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A CROSS-SECTIONAL STUDY ON SELF-MEDICATION FOR COVID-19 AND ASSOCIATED FACTORS AMONG ADULTS IN A RESIDENTIAL COLONY OF EAST DELHI

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ABSTRACT: A cross-sectional study was conducted among 140 study subjects in an urban residential area of East Delhi selected by simple random sampling method to assess the prevalence of self-medication for Covid-19 and associated socio-demographic and economic factors. Data were collected by interviewing the study subjects using a pre-tested semi-structured interview schedule. The Mean$\pm$SD age of the study subjects was 41.89 ± 13.54 years (range: 20 to 75 years); 77 (55.0%) were males, and 75.7% were graduates and above. There were 86 with a Covid-19 positivity history. The prevalence of self-medication among them was 33.7% (95% CI: 23.9%, 44.7%), least in 30-39 years (5.9%, 95% CI: 0.1%, 28.7%), maximum in 40-49 years (44.4%, 95% CI: 21.5%, 69.2%) (p=0.101), higher in females (38.1%, 95% CI: 23.6%, 54.4%) than males (29.5%, 95% CI: 16.7%, 45.2%) (p=0.402), socioeconomic class III (52.4%, 95% CI: 29.8%, 74.3%) and least among class I (20.0%, 95% CI: 9.6%, 34.6%) (p=0.017). Self-medication was not associated with education level, working status and marital status. Prevalence of self-medication was high during the first episode of Covid-19 (39.7%, 95% CI: 28.5%, 51.9%) (p=0.005); higher with mild (47.1%, 95% CI: 32.9%, 61.5%), than with moderate Covid-19 severity (12.9%, 95% CI: 3.6%, 29.8%) (p=0.006). Medicines for self-medication were Vitamin C (82.8%), Zinc (69.0%), Paracetamol 500 mg (62.1%), Azithromycin (31.0%), Ivermectin (27.6%), Doxycycline (24.1%). The common reasons for self-medication were: information from friends/relatives (86.2%), chemist/ pharmacist (58.6%), social media (41.4%) etc. The chemist shops were commonest source of getting medicines for self-medication (82.8%).

INTRODUCTION: In December 2019, there were reports of few cases of unidentified pneumonia having high fatality, originating from Huanan Seafood Wholesale Market, Wuhan, China. The signs and symptoms were similar to viral flu such as fever, cough, diarrhoea, fatigue, vomiting.

The causative agent was later identified as the SARS-Cov-2 virus. Some cases were severe, causing respiratory distress, heart injury and secondary infection [1, 2]. This disease is now recognized as Covid-19, which was declared as pandemic by the World Health Organization (WHO) on March 11, 2020 [3].

Covid-19 led to a wide range of physical and mental health problems. There was a mass fear called " Coronaphobia " characterized by mass hysteria, anxiety, irritability, confusion, insomnia, denial, despair, fear of getting the disease, depression, substance dependence, suicidal

thoughts and post-traumatic stress disorder [4]. The Covid-19 pandemic has triggered a general lockdown in most parts of the world. It has left the general public to resort to self-care, self-help and self-medicate. This has been worsened due to the infodemic of fake news related to the prevention and management of the pandemic of Covid-19. The vast exposure to news in the media, social media and internet has resulted in people adopting the practice of self-medication [5]. Self-medication is the practice of consuming medicinal products for treatment and surveillance of self-diagnosed symptoms in the absence of physician's advice [6]. Self-medication can be in the form of over-the-counter drugs or use of traditional medicine in the form of home remedies [7]. Self-medication may lead to delay in seeking health care resulting in economic loss. It can lead to drug interaction and use of antibiotics can lead to antimicrobial resistance [8, 9]. A systematic review by Quincho-Lopez *et al* reported that in the general population self-medication prevalence ranged between <4% to 88.3% to prevent or manage Covid-19. The most widely used medicines included antibiotics, chloroquine, acetaminophen, vitamins or supplements, ivermectin and ibuprofen [10].

Few community-based studies have reported on the prevalence and associated factors regarding self-medication during Covid-19. Nasir M *et al* in Bangladesh, among high socioeconomic and educated citizens observed that 88.3% used self-medication like Ivermectin (77.15%, Azithromycin (54.15%), doxycycline (40.25%) *etc* [11]. Wegbom *et al.* from Nigeria reported the prevalence of self-medication in the population with males and having knowledge on self-medication as associated factors [12]. Prevalence of self-medication in Covid-19 was 34.2% in Togo, with vitamin C and traditional medicines as commonly used products [13]. There is paucity of information on self-medication for Covid-19 in India. Hence, this study was planned with the following objectives (1) to assess the prevalence of self-medication for Covid-19 among adult population and (2) to find out socio-demographic and economic factors associated with self-medication for Covid-19 during the pandemic.

MATERIAL AND METHODS: This was a population-based descriptive cross-sectional observational study conducted over a period of two

months (August-September 2022). It was conducted in Dilshad Garden, J and K pocket, East Delhi. A list of 709 households was available in the residential colony with the Residents Welfare Association (RWA) for the sampling frame.

The sample size was calculated based on 41% prevalence of self-medication reported by Wegbom *et al.* [12], with 8.2% absolute precision, using the formula

$$N = Z_\alpha{}^2 pq / L^2$$

(Where N= sample size, Z_α = 1.96, p= Prevalence, q=100-p, L = precision, 20% of p=8.2%). The sample size was 138. Considering 10% non-response, it was 152.

Sampling Method: A total of 152 households were selected by simple random sampling method out of the 709 households using random number generator web: calculator.net. In each household, one adult (18 years and above) was selected by the lottery method. If the person was not interested, another adult based on lottery from the remaining was selected. This process was continued to choose one participant from the household. If none was interested then the household was not selected. Inclusion criteria was an adult aged 18 years and above giving consent for the study and exclusion criteria was any person with severe illness, unable to give response to questions.

Verbal permission for data collection was obtained from Resident Welfare Association. Home visits to selected households collected data. Selected adult by lottery method was interviewed using a pre-tested, validated semi-structured interview schedule after getting written informed consent and giving participant information sheet in English / Hindi. The study tool consisted of items related to socio-demographic economic characteristics such as age, gender, education level, occupation, marital status, total family income per month, number of family members, questions related to awareness about Covid-19, prevention, treatment and control measures, source of information, history of Covid-19 (based on self-report or available health card with investigative report), medication intake (prescribed or self-medication) during the Covid-19 pandemic for Covid-19, reasons for self-medication if any, source of medicines, any adverse effects,

hospitalization for Covid-19, *etc*. The interview schedule was translated into Hindi and retranslated to English for language accuracy by a Hindi and English translator. The study subjects were educated about the possible adverse effects of self-medication for avoidance in the future.

Data Analysis: Data were entered and analyzed using SPSS 25 version. Qualitative variables were expressed in percentage; quantitative data were expressed as Mean$\pm$SD, median (Interquartile range). Prevalence of self-medication use was expressed in percentage (95% confidence interval). The chi-square test was used for the association of socioeconomic variables with prevalence of self-medication. Univariate analysis was done to identify associated factors with self-medication. The 'p' value less than 0.05 was considered statistically significant. Modified B.G. Prasad classification for May 2021 was used for socioeconomic classification [14].

The study was conducted after ethical clearance from Institutional Review Board, Teerthanker Mahaveer Medical College and Research Centre, Moradabad (reference no IRB/74/2022). Study subjects were included after written informed consent, and no coercion was done to include them. They were given education about the possible harmful effects of self-medication.

RESULT: The cross-sectional study was conducted among 140 study subjects in a community-based setting in a residential area of East Delhi. The mean age was 41.89$\pm$13.54 years, a median of 41 years (IQR: 29.25 years to 52.75 years), ranging from 20 to 75 years.

It was seen that 77 (55.0%) of the participants were males, whereas 63 (45.0%) of the study participants were females. It was further seen that 75.7% of the participants were graduates and post-graduates in educational qualifications. Out of 140, 89 individuals reported covid-19 positivity (63.6%) and were contacted for self-medication for Covid-19 during the pandemic.

Prevalence and Associated Factors of Self-Medication: Out of 86 with a history of Covid-19 positivity, 29 (33.7%, 95% CI: 23.9%, 44.7%) took self-medication. This includes 4 who consulted a doctor but were not prescribed any medication due to the mild asymptomatic nature of Covid-19. **Table 1** shows the association of socio-economic-demographic and other factors with self-medication among study subjects. The prevalence of age-specific self-medication was least in 30-39 years age group (5.9%, 95% CI: 0.1%, 28.7%). The prevalence of age-specific self-medication was maximum in 40-49 years age group (44.4%, 95% CI: 21.5%, 69.2%). However, the prevalence of age-specific self-medication across the age groups was not statistically significant (p=0.101).

Gender-specific prevalence of self-medication also did not show significant differences between males (29.5%, 95% CI: 16.7%, 45.2%) and females (38.1%, 95% CI: 23.6%, 54.4%) (p=0.402).

The prevalence of self-medication showed significant differences between various socioeconomic classes; the highest prevalence was seen in socioeconomic class III (52.4%, 95% CI: 29.8%, 74.3%) and least among class I (20.0%, 95% CI: 9.6%, 34.6%) (p=0.017). The prevalence of self-medication did not differ significantly between families having 1-4 members (31.5%, 95% CI: 21.1%, 43.4%) and families having members 5-8 (46.2%, 95% CI: 19.2%, 74.8%) (p=0.303).

The educational level of the study subjects did not have any significant association with the prevalence of self-medication. Prevalence of self-medication was reported to be higher (36.2%, 95% CI: 24.9%, 48.7%) among those educated graduate and above level than those educated below graduate level (23.5%, 95% CI: 6.8%, 49.9%). The difference was not significant (p=0.321).

The occupation among the study subjects was also not associated with the prevalence of self-medication. The prevalence of self-medication was 27.3%, (95% CI: 16.1%, 40.9%) among those in job working both in Government and private sector, and it was 45.2% (95% CI: 27.3%, 63.9%) among those not working (p=0.09).

The prevalence of self-medication was higher among single or unmarried study subjects (60.0%, 95% CI: 26.2%, 87.8%) than married study subjects (30.3%, 95% CI: 20.2%, 41.8%) but not statistically significant (p=0.06).

TABLE 1: ASSOCIATION OF SOCIO-ECONOMIC-DEMOGRAPHIC AND OTHER FACTORS WITH SELF-MEDICATION AMONG STUDY SUBJECTS (N=86)

Variables	Self- medication		Total	X^2, df, 'p' value
	Yes No. (%) (95% CI)	No No. (%)	No. (%)	
Age group (years)				
20-29	7 (41.2) (18.4,67.1)	10 (58.8)	17 (100.0)	7.75, 4, 0.101
30-39	1 (5.9) (0.1,28.7)	16 (94.1)	17 (100.0)	
40-49	8 (44.4) (21.5,69.2)	10 (55.6)	18 (100.0)	
50-59	9 (40.9) (17.2,59.3)	13 (59.1)	22 (100.0)	
>/60	4 (33.3) (9.9,65.1)	8 (66.7)	12 (100.0)	
Gender				
Male	13 (29.5) (16.7,45.2)	31 (70.5)	44 (100.0)	0.73, 1, 0.402
Female	16 (38.1) (23.6,54.4)	26 (61.9)	42 (100.0)	
Socio economic status				
Class I (>/ Rs.7863)	9 (20.0) (9.6,34.6)	36 (80.0)	45 (100.0)	8.20, 2, 0.017
Class II (Rs.3931-7862)	9 (45.0) (,45.5)	11 (55.0)	20 (100.0)	
Class III (Rs.2359-3930)	11 (52.4) (29.8,74.3)	10 (47.6)	21 (100.0)	
Total family size				
1-4	23 (31.5) (21.1,43.4)	50 (68.5)	73 (100.0)	1.05, 1, 0.303
5-8	6 (46.2) (19.2,74.8)	7 (53.8)	13 (100.0)	
Educational level				
Below graduation	4 (23.5) (6.8,49.9)	13 (76.5)	17 (100.0)	0.98, 1, 0.321
Graduate and above	25 (36.2) (24.9,48.7)	44 (63.8)	69 (100.0)	
Occupation				
Working	15 (27.3) (16.1,40.9)	40 (83.7)	55 (100.0)	2.83, 1, 0.09
Not working	14 (45.2) (27.3,63.9)	17 (54.8)	31 (100.0)	
Marital status				
Married	23 (30.3) (20.2,41.8)	53 (69.7)	76 (100.0)	3.49, 1, 0.06
Single or unmarried	6 (60.0) (26.2,87.8)	4 (40.0)	10 (100.0)	

The prevalence of self-medication among study subjects according to severity and number of episodes of Covid-19 is shown in **Table 2.** All the 29 study subjects had taken self-medication during the first episode of Covid-19, and none took it during the second episode of the infection. The prevalence of self-medication in the first episode of Covid-19 (39.7%, 95% CI: 28.5%, 51.9%) was significantly higher than in the second episode (0.0%) (p=0.005). Similarly, the prevalence of self-medication was highest among those with mild Covid-19 (47.1%, 95% CI: 32.9%, 61.5%) and least among those with moderate severity of Covid-19 infection (12.9%, 95% CI: 3.6%, 29.8%). The difference in the prevalence of self-medication across the severity categories of Covid-19 was statistically significant (p=0.006).

TABLE 2: PREVALENCE OF SELF-MEDICATION AMONG STUDY SUBJECTS ACCORDING TO SEVERITY AND NUMBER OF EPISODES OF COVID-19

Variables	Self-medication for Covid-19		Total	X^2, df, 'p' value
	Yes No (%) (95%CI)	No No (%)	No (%)	
Number of episodes of Covid-19				
One	29 (39.7) (28.4, 51.8)	44 (60.3)	73 (100.0)	7.79, 1, 0.005
Two	0 (0.0)	13 (100.0)	13 (100.0)	
Severity of Covid-19				
Mild	24 (47.1) (32.9,61.5)	27 (52.9)	51 (100.0)	10.20, 2, 0.006
Moderate	4 (12.9) (3.6,29.8)	27 (87.1)	31 (100.0)	
Severe	1 (25.0) (0.6,80.6)	3 (75.0)	4 (100.0)	

Frequency for Self-medication Drugs: Table 3 shows the distribution of various medicines taken by 29 study subjects as a part of self-medication about the duration of intake. Medicines for self-medication among 29 study subjects were Vitamin C (82.8%), followed by Zinc (69.0%), Paracetamol 500 mg (62.1%), Azithromycin (31.0%), Ivermectin (27.6%), Doxycycline (24.1%). Only one each took Chloroquine, Prednisolone. The median duration of intake of these medicines was 3

or 5 days with a range varying from 3 days to 10 days. Paracetamol was taken for a median duration of 3 days (IQR 3, 5 days), Azithromycin, and Ivermectin were taken for a median of 3 days (IQR 3, 3). The median duration of intake for Vitamin C, Zinc, and Doxycycline was 5 days (IQR 5, 5 days). Out of 29, 5 (17.3%) also took Ayurvedic

medicines including Coronil and 4(13.8%) others took herbal preparations (Giloyi, Kadha) as a part of self-medication for Covid 19. The median duration of intake was 7 days (IQR 3, 10 days). The medicines were perceived to be effective by 26/29 (89.7%).

TABLE 3: MEDICINES TAKEN FOR SELF-MEDICATION BY STUDY SUBJECTS IN RELATION TO DURATION OF INTAKE

Medicines	Dose	No (%) n=29	Median (IQR) duration in days	Duration range in days
Vitamin C	500 mg	24 (82.8)	5(5,5)	3,10
Zinc	50 mg	20 (69.0)	5(5,5)	3,5
Paracetamol	500 mg	18 (62.1)	3(3,5)	3,5
	650 mg	7 (24.1)	3(3,5)	3,5
Azithromycin	500 mg	9 (31.0)	3(3,3)	3,3
Ivermectin	12 mg	8 (27.6)	3(3,3)	3,3
Doxycycline	100 mg	7 (24.1)	5(5,5)	3,5
Chloroquine	250 mg	1 (3.4)	3*	
Prednisolone	15 mg	1 (3.4)	5*	
Others				
Ayurvedic medicine including Coronil		5 (17.3)	7(3,10)	3,15
Herbal products (Giloyi, Kadha)		4 (13.8)	7(3,10)	3,15

*Not Median since single subject.

The reasons for self-medication among 29 study subjects are shown in **Table 4**. It was observed that 25/29 (86.2%) got information about the medicines from friends and relatives. Chemists/Pharmacists also played a role in telling them about the medicines (58.6%). Information from social media (41.4%), television/radio (27.6%) and websites (17.2%) also played role in getting the medicines. In only 2 (6.9%), advice by health worker/Accredited Social Health Activist (ASHA)/nurse prompted self-medication. One (3.4%) took self-medication due to financial constraints to consult a doctor.

TABLE 4: REASONS FOR TAKING SELF-MEDICATION AMONG STUDY SUBJECTS

Reasons*	Number (%) N=29
Got information from friends/relatives	25 (86.2)
Told by chemist/pharmacist	17 (58.6)
Information from social media	12 (41.4)
Got information from TV/radio	8 (27.6)
Got information from website	5 (17.2)
Advised by health worker/ ASHA/Nurse	2 (6.9)
Financial constraint to consult doctor	1 (3.4)

*Multiple responses, mutually not exclusive.

The adverse effects reported among 29 subjects taking self-medication were: skin rashes (34.5%),

nausea (24.1%), pain in the abdomen (20.7%), loss of appetite (17.2%), vomiting (13.8%), loose motion (6.9%) and one (3.4%) each of change in urine colour and gas in the stomach. The commonest source of getting medicines for self-medication was from the chemist shop (82.8%) followed by friends/relatives giving the medicines (31.0%) and availability at home (3.4%). This is shown in **Fig. 1.**
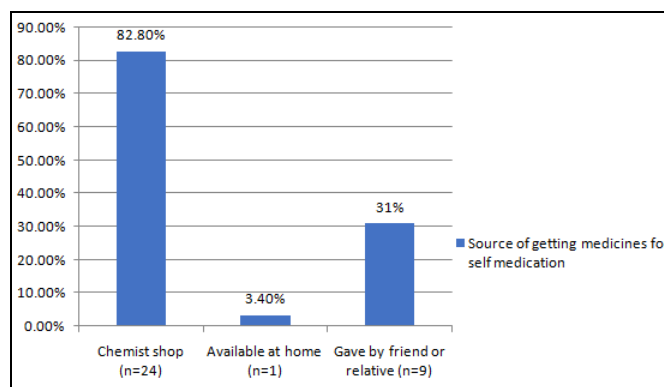
FIG. 1: SOURCE OF GETTING MEDICINES FOR SELF-MEDICATION (N=29)

The money spent on self-medication ranged from Rs.100 to Rs.1000, mean was Rs 914.28± Rs.1796.02, and median was Rs 500 [Inter quartile range (IQR): Rs.500, Rs 800].

DISCUSSION:

Prevalence and Associated Factors of Self-medication: In the present study, out of 86 with Covid 19 positivity, 29 (33.7%, 95% CI: 23.9%, 44.7%) took self-medication. This is similar to that reported by Sadio *et al.* in Togo (34.2%) [13], Amuzie *et al.* (30.3%) in Nigeria [15], Joseph *et al.* in Mangalore (34.2%) [16], Okoye *et al.* in Nigeria (36.3%) [17]; higher than by others *viz.* Chopra *et al.* in Greater NOIDA (25%) [18], Sharma *et al.* from Mumbai (16.8%) [19], Sujan *et al.* from Bangladesh (11%) [20]; lower than that reported by Nasir *et al.* in Dhaka (88.3%) [11], Likhar (73.8%) [21], Patel *et al.* in Maharashtra (43%) [7], Rafiq et al. (67.3%) [22], Sarkar *et al.* from Bengaluru (65%) [23], Roy *et al.* (>80% in urban area) [24], Shah *et al.* from Gujarat (78.3%) [25]. These differences could be related to differences in the study areas, population, selection method of study subjects, and method of data collection.

The prevalence of age-specific self-medication was least in 30-39 years age group (5.9%, 95% CI: 0.1%, 28.7%), maximum in 40-49 years (44.4%, 95% CI: 21.5%, 69.2%) (p=0.101). Amuzie *et al.*, Okoye *et al.*, Quispe-Canari *et al.* also found that older age was associated with higher self-medication [15, 17, 26].

In contrast, few studies reported a higher prevalence of self-medication among younger age (Shah *et al.*, Kumar *et al.*, Seng *et al.*) [25, 27, 28]. Seng *et al.* reported that lower prevalence in older age could be due to cognitive decline and physical impairment [28].

In the present study, the prevalence of self-medication was higher in females (38.1%, 95% CI: 23.6%, 54.4%) than in males (29.5%, 95% CI: 16.7%, 45.2%) but not significant (p=0.402). A similar finding was reported by Sadio *et al.*, Sharma *et al.,* and Seng *et al.* [13, 19, 28] In contrast, other studies reported a higher prevalence of self-medication in males (Wegbom *et al.*, Sarkar *et al.)* [12, 23]. However, Sujan *et al.* from Bangladesh reported no difference in the prevalence of self-medication by gender or age [20].

The highest prevalence of self-medication was seen in socioeconomic class III (52.4%, 95% CI: 29.8%, 74.3%) and least among class I (20.0%, 95% CI: 9.6%, 34.6%) (p=0.017). Poverty has been identified as a factor of self-medication [29]. However, Sujan *et al.* from Bangladesh reported no difference in the prevalence of self-medication in different socio economic groups [20].

The present study observed that the prevalence of self-medication was reported to be higher among graduates and above (36.2%, 95% CI: 24.9%, 48.7%) than those educated below the graduate level (23.5%, 95% CI: 6.8%, 49.9%), but not significant (p=0.321). Higher education level were found to be associated with self-medication by others (Sadio *et al.,* Shah *et al.* Kumar *et al.,* Ahmad *et al.*) [13, 25, 27, 30] Other studies, in contrast, showed an association with lower education (Amuzie *et al.*, Jamhour *et al.*) [15, 31].

Employment status influences the prevalence of self-medication. In the present study, the prevalence of self-medication was 27.3%, (95% CI: 16.1%, 40.9%) among those in job (Government and private sector); and it was higher *viz.* 45.2% (95% CI: 27.3%, 63.9%) among those not working but not significant (p=0.09). Quispe-Canari *et al.*, on the contrary, found a higher association with employed [26].

The prevalence of self-medication was higher among single or unmarried study subjects (60.0%, 95% CI: 26.2%, 87.8%) than married study subjects (30.3%, 95% CI: 20.2%, 41.8%) but not statistically significant (p=0.06). Shah *et al.* also found an association of marital status with self-medication [25].

The prevalence of self-medication in the first episode of Covid 19 (39.7%, 95% CI: 28.5%, 51.9%) was significantly higher than in the second episode (0.0%) (p=0.005). There is scanty information on this aspect.

The prevalence of self-medication was significantly higher among those with mild Covid-19 (47.1%, 95% CI: 32.9%, 61.5%) and least among those with moderate severity of Covid-19 infection (12.9%, 95% CI: 3.6%, 29.8%) (p=0.006). There is a paucity of information on this aspect. The reason could be milder infection not requiring treatment and lesser consultation of doctors coupled with symptomatic relief from medicines obtained by self from a pharmacist or chemist shops.

Medicines for self-medication among 29 study subjects were Vitamin C (82.8%), Zinc (69.0%), Paracetamol 500 mg (62.1%), Azithromycin (31.0%), Ivermectin (27.6%), Doxycycline (24.1%). Only one each took Chloroquine and Prednisolone. It is alarming that these medicines, except Vitamin C, and Paracetamol are not over-the-counter drugs requiring physician prescription.

Others have reported antimalarials such as Hydroxychloroquine / Chloroquine, Vitamin C as self-medicated (Quincho-Lopez *et al.*, Sadio *et al*, Amuzie *et al*, Okoye *et al.*, Quispe-canari *et al.,* Dutta *et al.*,) [10, 13, 15, 17, 26, 32]. Antibiotics such as Ciprofloxacin, Azithromycin, Doxycycline has been reported for self-medication by Amuzie *et al*, Okoye *et al.*, Sujan *et al.*, Likhar *et al.*, Shah *et al.,* Quispe-Canari *et al.*, Rather *et al.*, Ahmad *et al.*, Jamhour *et al.*and Dutta *et al.* [15, 17, 20, 21, 25, 26, 29-32].

Drugs such as Ivermectin, Zinc have also been reported to be self-medicated during Covid-19 pandemic without any scientific basis by several authors (Quincho-Lopez *et al*, Okoye *et al,* Sujan *et al* and Dutta *et al*) [10, 17, 20, 32].

Nonsteroidal anti-inflammatory drugs such as Paracetamol, Ibuprofen has been most widely used as these are available over the counter in the pharmacies. It is substantiated by reports from studies by Quincho-Lopez *et al*, Joseph *et al*, Chopra *et al*, Sujan *et al,* Sarkar *et al*, Shah *et al,* Kumar *et al* and Ahmad *et al* [10, 16, 18, 20, 23, 25, 27, 30].

Study subjects have also taken herbal medicines, traditional medicine (Ayurveda, Homeopathy). Others have reported similar finding (Sadio *et al*-10.2%, Amuzie *et al*-30.3%,) [13, 15].

The median duration of intake of these medicines was 3 or 5 days (ranging from 3 to 10 days). The median duration of consuming the drugs were: Paracetamol 3 days (IQR 3,5 days), Azithromycin, and Ivermectin for 3 days (IQR 3,3), for Vitamin C, Zinc, Doxycycline: 5 days (IQR 5,5 days).

The Common Reasons for taking self-medication were: information from friends/relatives (86.2%), told by chemist/ pharmacist (58.6%), information from social media (41.4%), television/radio (27.6%) and websites (17.2%), financial constraints to consult doctor (3.4%). Other reasons have been reported such as fear of isolation, stigmatization (Amuzie *et al*) [15]; emergency illness, delay in hospitals, near to pharmacy by Wegbom *et al* [12] advertisements by mass media, social media, internet (Joseph *et al*, and Ahmad *et al*); [16, 30] told by a pharmacist or easy availability in pharmacy (Sharma *et al);* [19] previous experience, familial treatment, mild illness (Sisay *et al*) [33]. The common adverse effects reported from self-medication were: skin rashes (34.5%), nausea (24.1%), pain in the abdomen (20.7%), loss of appetite (17.2%), vomiting (13.8%), loose motion (6.9%) *etc*. The commonest source of getting medicines for self-medication was from the chemist shop (82.8%), from friends/relatives (31.0%) and availability at home (3.4%). Chemist /pharmacist as the source of self-medication has been reported by Sharma *et al.,* Shah *et al.* and Ahmad *et al.* [19, 25, 30].

CONCLUSION: The present study showed the prevalence of self-medication among subjects with Covid-19 positivity was 33.7% (95% CI: 23.9%, 44.7%), with no significant differences between age groups, gender, educational level, employment status, or marital status. It was significantly higher in the first episode of Covid-19, mild infection. The most commonly used drugs for self-medication were Vitamin C, Zinc, Paracetamol, Azithromycin, Ivermectin, and Doxycycline. The most common reasons for self-medication were getting information from friends/relatives, chemist/ pharmacist, social media, television/radio and websites. The commonest source of getting medicines for self-medication was from the chemist shop (82.8%).

There is a need for a mass awareness campaign on a war footing to educate the general public about the harmful effects of self-medication and monitoring of drug use including education and involvement of pharmacist in preventing self-medication.

Limitations of the Study: The study was conducted in an urban residential colony of Delhi, Hence, the findings of the study cannot be generalized to the general population across all socioeconomic groups. The findings are based on self-report and available medical reports. The findings should be used with caution and reporting bias cannot be ruled out.

CONFLICTS OF INTEREST: The authors declare no conflict of interest

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