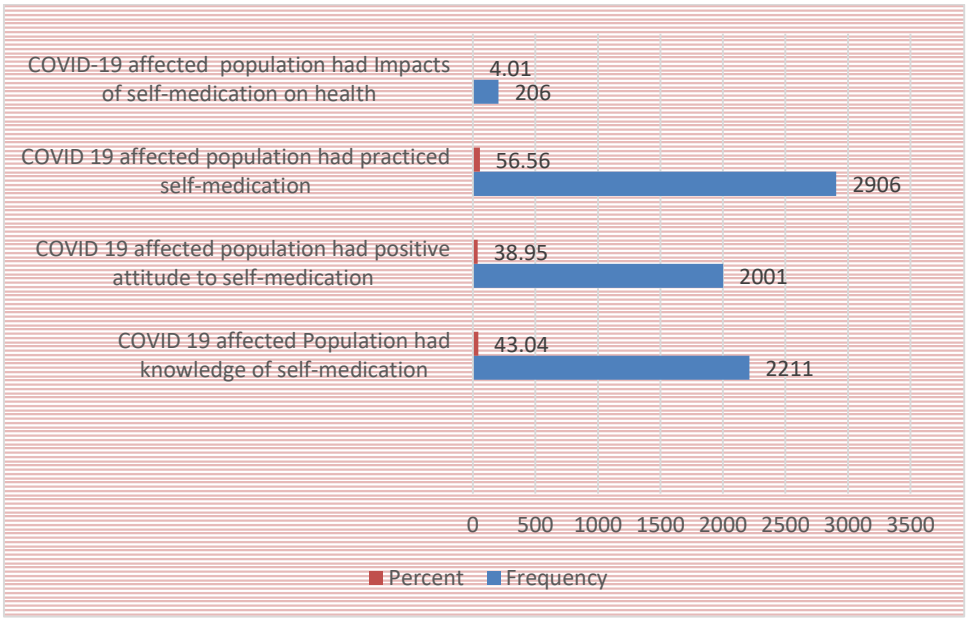

Figure 2: Distribution of KAP of self-medication among COVID-affected people and its impacts on them (n=5137).

Credibility of results

The results of all the studies were credible and precise. All the authors of the studies did the calculation to select the size of the cross-sectional. Every selected study measured all of the outcomes they originally decided to track at the start of the research. All the baseline characteristics were measured with the help of qualified doctors for the study groups. Observed data and results were reported as either percentages or Mean Standard Deviation and Standard Error. All the selected studies reported percentage change along with the p values. Few of the selected studies reported Confidence Intervals of 95% or above. 6-9 None of the data, including baseline characteristics, observations, and measurements, was missing or incomplete in any of the selected studies. Three studies used well-established statistical tools such as Logistic Regression Analysis. 8-9 All of the studies used SPSS as their preferred tool for statistical analysis.

Table 3 shows the summary data of key findings of knowledge, attitude and practice (KAP) of self- medication among COVID19 affected people in South Asia and its impacts on their health. Ten papers were included in this systematic review utilizing the PRISMA screening method, according to the inclusion criteria, a total of 10 studies that included a total of 5137 research participants. Among the participants. The most frequent COVID-19 affected participants, 2211 (43.04%) COVID 19 had adequate knowledge of self-medication followed by 2001 (38.95%) had a positive attitude toward self-medication, 2906 (56.56%) had engaged in self-medication and 206 (4.01%) population had adverse effects on their health.

DISCUSSION

This systematic review enrolled a total of 10 papers using PRISMA screening methodology. In the included studies, a total of 5137 COVID19 affected patients from South Asia who were self-medicated to avoid SERS- CoV-2 were enrolled. The aim of this paper was to determine the knowledge, attitude and practice of self-medication among COVID-19 affected people and its impacts on them. .This systematic review investigated that among the participants of the included studies, the majority 2211 (43.14%) COVID-19 affected people had adequate knowledge of self-medication followed 2001 (38.95%) COVID 19 affected people in South Asia had a favorable attitude towards self-medication, 2906 (56.56%) COVID 19 affected people in South Asia, actually engaged in self-medication and 206 (4.01%) self-medicated COVID-19 affected people in South Asia had adverse impacts on their health. The most frequent adverse effects were headache (26.2%), allergic responses (20.1%), vertigo (18.8%), gastritis (15%), constipation (10%), diarrhea (6.2%), and fungus infection (3.3%). This present review study observed, 2211 (43.04%) COVID 19 afflicted people had enough understanding of self-medication. A systematic review that was conducted in Nigeria (Wegbom et al., 2020) found that 96.7% of the COVID 19 afflicted population had enough knowledge of self-medication, which was almost twice as high as the percentage found in the current study. Maybe the short research time and small sample size were to blame for this. In contrast, we found that 2001 (38.95%) COVID19 afflicted patients in South Asia had a favorable attitude about self-medication in the present study. In Pakistan, a comparable systematic review to this one reported that 44.7% of the COVID-19 affected people had a favorable attitude about self-medication, because of their fear of the virus, which is a smaller percentage than that of this current study.[20] This may have occurred as a result of the small sample size and brief research period, as well as regional or cultural trends, since people's attitudes regarding self-medication may vary over time and between nations. In the current investigation, we discovered that 2906 (56.56%) COVID 19 afflicted individuals in South Asia had self-medicated. In a research that is comparable to this one but was undertaken at Chittagong Medical College in Bangladesh, self-medication was practiced by 44.786% of the population during the COVID-19 pandemic, a smaller percentage than in the current study.[21] They may have utilized a small sample size, which made a ratio disparity. Their higher level of education relative to the general population may be the cause of this outcome. Healthcare personnel had the lowest rate of self-medication. This outcome may also be related to their awareness of the negative effects of self-medication. The low prevalence of self-medication in the European continent may be attributed to the region's residents' general awareness and the clear guidelines for the distribution and availability of medications. Studies that collected information in 2021 found that self-medication was increasingly common.[22-25] This outcome could be explained by a drop in people's extreme fear of the COVID-19 virus and an increase in familiarity with this disease. People in some countries stocked up on toilet paper, face masks, basic foods, and even armed themselves as a result of false information at the beginning of the epidemic and the government's health precautions, which caused psychological suffering and serious panic among the populace.[26] Knowledge, attitude and practice among the COVID-19 affected people in South Asia. Few papers on the perception of self-medication were discovered in our research. Convenience (23.09%), the need for immediate relief/for emergency usage (21.06%), confidence in their prescription (20.8%), and cost savings (5.83%) were among the reasons mentioned. Two other studies found that attitudes about self-medication were comparable (71%–75%).[27-28] Between 30 and 45 percent of self-medicating people worry about getting COVID-19, according to two studies.[29-30] The bivariate analysis revealed that the participants' attitudes toward healthcare facilities during the height of the corona virus, the influence of family and friends, the distance between the school clinic and the hostel, and the perceived ineptitude of service at the time were the most frequent causes of self-medication.[31] In logistic regression, fear of going to a doctor or getting a COVID-19 test was the main factor predicting self-medication. Self-medication is more common among students than it is in the general

population, according to a second study of 170 medical and pharmacy students at Iran's Zabol University of Medical Sciences.[32] This was related to having more Internet access and a higher degree of knowledge. Self-assurance and knowledge of medications were factors in a few research involving college students that self-medicate.[33-36]

Knowing how to properly take drugs and self-medicate using over-the-counter (OTC) treatments may improve health and reduce the tax burden on the government. Results of a Saudi Arabian study that examined 440 female university students majoring in medical/computer science or the arts' knowledge, attitudes, and usage of over-the-counter oral analgesics. This particular study discovered that medical students were more accepting of the use of analgesics.[37] A total of 338 respondents, or 81.1% under the age of 40 and 52.2% with post-secondary degrees, obtained a good attitude score.[38] The study among Brunei Darussalam students did not identify any statistically significant differences between demographic variables and attitude ratings.[36] However, self-medication is quite common, which may be a symptom of people's self-care habits, but it may also be extremely dangerous, especially for the elderly, children, pregnant women, and individuals with underlying medical disorders. In order to reduce the dangers associated with self-medication, it is required to establish and publish instructions and recommendations that discriminate between safe and high-risk self-medication in the event that further waves of the COVID-19 pandemic or other pandemics arise in the future.

Limitations of the study

The study's limitations include the few investigations that have been conducted on the KAP study of self-medication among COVID-19 patients. Important literature and data may have been missed during the independent selection of research and assessment of their quality. In order to reduce the possibility that relevant publications would be removed, at least two reviewers should undertake concurrent, independent assessments, with a third being used to resolve disagreements. Peer-reviewed journal articles were the only ones included. This ensures that the selected articles are of the highest quality, but it also raises the chance of a publication bias since strong material could be passed over. It is crucial to locate unpublished research and, where suitable, integrate its results in a systematic review. The potential for response bias in the chosen studies due to the sensitivity of the subject, as well as recall bias, which is common in retrospective research and surveys requesting information from respondents' recollections of prior events or experiences. • The lack of research that looked at the effect of self-medication on the health of the COVID-19-affected population in South Asia.

CONCLUSION

This systematic review investigated that (43.04%) South Asian people had knowledge about self-medication, (38.95%) people had favorable attitude to self-medication, 56.56% people practiced self-medication and 4,01% people had adverse impacts on their health during COVID-19 Pandemic in South Asia. The most frequent adverse effects of self-medication were observed headache, allergic responses, vertigo, gastritis, constipation,, diarrhea, and fungus infection. Finally, this review study concluded that self-medication was very common, with over half of the study population engaging in it during COVID-19 Pandemic. Therefore, it is vital to enhance public awareness about the adverse effects of self-medication without having proper knowledge.

Recommendations

Self-medication may not be dangerous in and of itself, but it raises serious issues when prescription and over-the-counter drugs are misused. Consultations with friends, prior drug treatment experience, and self-knowledge were the most frequent sources of information on current drugs for SMP. Notwithstanding environmental changes, PPB mandates should increase health education on self-medication for part-1 poisons and promote limits on self-prescription among customers and pharmacy professionals since the practice might seriously impact the health of the affected people. The pharmacy personnel should also put the general public's safety first by turning down serious requests for self-medication regardless of the circumstance and by urging the populace to see a medical facility with a complete range of clinical diagnostic tools for their own protection. During viral outbreaks, it is proposed that medical organizations and authorities increase virtual consultation systems with doctors, lower the cost of these services, introduce and educate how to use this tool, and restrict self-medication and face-to-face consultations. Interventions in education and public legislation limiting the use of over-the-counter antibiotics are urgently needed.

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