

“Analysis of Status and Perception of Diabetic and Hypertension Patients during COVID-19 Pandemic.”

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Keywords

Corona virus, pandemic, perception, lockdown, diabetes and hypertension.

Abstract

Background: COVID-19 is transmitted from person to person and causes mild and lethal diseases in diabetic and hypertension patients, comparatively and takes about fourteen days to onset. In initial days of outbreak, deaths are due to comorbidities like diabetes, hypertension and other non-communicable diseases. Threat of a serious explosion due to lack of facilities for disinfection and treatments for diabetic and hypertension patients. It is important to assess perception of hypertension, diabetic and hypertension with diabetic patients, in identifying gaps and strengthening ongoing prevention and treatment efforts.

Objective: To analyse the status and perception of diabetic and hypertension patients during COVID-19 pandemic.

Material and Method: Data based study, in which cross-sectional survey is conducted from January, 1st 2020 onward, during COVID-19, from rural areas of Himachal Pradesh by well-developed questionnaire from diabetic and hypertension patients, responses are collected, recorded and consolidated detail is prepared.

Results: Total responses received during investigations are 5498 from the total population 29858. Males=47.82%, females= 52.18%. Normal persons = 82.78% and diabetes, hypertension and diabetes with hypertension patients =17.22%, maximum normal persons in age group 41-60 whereas diseased are in age group 61-80 and minimum normal as well as diseased, in age group 81-100. 74.60% people have knowledge about COVID-19, 18.93% have no knowledge and 6.47% have no-opinion. 79.60% have positive attitude whereas 15.86% have negative attitude and 4.54% have no opinion. The perception of respondents during complete lockdown, regarding COVID-19 is 83.75% positive, 13.38% negative and 2.87% have no-opinion and perception after lockdown is 74.38% positive, 18.62% negative and 7.00% have no-opinion.

Conclusion: WHO declared COVID-19 as public health emergency which causes morbidity and mortality in patients of DM, HTN and DM with HTN. These patients have enough knowledge, positive attitude about COVID-19 and have positive perception during and after lockdown in COVID-19 pandemic.

Introduction

COVID-19 has reported first in December 2019 in China's Wuhan City.¹ It causes respiratory diseases, body pain, fever, pain in throat etc. Majority are without symptoms but some suffer with serious illness and lead to mortality especially in comorbidities like diabetic and hypertension patients. It spreads through droplets and takes about

fourteen days to onset from exposure. Corona virus can survive in aerosols for three hours and for last three days on hard surfaces.² Its first case has identified with SARS-CoV-2 biological samples, in December 2019 from market of Wuhan City which has led to lockdown from 1st January 2020.³ SARS killed 800 people in 2002 whereas MERS-CoV killed 860 people in 2012 but human corona virus

Journal of Coastal Life Medicine

has become global outbreak therefore World Health Organization [WHO] declared it as pandemic and Public Emergency of International Concern on January 30, 2020.^{4,5} WHO named this disease as COVID-19 on dated 11st February 2020.^{6,7} The infections caused by SARS-CoV-2 are closely related to bat coronaviruses,⁸ pangolin coronaviruses,^{9,10} and SARS-CoV.¹¹ In first week of March, hundred countries are affected of COVID-19, with over ten million cases. Health care officials have already begun awareness and preparatory work around the world. Lack of proper understanding of the disease, in general population, delays treatment and spreads the infection rapidly¹² COVID-19 affected about 18.5% to extreme severity stage of respiratory with other problems, in China.¹³ A student travelled from Wuhan China was identified as first COVID-19 case in India on January 30, 2020, who was successfully recovered on February 14, 2020.¹⁴ The country's authorities identified hotspot for the COVID-19 infection in early April 2020. In rural areas and high mobile population in some states of India faces serious challenges in maintaining social distance and sanitization by normal as well as diabetic and hypertension patients. Initial 3-weeks lockdown is announced on dated March 24, 2020 which has been extended to 3rd May which poses further challenges to the COVID-19 suffering population. It ensures that the guidelines are strictly adhered to maintain social distance. The information regarding COVID-19 is provided to public through different channels and Aarogya-Setu app. Public hygiene practices such as personal hygiene and hand washing and maintaining social distance are needed to prevent the spread of corona virus, but these consequences are challenging in many rural areas. They can create super-spread events that speed up the transmission without constantly banning large gatherings.¹⁵ The false information regarding COVID-19, confused and mislead people which was dangerous.¹⁶ Indian Ayurveda is most ancient practice of traditional medicines used for diabetes and hypertension which should be 120/80 mmHg.[22, 23] COVID-19 can be prevented from spreading by providing right information and advice from government agencies.¹⁷ The success or failure of preventing efforts depends upon behaviour and adherence to preventive measures by Public. The perception of diabetic and hypertension

patients can be assessed about their awareness and knowledge It is important to assess knowledge of these patients in gaps identification and prevention efforts strengthening.¹⁸ The complementary alternative medicine system is used for diabetes and hypertension in COVID-19 by about 15 countries and its prevalence is ranged from 9.8% to 76%.^{19,20} Complementary and alternative healthcare and medical practices may be grouped within five major domains like mind body interventions, biologically-based treatments, alternative medical systems, manipulative and body-based methods and energy therapies.²¹ Normal people and patients diabetes and hypertension, need to take preventive measures to control the spread of this virus, which is affected by their perception. Therefore a survey is conducted to judge the perception towards COVID-19, of normal people and diabetic and hypertension patients among the rural population of Himachal Pradesh in COVID-19 outbreak. COVID-19 vary in mortality and morbidity rates.^{22, 23} COVID-19 causes mild and lethal diseases in diabetic and hypertension patients comparatively. In initial days of outbreak, the deaths are due to comorbidities like diabetes, hypertension and other non-communicable diseases. IDSP analysis of India, shows comorbidities deaths are more than 57% whereas less than 43% are normal deaths whereas comorbidity deaths in Himachal Pradesh are more than 85%.²⁴ Serious threats mortality and morbidity of older adults with diabetic and hypertension with viral infections of COVID-19 is increased much more.²⁵ Non-conventional therapies like dietary supplements, yoga, acupuncture, hydrotherapies and many traditional medicines derived from plants, minerals and organic matters which are scientifically validated, are beneficial for diabetes and hypertension.^{26,27}

Objective:

To analyse the status and perception of diabetic and hypertension patients during COVID-19 pandemic.

Material and Method:

This is data based study in which cross-sectional survey is conducted from January, 1st 2020 onward, during COVID-19, from rural areas as well as some other places of Himachal Pradesh. A well-developed questionnaire is asked personally at institutional levels during investigation of blood

Journal of Coastal Life Medicine

sugar and blood pressure, telephonically, through what's app of diabetes and hypertension patients, by following the government's advisory for COVID-19, responses are collected, recorded and consolidated detail is prepared.

Result and Discussion:

Total responses collected are 5498 from the population of 29858, out of which males are 2629 (47.82%), female are 2869(52.18%). Normal persons are 4551 (82.78%) (Males = 2629 Females =2869) and diabetes and hypertension patients are 947 (17.22%) (Males =410, Females = 537). The age groups 20-40, 29.03% are normal whereas 0.69% are diseased with DM, HTN and DM with HTN, in 41-60, 30.70% are normal whereas 7.46% are diseased, 61-80 are 22.01% are normal whereas 8.58% are diseased and 81-100, 1.04% are normal whereas 0.49% are diseased. Married persons are 77.19% as normal whereas 15.62% are diseased, unmarried are 4.66% as normal and 1.02% are diseased, and others normal are 0.93% and 0.58% are diseased. Joint families are 47.04% as normal whereas 7.23% as diseased, nuclear families are 35.74% as normal whereas 9.99% as diseased. Working normal males are 16.86%, females are 7.35% whereas working diseased males are 3.40% and females are 1.16%. Non-working normal males are 23.50% and females are 35.07% whereas diseased non-working males are 4.06% and females are 8.60%. Respondents percept information regarding COVID-19 from TV media (54.17% as normal and 11.53% diseased), Newspapers (6.39% as normal and 1.22% as diseased) friends/relatives (3.27% as normal and 0.53% as diseased), mobile phones (18.04% as normal and 3.65% as diseased) and any other sources (0.91% as normal and 0.29% as diseased) (Table-1 and Figure 1, 2). 74.60% DM, HTN and DM with HTN patients have knowledge about COVID-19, its causes, symptoms, impacts on comorbidities, about its mortality and morbidity and its investigation tests whereas 18.93% have no knowledge about these and 6.47% have no opinions.(Table-2 and Figure-3) 79.60% patients have positive attitude towards the knowledge of spreading, controlling, prevention of COVID-19 and the use of proper medications for comorbidities during this pandemic whereas 15.86% have negative attitude and 4.54% have no opinions.(Table-3 and Figure-4) During complete

lockdown, 83.75% DM, HTN and DM with HTN patients restricted their self at home level, avoid handshaking, hugging and kissing used facial masks and done their investigations for blood sugar and blood pressure timely by following the government's guideline for COVID-19 whereas 13.38% of the patients have not followed these guideline properly and 2.87% of the patients have not given any opinion.(Table-4 and Figure-5) After complete lockdown, 74.38% DM,HTN and DM with HTN patients have worn masks in crowded places, outside from homes, sanitised their hands as per requirement, changed their clothes before entering in home from outside crowded places, hospitals, markets etc, avoided to consume outdoor foods and also have knowledge about the effectiveness of lockdown in controlling COVID-19 pandemic. They know about the role of antibiotics in COVID-19 disease and have done their investigations of blood sugar and blood pressure whereas 18.62% have no proper knowledge and 7.00% have no opinions (Table-5 and Figure-6).

Conclusion:

WHO declared COVID-19 as public health emergency which causes morbidity and mortality in patients of DM, HTN and DM with HTN. These patients have enough knowledge, positive attitude about COVID-19 and have positive perception during and after lockdown in COVID-19 pandemic. The data collected by the well-organized questionnaire of 5498 individuals after doing investigations out of these 82.78% are normal whereas 17.22% are DM, HTN and DM with HTN patients. Normal males are 2219 (40.36%) and diseased males with DM, HTN and DM with HTN. Maximum normal persons are in age group 41-60(38.16%) and maximum diseased are in age group 61-80(5.58%) whereas minimum in age group 81-100. More population in the rural areas, live in joint families as compare to nuclear families. Maximum respondents have got information from TV/media as compare to other sources. Diabetic, hypertension and diabetic and hypertension patients have enough knowledge, positive attitude about COVID-19 and have positive perception during and after lockdown in COVID-19 pandemic.

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Journal of Coastal Life Medicine

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Table: 1 Statistical Sources:

Total Responses Received during Investigations : 5498									
Total Population Covered : 29858									
1.	Total Gender-wise	A	Male			2629	(47.82%)		
		B	Female			2869	(52.18%)		
2.	Diabetes (DM) and Hypertension (HTN) Status:	A	Normal	4551 (82.78%)	Males = 2219 (40.36%)				
					Females = 2332 (42.42%)				
		B	DM, HTN and DM & HTN Patients	947 (17.22%)	Males = 410 (7.46%)				
						Females = 537 (9.76%)			
S.No	Particulars	Age in years	Total	%age	Normal	%age	DM, HTN & DM & HTN	%age	
3.	Age Groups	I	20-40	1634	29.72	1596	29.03	38	0.69
		ii	41-60	2098	38.16	1688	30.70	410	7.46
		iii	61-80	1682	30.59	1210	22.01	472	8.58
		iv	81-100	84	01.53	57	01.04	27	0.49

Status of the Individuals:	S. No.	Particulars	Normal Individuals	%age	DM. HTN and DM with HTN	Percentage
	A	Married	4244	77.19	859	15.62

Journal of Coastal Life Medicine

4.	Married Status:	B	Unmarried	256	4.66	56	1.02	
		C	Others	51	0.93	32	0.58	
		S. No.	Particulars	Normal Individuals	%age	DM. HTN and DM with HTN	%age	
5.	Work Status	Males	i	Working	927	16.86	187	3.40
			ii	Non-working	1292	23.50	223	4.06
		Females	iii	Working	404	7.35	64	1.16
			iv	Non-working	1928	35.07	473	8.60
		S. No.	Particulars	Normal Individuals	%age	DM. HTN and DM with HTN	%age	
6.	Family Status:	A	Joint Family	2586	47.04	398	7.23	
		B	Nuclear family	1965	35.74	549	9.99	
		S. No.	Particulars	Normal Individuals	%age	DM. HTN and DM with HTN	%age	
7.	Source of Information about COVID-19	I	TV/Media	2978	54.17	634	11.53	
		II	Newspaper	351	6.39	67	1.22	
		III	Friends/Relative	180	3.27	29	0.53	
		IV	Mobiles phones	992	18.04	201	3.65	
		V	Any other source	50	0.91	16	0.29	

Table : 2 Perception of Knowledge of DM, HTN and HTN with DM Patients for COVID-19:

S.No.	Particulars of Questionnaire	Options in %age		
		Yes in%	No in %	I don't know in %
1.	Do you know about viral infections, COVID-19?	93.3	6.7	0
2.	COVID-19 is an infectious disease caused by coronavirus.	90.6	2.8	6.6
3.	Fever, fatigue, dry cough, flu, shortness of breath, trouble breathing are symptoms of COVID-19 which are more dangerous for DM, HTN and DM with HTN.	95.1	1	3.9
4.	Common cold, stuffy nose, runny nose, and sneezing are common in persons infected with the COVID-19 virus and are more common in DM, HTN and HTN with DM patients.	65.7	19.7	14.6
5.	Should the medication for DM, HTN and HTN with DM be continued during COVID-19?	85.7	12.6	1.7
6.	People in contact with a person infected with the COVID-19 virus should be isolated immediately at appropriate places.	96.8	1.2	2.0
7.	Corona virus is more prevalent in DM and HTN patients, in cities and towns than in rural areas.	85.9	10	4.1
8.	Is it only spread in DM and HTN patients?	3.2	92.9	3.9
9.	Is COVID-19 more dangerous for DM and HTN patients, which may cause mortality?	86.3	11.9	1.8
10.	What are the COVID-19 diagnostic tests? (RT-PCR/RAT)	43.4	30.5	26.1
Mean		74.60	18.93	6.47

Journal of Coastal Life Medicine

Table : 3 Perception of Attitude of DM, HTN and HTN with DM Patients for COVID-19:

S.No.	Particulars of Questionnaire	Options in %age		
		Yes	No	I don't know
1.	Do you agree that COVID-19 will finally be successfully controlled?	76.3	15.8	7.9
2.	Do you think it does not spread in rural areas in DM, HTN and HTN with DM patients?	47.6	46.9	5.5
3.	DM, HTN and HTN with DM patients with COVID-19 should not be given a negative stigma in society	86.9	10	3.1
4.	Health education can help prevent COVID-19 mortality especially in DM, HTN and HTN with DM patients.	96	1.2	2.8
5.	Have you taken your medications regularly during COVID-19 pandemic?	91.2	5.4	3.4
	Mean	79.60	15.86	4.54

Table: 4 Perception of DM. HTN and HTN with DM Patients during complete lock down:

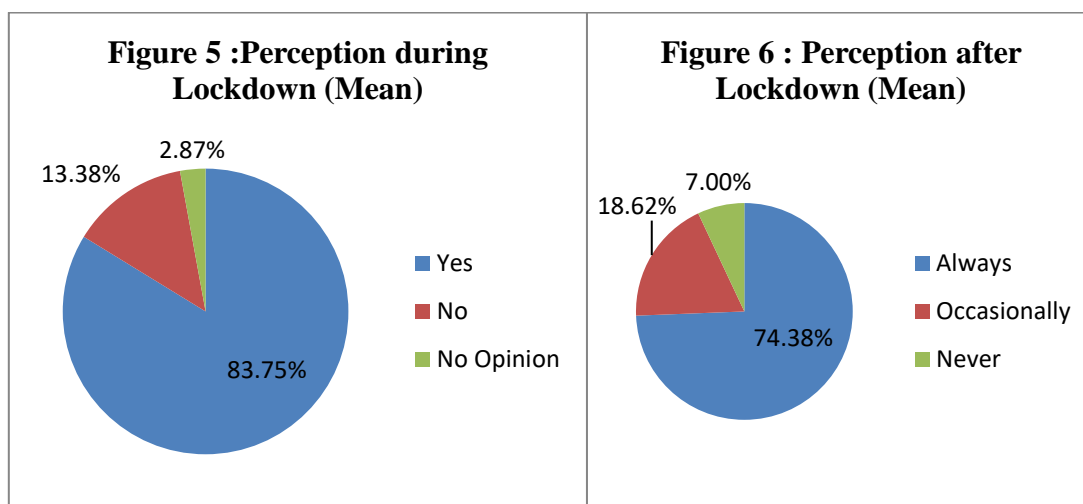
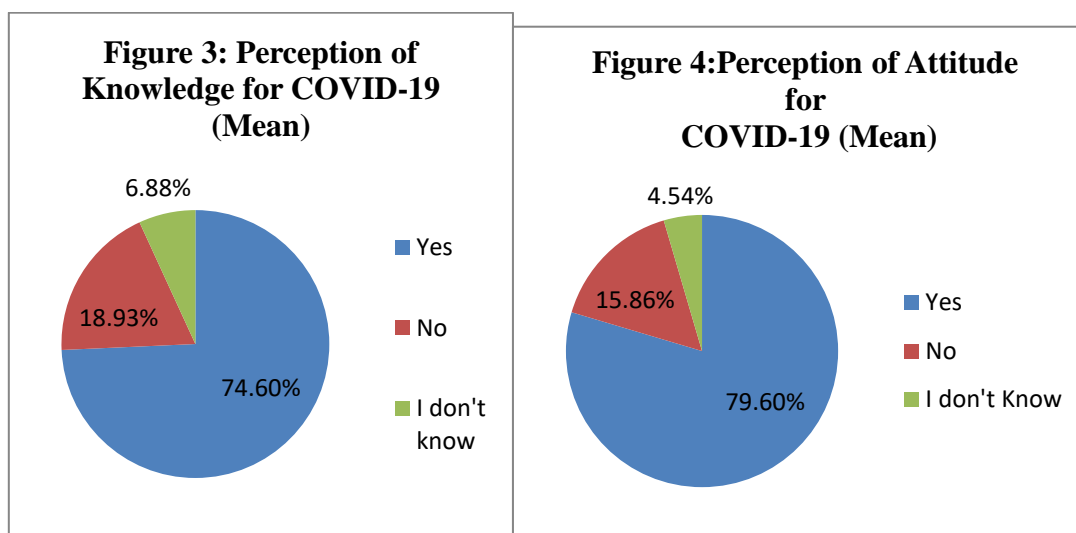
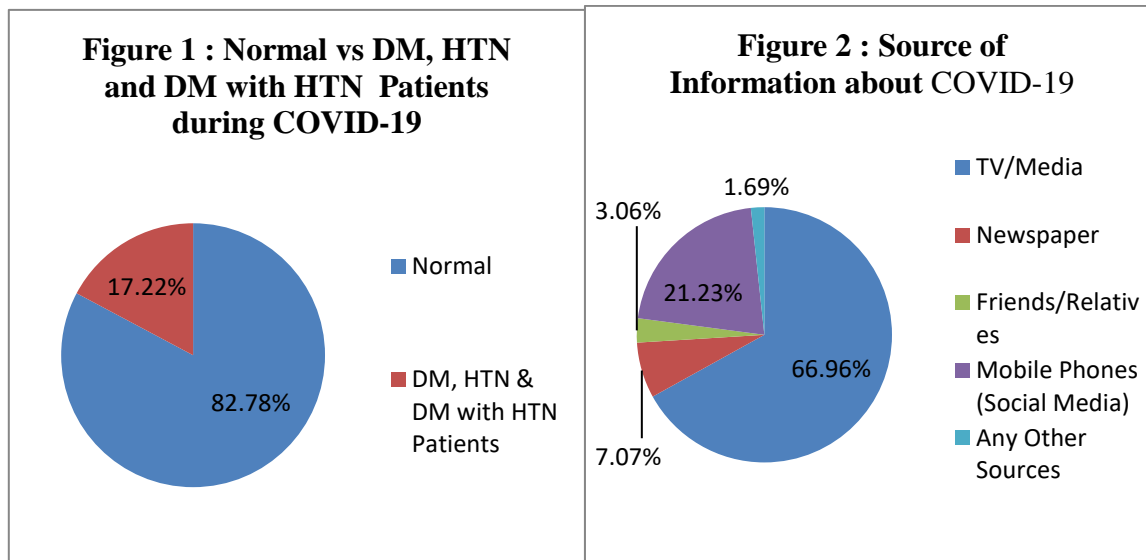
S.No.	Particulars of Questionnaire	Options in %age		
		Yes	No	No Opinion
1.	I avoid going out of my home being a DM/HTN/HTN with DM patient.	89.5	7.3	3.2
2.	In order to prevent contracting and spreading COVID-19, do you avoid handshaking, hugging and kissing being a DM/HTN/HTN with DM patient?	92	5.9	2.1
3.	In order to prevent contracting and spreading COVID-19, do you use facial masks?	95.1	3.8	1.1
4.	Do you have your investigations and medicines for Blood pressure and blood sugar level, well in time, as per requirement?	58.4	36.5	5.1
	Mean	83.75	13.38	2.87

Table: 5 Perception of DM. HTN and HTN with DM Patients after lock down

S.No.	Particular	Options in %age		
		Always	Occasionally	Never
1.	In the last few days, have you worn a mask, used hand sanitizer and change your clothes before entering in home, when you were hospital for your check-up and in a crowded places?	89.2	9.6	1.2
2.	In order to prevent contracting and spreading COVID-19 to DM/HTN/DM with HTN patient, I avoid consuming outdoor food	76.3	15.8	7.9
3.	Lockdown entire nation was effective step of government to avoid the mortality in DM/HTN/DM with HTN patients.	78.7	16.5	4.8
4.	Do you believe antibiotics are currently effective in preventing or treating COVID-19 in DM/HTN/DM with HTN patients?	55.4	25.8	18.8
5.	Do you have your investigations and medicines for	72.3	25.4	2.3

Journal of Coastal Life Medicine

	Blood pressure and blood sugar level?			
	Mean	74.38	18.62	7.00



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