

Analysis of Demographics and Knowledge Towards Covid-19 In Kaimur District, Bihar.

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ABSTRACT

Purpose: This research aims to present a more complete picture of COVID-19 dynamics among women in Kaimur district by investigating the intersection of demographics and knowledge towards COVID-19. It aims to inform focused public health strategies towards creating awareness about the disease and its symptoms.

Design/Methodology/Approach: This research is based on the data available from conducting a survey through a schedule of 660 women respondents. Demographic information and knowledge of women respondents (aged 18 to 45 years) towards COVID-19 was examined through knowledge scores (categorised into low, medium and high). The mean scores of 60 respondents from each community development block of Kaimur district was categorised under low, medium and high which showed the spatial pattern of knowledge scores in the study area. Cross tables and percentage depicts the interplay of demographics and knowledge towards COVID-19.

Findings: The findings show intricate interactions between demographics and knowledge among women respondents in response to COVID-19. Socioeconomic status, educational background, and spiritual beliefs all have a substantial impact on perceptions, moulding varied attitudes and behaviours and giving crucial insights for focused public health efforts.

Conclusion: Finally, this study sheds light on the intricate interplay of demographics and knowledge towards COVID-19. These thorough understanding guides focused public health initiatives that promote adaptability and resilience in India's complex socio-cultural milieu.

Keywords: COVID-19, Demographics, Knowledge, COVID-19

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INTRODUCTION

Originating from SARS-CoV-2, the new coronavirus surfaced in late 2019 and swiftly spread around the planet, having a significant effect on communities all over the world [1,2]. This virus, which causes respiratory symptoms, can range from mild to severe, spreads quickly, posing a challenge to healthcare systems and requiring exceptional public health precautions. As a result of the virus's primary mode of transmission being respiratory droplets, mask use, social distancing, and vaccine campaigns have become widely accepted preventive measures [3]. Beyond just health, COVID-19 impacts daily lives, economy, and education [4]. To stop the virus's spread, lockdowns and travel restrictions became frequent, changing communication and work habits. The scientific community came together to create vaccinations as a means of prevention and control. The pandemic brought to light the value of international cooperation, public health infrastructure, and personal accountability in addressing the threats posed by newly emerging infectious illnesses [5]. Future pandemic preparedness and response plans are being shaped by COVID-19 learning experiences experience, even as globe struggles to contain the virus.

Like many other countries, India encountered tremendous difficulties in fight against the pandemic COVID-19 [6]. Infections spread across the nation in waves, with spikes taxing the resources and systems of healthcare [7]. To stop the virus's spread, the government implemented travel bans, lockdowns around the country, and vaccine drives. India's heterogeneous population and varied urban-rural landscape made containment more difficult. The pandemic brought to light problems with the provision of vaccines, inequalities in the healthcare system, and the significance of public awareness [8]. The focus shifted to initiatives to increase diagnosis and treatment capacity, encourage behaviour that is

appropriate for the COVID-19 virus, and expedite vaccination rates. The country saw people come together as the government, healthcare professionals, and communities worked to lessen the effects [9, 10]. India's COVID-19 experience is helping to shape health crisis plans by highlighting the importance of readiness, fair access to healthcare, and international collaboration in combating new infectious illnesses.

A comprehensive examination of the knowledge towards COVID-19 and demographics provides a complex picture of the dynamics of public health. Knowledge about a disease, its symptoms, preventive measures and cure is a preliminary aspect which helps in coping with the effects of the spread of any disease. Age and socioeconomic status are two examples of demographic characteristics that [11] when combined with information about knowledge, attitudes, and daily behaviours, shed light on the complex interactions that affect health outcomes. Knowledge is influenced by the socioeconomic status which in turn would influence attitude and practice or behaviour towards any disease. It is an essential starting point for creating a society that is knowledgeable and resilient, particularly in light of current health crises for example COVID-19 outbreak [12].

OBJECTIVES

1. To evaluate the knowledge of COVID-19 symptoms, transmission, immunization and preventive measures among women respondents in the study area.
2. To assess the knowledge scores of the respondents according to demographic characteristics.

RESEARCH METHODOLOGY

This study's examination includes a sizable cohort of participants, totalling 660 respondents who have willingly supplied their thoughts and data. The study covered all 11 blocks (Ramgarh, Nuaon, Durgawati, Chainpur, Bhabua, Bhagwanpur, Kudra, Mohania, Chand, Rampur and Adhaura) of the Kaimur District. For the study total of 660 women respondents (aged 18-45 years) were surveyed with a schedule having questions about their knowledge about COVID-19 and their socio-economic characteristics. The respondents were chosen randomly. The schedule had 18 questions pertaining to knowledge about symptoms, transmission, immunization and preventive measures of COVID-19. The answers provided by them were decoded and entered in SPSS 20 software for further analysis. Frequency tables pertaining to knowledge about COVID-19 and socioeconomic characteristics were prepared. Each question had options to be chosen, out of which the correct answer was given a score of 1 and the incorrect answer was given a score of 0. The respondents who did not know the answer or did not respond were also given the score of 0. The total score each respondent got out of 18 was categorised as low, medium and high. The knowledge scores were assessed under demographics characteristics such as age, caste, religion, literacy and level of literacy through crosstabs and percentage of representation they have in different knowledge categories. The mean scores of 60 respondents from each community development block of Kaimur district was categorised under low, medium and high which showed the spatial pattern of knowledge scores in Kaimur district.

DATA ANALYSIS:

The data displays the socio-demographic features of a sample population with young demography and different socioeconomic backgrounds. It was found that 81.1% had the knowledge that they should avoid contacts or meet people which is the first step towards prevention of the disease. 78.8% of the respondents know that they should not be in contact with infected person and the 76.8% of the respondents know that the disease affects mostly those having weak immunity and 74.3% of them know that it can be easily transmitted from human to human. However, the questions regarding distance to be maintained between two people, overall symptoms and the incubation period had least knowledge levels of 14.3%, 21.6% and 31.9% respectively. Other questions related to the origin, cause, disposal of dead bodies and treatment showed that 30.2% to 62.7% had the correct knowledge.

Knowledge mean score:

The scores of correct (1) and incorrect and no response or no knowledge (0) answers of each respondent for all 18 questions were summed up to get total score. The scores for all 660 respondents were categorized into low, medium and high levels of knowledge. Knowledge mean among the blocks of Kaimur district ranges from 9.75 (Adhaura) to 12.15 (Bhabua). The mean scores were calculated from the scores of 60 respondents of each block. The mean scores were categorized into high (>12), medium (11 to 11.99) and low (< 10.99). Adhaura, Bhagwanpur, Rampur, Chand and Nuaon blocks had low mean scores. Ramgarh, Kudra, Mohania, Chainpur had medium mean scores. Durgawati and Bhabua blocks had high mean score of knowledge (Table 1).

Table 1: Community Development Blocks of Kaimur District and Knowledge Categories.

Knowledge Categories	Range	Sr. No. of CD Blocks	Community Development Blocks
Low	< 10.99	11,10,9,6,2	Adhaura, Bhagwanpur, Rampur, Chand, Nuaon
Medium	11 to 11.99	1,3,4,7	Ramgarh, Kudra, Mohania, Chainpur
High	>12	5,8	Durgawati, Bhabua

Source: Field survey, Kaimur district.

Demographic characteristics and knowledge score:

There are certain demographic characteristics under which knowledge categories have been studied. There is a diverse distribution of knowledge levels across different age groups (Table 2). High knowledge is prominent, particularly in the age-groups 20-30 years (41.56%) and 30-40 years (39.07%). The age group of less than 20 years has higher representation in medium knowledge compared to low or high knowledge. Among the religious groups of Hindus and non-Hindus, the former shows a more even distribution across knowledge categories with a higher count in each category compared to non-Hindus. Non-Hindus on the other hand have a lower overall count and show a skew towards low knowledge. Among Hindus 41.61 % of the respondents have high knowledge levels. Among the different caste types OBC has the larger representation in the dataset. Unreserved and OBC caste categories show a relatively even distribution across knowledge category indicating potential disparities in knowledge levels.

Table 2: Demographic characteristics and Knowledge Categories in Kaimur District

Demographic Characteristics			Knowledge Categories			Total
			Low	Medium	High	
Religion	Hindu	% within Religion	28.0%	30.4%	41.6%	100.0%
		% of Total	21.5%	23.3%	32.0%	76.8%
	Non Hindu	% within Religion	52.9%	32.7%	14.4%	100.0%
		% of Total	12.3%	7.6%	3.3%	23.2%
Caste	Unreserved	% within Caste	18.5%	32.3%	49.2%	100.0%
		% of Total	3.6%	6.4%	9.7%	19.7%
	OBC	% within Caste	35.7%	29.4%	34.9%	100.0%
		% of Total	19.8%	16.4%	19.4%	55.6%
	Scheduled Caste	% within Caste	40.3%	37.0%	22.7%	100.0%
		% of Total	7.3%	6.7%	4.1%	18.0%
	Scheduled Tribe	% within Caste	45.5%	22.7%	31.8%	100.0%
		% of Total	3.0%	1.5%	2.1%	6.7%
Age	< 20	% within Age	34.7%	44.9%	20.4%	100.0%
		% of Total	8.8%	11.4%	5.2%	25.3%
	20 - 30	% within Age	33.7%	24.7%	41.6%	100.0%
		% of Total	13.0%	9.5%	16.1%	38.6%
	30 - 40	% within Age	33.2%	27.7%	39.1%	100.0%
		% of Total	12.0%	10.0%	14.1%	36.1%
Literate or not	Yes	% within Literate or not	17.5%	34.4%	48.0%	100.0%
		% of Total	12.9%	25.3%	35.3%	73.5%
	No	% within Literate or not	78.9%	21.1%	0.0%	100.0%
		% of Total	20.9%	5.6%	0.0%	26.5%
Highest degree attained	Primary	% within Highest degree attained	34.2%	39.5%	26.3%	100.0%
		% of Total	7.9%	9.1%	6.1%	23.0%
	Secondary	% within Highest degree attained	15.0%	36.4%	48.6%	100.0%
		% of Total	5.0%	12.1%	16.2%	33.3%
	Higher Secondary	% within Highest degree attained	0.0%	8.1%	91.9%	100.0%
		% of Total	0.0%	1.1%	12.0%	13.0%
	Undergraduate	% within Highest degree attained	0.0%	100.0%	0.0%	100.0%
		% of Total	0.0%	2.7%	0.0%	2.7%
	Postgraduate	% within Highest degree attained	0.0%	22.2%	77.8%	100.0%
		% of Total	0.0%	.3%	1.1%	1.4%

Source: Field survey, Kaimur district.

Among the respondents of unreserved caste and OBC, 49.23% and 34.87% had high knowledge scores respectively. Among the literate respondents, 48.04% had high levels of knowledge score. Only 17.52% of the literate respondents had low knowledge scores. Among the illiterates (26.57%) respondents the knowledge score was found to be of low and medium scores. High knowledge score is most prevalent among the respondents with higher secondary and post graduate education levels. 33.33% of the respondents are educated up to secondary levels out of which 48.63% had high knowledge score.

Therefore, this comprehensive examination explores the intricate nature of COVID-19 dynamics within the respondents of Kaimur district, interweaving various aspects such as demographics and knowledge towards COVID-19 to form a cohesive narrative. It brings to light the nuanced influence of sociocultural factors on individuals' perceptions, with a particular emphasis on the role of demographics in shaping responses. The acquisition of knowledge emerges as a pivotal element, being influenced by diverse sources of information and subsequently reflected in attitudes towards preventive measures and vaccination. The research sheds light on the tangible expression of these dynamics in actual practices, thus providing valuable insights into the adoption of health measures. By encapsulating these interconnected elements, the analysis serves as an indispensable guide for targeted public health interventions, steering the trajectory towards effective strategies that resonate with the diverse socio-demographic landscape of India. Ultimately, it provides a thorough grasp of the complex facets of the epidemic in the Indian context, guiding future initiatives and building resilience.

CONCLUSION

The investigation discloses that socio-demographic variables, such as education, socio-economic status, and spiritual beliefs, exert a significant influence on individuals' perspectives and actions in the face of the virus. Furthermore, the impact of diverse sources of information on knowledge acquisition and its subsequent effect on attitudes and behaviours emerges as a crucial theme. The findings not only shed light on the wide range of understandings regarding COVID-19 but also uncover the complex factors that would contribute to the acceptance or hesitancy towards preventive measures and vaccination. This comprehensive understanding serves as a guide for targeted interventions in public health, acknowledging the necessity for strategies tailored to the specific context of a diverse country like India. As the landscape of the pandemic continues to evolve, these insights offer valuable guidance for policymakers, healthcare professionals, and public health initiatives, promoting adaptability and resilience.

REFERENCES

- [1]. Acter, T., Uddin, N., Das, J., Akhter, A., Choudhury, T.R. and Kim, S., 2020. Evolution of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) as coronavirus disease 2019 (COVID-19) pandemic: A global health emergency. *Science of the Total Environment*, 730, p.138996.
- [2]. Pal, M., Berhanu, G., Desalegn, C. and Kandi, V., 2020. Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2): an update. *Cureus*, 12(3).
- [3]. Sanz-Muñoz, I., Tamames-Gómez, S., Castrodeza-Sanz, J., Eiros-Bouza, J.M. and de Lejarazu-Leonardo, R.O., 2021. Social distancing, lockdown and the wide use of mask; a magic solution or a double-edged sword for respiratory viruses epidemiology?. *Vaccines*, 9(6), p.595.
- [4]. Kumar, V., Alshazly, H., Idris, S.A. and Bourouis, S., 2021. Evaluating the impact of covid-19 on society, environment, economy, and education. *Sustainability*, 13(24), p.13642.
- [5]. Jit, M., Ananthakrishnan, A., McKee, M., Wouters, O.J., Beutels, P. and Teerawattananon, Y., 2021. Multi-country collaboration in responding to global infectious disease threats: lessons for Europe from the COVID-19 pandemic. *The Lancet Regional Health–Europe*, 9.
- [6]. Ghosh, A., Nundy, S. and Mallick, T.K., 2020. How India is dealing with COVID-19 pandemic. *Sensors International*, 1, p.100021.
- [7]. Bontempi, E., 2021. The Europe second wave of COVID-19 infection and the Italy “strange” situation. *Environmental Research*, 193, p.110476.
- [8]. Schoch-Spana, M., Brunson, E.K., Long, R., Ruth, A., Ravi, S.J., Trotochaud, M., Borio, L., Brewer, J., Buccina, J., Connell, N. and Hall, L.L., 2021. The public’s role in COVID-19 vaccination: Human-centered recommendations to enhance pandemic vaccine awareness, access, and acceptance in the United States. *Vaccine*, 39(40), pp.6004-6012.
- [9]. Søvdal, L.E., Naslund, J.A., Kousoulis, A.A., Saxena, S., Qoronfle, M.W., Grobler, C. and Münter, L., 2021. Prioritizing the mental health and well-being of healthcare workers: an urgent global public health priority. *Frontiers in public health*, 9, p.679397.
- [10]. Stuijzand, S., Deforges, C., Sandoz, V., Sajin, C.T., Jaques, C., Elmers, J. and Horsch, A., 2020. Psychological impact of an epidemic/pandemic on the mental health of healthcare professionals: a rapid review. *BMC public health*, 20, pp.1-18.
- [11]. Hawkins, R.B., Charles, E.J. and Mehaffey, J.H., 2020. Socio-economic status and COVID-19–related cases and fatalities. *Public health*, 189, pp.129-134.
- [12]. Sakurai, M. and Chughtai, H., 2020. Resilience against crises: COVID-19 and lessons from natural disasters. *European Journal of Information Systems*, 29(5), pp.585-594.