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RESEARCH ARTICLE

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KNOWLEDGE, ATTITUDE, PRACTICES, AND BEHAVIOR REGARDING COVID-19 WASTE MANAGEMENT DURING HOME ISOLATION PERIOD AMONGST CHANDIGARH RESIDENTS: A MAJOR PUBLIC HEALTH CONCERN AMIDST THE PANDEMIC

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ABSTRACT

Background: Proper biomedical waste (BMW) management was one of the significant challenges in developing countries like India even before COVID-19, and now it has augmented. With the advent of a new home quarantine/isolation facility, the chances of general waste getting contaminated with COVID-19 infectious waste has elevated significantly. Patients treated at home generate infectious waste, thoughtlessly discarded as household (domestic) waste. Depending on the collection, transport, and disposal practices and norms puts waste collectors and the environment at much greater risk. **Methods:** This study evaluated the KAPB (Knowledge, Attitude, Practice, and behavior) of residents who dealt with COVID-19 infectious waste and its management during the home-isolation period in Chandigarh, India. A community-based cross-sectional survey was conducted from 20 May 2021 to 30 June 2021, using an online self-designed questionnaire by simple random sampling. Data were analyzed by using the statistical software IBM SPSS version 28. **Results:** Among the eligible respondents (n=198), 56% were male, and 44% were females, of which 38.4% were of the age group 25-34 years and were graduates (56.1%). Most respondents (58.1%) were unmarried and belonged to a nuclear family (68.2%). Participants of Age-Group 18-34 years had higher knowledge about COVID-19. A high prevalence of correct knowledge about COVID-19 waste and its management was observed among respondents concerning Gender (p = 0.005), Current Marital Status (p = 0.0001), and level of Education (p = 0.005). Over 80% of respondents exhibited a positive attitude toward COVID-19 Waste management during Home-Isolation. Gender (p = 0.001), Age-group (p = 0.049), and Level of Education (p = 0.013) were found to be significantly and positively associated with all the practices followed. **Conclusion:** The findings of this study demonstrated that Chandigarh residents had sufficient knowledge, showed a positive attitude and behavior, and followed appropriate COVID-19 Waste Management practices. Individuals with a higher educational level demonstrated a positive attitude. Combative, continuous, and relevant information, Education, and communication are the need of the hour, with structured and programmed interventions for complete knowledge of COVID-19 waste management during the pandemic. Emphasis should be on the introduction of environment-friendly technologies. The capacity building of waste handlers is another concern to be prioritized for the safe collection, treatment, and disposal of Infectious waste.

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INTRODUCTION

The entire globe faces an unprecedented disaster by a minute 60 -140 nm particle, known as SARS- CoV-2 virus. The pandemic caused by this virus has raised health and economic concerns in all facets of society. It is reported that there have been 167,544,655 confirmed cases of COVID-19 across 215 countries of the globe, including 3,478,959 confirmed death cases as of 24 May 2021. [1] The World Health Organization announced the outbreak a Public Health Emergency of International concern on 30 January 2020 and a pandemic on 11 March 2020. [2] In India, the first case of COVID -19 was reported in the Kerala state, then after this deadly virus has

inevitably spread in every part of the country. The possibility to cause dangerous respiratory disappointment and rapid transmission put COVID-19 on the Public Health Emergency of International Concern (PHEIC) priority list. According to the current evidence, the chief route of human-to-human transmission is via respiratory droplets. The secondary transmission route is through 'Indirect contacts,' i.e., indirect hand contact with the contaminated surfaces by infected droplets afterward touching the mouth, nose, or/and eyes. [3]

Covid- 19 Related Waste Scenario

In India: Proper biomedical waste (BMW) management was one of the vital challenges in developing countries like India even before COVID-19, and now it has augmented. India ranks second among the

COVID positive cases worldwide, which results in an immeasurable hike in infectious waste generation and expects to increase more as cases arise. With the advent of a new home quarantine/isolation facility, the chances of general waste getting contaminated with COVID- infectious waste has elevated significantly. [4] Patients treated at home are generating infectious waste, thoughtlessly discarded as household (domestic) waste, which puts waste collectors and the environment at much greater risk, depending upon the practices and norms followed for its collection, transport, and disposal. Although India already had Bio-Medical Waste Management Rules, 2016, the CPCB released guidelines to ensure that the waste explicitly generated during testing of people and treatment of COVID-19 patients is disposed of scientifically. As per a report released by CPCB in the National Green Tribunal in July 2020, India generates about 101 Metric Tons (MT) per day of COVID-19 contaminated bio-medical waste. In addition to the regular bio-medical waste generation, this quantity is about 609 MT per day. The report also states that the maximum capacity for incineration of COVID-19 biomedical waste in India is about 840 MT, contrary to the total generation of about 710 MT per day. [5] With the commencement of the year 2021, the generation of COVID-19 related bio-medical waste spiked exponentially in the country, as the average generation shot up from 75 tons per day in March 2021 to 203 tons per day in May 2021 following the sudden hike in pandemic cases, according to estimates by CPCB.

In Chandigarh: The first case of the COVID- 19 pandemic was recorded in Chandigarh on 19 March 2020, and there have been 65,105 confirmed cases reported so far, including 714 confirmed death cases as of 31 August 2021. As for the COVID-19 related waste, the U.T. administration has submitted a report to the National Green Tribunal (NGB) and CPCB that, in May 2020, 39,837.1 kg waste was generated. With increasing positive cases of home isolation, Chandigarh Municipal Corporation collects 9 tons of COVID waste from residences of patients daily. [6]

Covid-19 Waste Management

Guidelines for handling, treatment, and disposal of waste generated during treatment/Diagnosis/Quarantine of COVID-19 waste: Though India already had 'Bio-Medical Waste Management Rules, 2016', CPCB has proposed adequate guidelines keeping in view the safety of waste handlers and a national level data management android app, namely- 'COVID19 BMW' for efficient management of COVID-19 Bio-medical waste. [7]

Initiatives taken by Chandigarh administration for covid-19 waste

Guidelines for handling, treatment, and disposal of COVID-19 waste: Create a separate team of workers who engage in the door-step waste collection at waste deposition centers, quarantine homes, or home care. Establish common waste deposition centers (as stipulated under SWM Rules, 2016) for receiving/collecting biomedical waste and, for this purpose, existing Dhalaos, if any, maybe converted suitably. Training should be for sanitization, the collection of COVID-19 waste, preventive measures to handle it. Impart training to waste collectors handling COVID-19 waste, including training on sanitization methods. The staff involved in handling and collecting general solid waste and COVID-19 waste from quarantine homes or home care centers should be given adequate Personnel Protective Equipment such as three-layer masks, splash-proof aprons/gowns, heavy-duty gloves, gumboots, and safety goggles. Waste collectors arriving at quarantine centers or at-home care may spray the disinfectant (1% sodium hypochlorite solution) on the bin used for yellow bags.

MATERIALS AND METHODS

Study Area: Participants. The research was conducted among the residents of Chandigarh aged 18 years and above at the survey time. As participation was voluntary, 200 residents completed the online questionnaire.

Study Setting: study design and data collection. A community-based cross-sectional survey was conducted from 20 May 2021 to 30 June 2021 to examine Chandigarh residents' demographic characteristics and KAPB toward COVID-19 waste management during the home isolation period. Data was collected through an internet questionnaire with close-ended questions. The survey was conducted using a Google Form link shared on social networking sites, like WhatsApp and Facebook. Internet questionnaires constitute a methodological alternative in epidemiological data collection. This method is used because it was impossible to directly retrieve data during the COVID-19 pandemic.

Sampling Design: A Simple Random Sampling Design was adopted. The study involved the use of an online questionnaire with closed-ended questions.

Sample Size: The sample size was calculated using the formula: $n = (1.96)^2 p (1-p)/d^2$, assuming a prevalence of 50% appropriate knowledge and keeping a margin of error at 7% with a 95% confidence interval. The sample size came out to be 196. An additional 10% was added to the sample size to cater to the loss of information due to incomplete forms or no response due to non-submission, making the final sample size 216.

Study Tool: A self-administered, structured questionnaire was used as an instrument to collect the data. The online questionnaire included a total of 30 questions encompassing all domains such as demographics (8), knowledge (8), attitude (5), practices (5), and behavior (4). The submission of the form is taken as the consent of the participant. Once attempted through the link shared, the questionnaire could not be tried again, thus preventing duplication.

Statistical Analysis: Statistical analysis was performed using SPSS (version 28.0; IBM Corp.). Categorical variables are presented as the frequency and percentage (%). Bivariate analysis (Chi-square test) is performed to examine the relationship between demographic characteristics and KAPB of respondents. Statistical significance was indicated by $p < 0.05$.

RESULTS

A total of 200 questionnaires were collected, among which two were invalid, and as a result, 198 were finally enrolled for data analysis (effective response rate: 99%). Table 1 shows the descriptive statistics related to the socio-demographic characteristics of respondents.

Table 1. Socio-demographic characteristics of respondents (n=198)

	Frequency	Percentage (%)
Gender		
Male	111	56.1
Female	87	43.9
Age-Group (In Years)		
18-24	59	29.8
25-34	76	38.4
35-44	26	13.1
45-60	37	18.7
Current Marital Status		
Married	83	41.9
Unmarried	115	58.1
Level Of Education		
High School	17	8.6
Intermediate or Diploma	26	13.1
Graduate	111	56.1
Professional/Honors	44	22.2
Type Of Family		
Nuclear	135	68.2
Joint	61	30.8
Extended	2	1.0
Residential/Living Area		
Urban	172	86.9
Rural	25	12.6
Slum	1	.5

Table 2. Status of COVID-19 infection among Respondents at the time of Survey (n=198)

	Frequency	Percentage (%)
Are you tested positive for covid-19 presently?		
True	13	6.6
False	185	93.4
Did you have the covid-19 infection before?		
True	74	37.4
False	124	62.6
Do you have any covid-19 positive patient(s) in your home?		
True	53	26.8
False	145	73.2

Table 3. Demographic characteristics and Knowledge of respondents about COVID-19 (n=198)

Demographic Characteristics		IS THIS COVID-19 INFECTION CONTAGIOUS (SPREAD FROM ONE PERSON TO ANOTHER)?										Chi-Square	p-value
		Strongly Agree		Agree		Disagree		Strongly Disagree		Total			
Gender	Male	58	52.3%	48	43.2%	3	2.7%	2	1.8%	111	100.0%	6.441	0.092
	Female	59	67.8%	25	28.7%	3	3.4%	0	0.0%	87	100.0%		
Age-Group (in years)	18-24	39	66.1%	16	27.1%	3	5.1%	1	1.7%	59	100.0%	13.884	0.127
	25-34	47	61.8%	26	34.2%	3	3.9%	0	0.0%	76	100.0%		
	35-44	10	38.5%	16	61.5%	0	0.0%	0	0.0%	26	100.0%		
	45-60	21	56.8%	15	40.5%	0	0.0%	1	2.7%	37	100.0%		
Current Marital Status	Married	45	54.2%	35	42.2%	2	2.4%	1	1.2%	83	100.0%	1.899	0.594
	Unmarried	72	62.6%	38	33.0%	4	3.5%	1	.9%	115	100.0%		
Level of Education	High School	11	64.7%	4	23.5%	2	11.8%	0	0.0%	17	100.0%	17.940	.036*
	Intermediate or Diploma	11	42.3%	13	50.0%	1	3.8%	1	3.8%	26	100.0%		
	Graduate	61	55.0%	47	42.3%	2	1.8%	1	.9%	111	100.0%		
	Professional/ Honors	34	77.3%	9	20.5%	1	2.3%	0	0.0%	44	100.0%		
	Total	117	59.1%	73	36.9%	6	3.0%	2	1.0%	198	100.0%		

		A PERSON WHO HAS 'NO SYMPTOMS OF COVID-19' IS NOT A RISK TO OTHERS?								Chi-Square	p-value
		Agree		Undecided		Disagree		Total			
Gender	Male	17	15.3%	40	36.0%	54	48.6%	111	100.0%	3.300	.192
	Female	17	19.5%	21	24.1%	49	56.3%	87	100.0%		
Age group (in years)	18-24	12	20.3%	14	23.7%	33	55.9%	59	100.0%	12.048	.061
	25-34	6	7.9%	24	31.6%	46	60.5%	76	100.0%		
	35-44	6	23.1%	10	38.5%	10	38.5%	26	100.0%		
	45-60	10	27.0%	13	35.1%	14	37.8%	37	100.0%		
Current Marital status	Married	17	20.5%	33	39.8%	33	39.8%	83	100.0%	8.758	.013*
	Unmarried	17	14.8%	28	24.3%	70	60.9%	115	100.0%		
Level of Education	High School	5	29.4%	8	47.1%	4	23.5%	17	100.0%	10.121	.120
	Intermediate or Diploma	5	19.2%	10	38.5%	11	42.3%	26	100.0%		
	Graduate	19	17.1%	33	29.7%	59	53.2%	111	100.0%		
	Professional/ Honors	5	11.4%	10	22.7%	29	65.9%	44	100.0%		
	Total	34	17.2%	61	30.8%	103	52.0%	198	100.0%		

**p-value<0.01=highly significant, *p-value<0.05=significant and ^{ns} p-value=non-significant

Table 2 presents the percentages of respondents who selected each answer option for the questions on the status of COVID-19 infection at the time of the survey.

Knowledge, Attitude, Behavior, and Practices of Respondents: Table 3 shows the association between demographic characters and knowledge among the respondents. A Significant association is

observed concerning the level of Education ($p = 0.036$) and to Current Marital Status ($p = 0.013$), respectively. Table 4 shows the association between demographic characters and knowledge of COVID-19 Waste Management and guidelines for its disposal among respondents is shown. Significant association of knowledge is observed for Gender ($p = 0.005$), Current Marital Status ($p = 0.0001$) and level of Education ($p = 0.005$) and to Age-Group ($p = 0.004$) respectively.

Table 4. Demographic Characters and Knowledge about COVID-19 Waste Management and guidelines for its disposal among Respondents (n=198)

Demographic Characteristics		HAVE YOU HEARD ANYTHING ABOUT "COVID-19 WASTE MANAGEMENT" BEFORE?										Chi-Square	p-value
		Definitely		Probably		Undecided		Definitely Not		Total			
Gender	Male	27	24.3%	36	32.4%	33	29.7%	15	13.5%	111	100.0%	12.768	.005*
	Female	23	26.4%	33	37.9%	9	10.3%	22	25.3%	87	100.0%		
Age Group (in years)	18-24	15	25.4%	21	35.6%	7	11.9%	16	27.1%	59	100.0%	11.564	.239
	25-34	23	30.3%	27	35.5%	17	22.4%	9	11.8%	76	100.0%		
	35-44	7	26.9%	8	30.8%	7	26.9%	4	15.4%	26	100.0%		
	45-60	5	13.5%	13	35.1%	11	29.7%	8	21.6%	37	100.0%		
Current Marital Status	Married	17	20.5%	22	26.5%	31	37.3%	13	15.7%	83	100.0%	22.385	.0001**
	Unmarried	33	28.7%	47	40.9%	11	9.6%	24	20.9%	115	100.0%		
Level of Education	High School	2	11.8%	4	23.5%	4	23.5%	7	41.2%	17	100.0%	23.876	.005*
	Intermediate or Diploma	7	26.9%	8	30.8%	10	38.5%	1	3.8%	26	100.0%		
	Graduate	23	20.7%	45	40.5%	24	21.6%	19	17.1%	111	100.0%		
	Professional/ Honors	18	40.9%	12	27.3%	4	9.1%	10	22.7%	44	100.0%		
	Total	50	25.3%	69	34.8%	42	21.2%	37	18.7%	198	100.0%		

Demographic Characteristics		ARE THERE ANY GUIDELINES FOR COVID-19 WASTE DISPOSAL WHICH IS GENERATED BY PATIENTS IN HOME ISOLATION?										Chi-Square	p-value		
		Definitely		Probably		Undecided		Definitely Not		No idea				Total	
Gender	Male	49	44.1%	38	34.2%	0	0.0%	0	0.0%	24	21.6%	111	100%	7.596	0.055
	Female	33	37.9%	26	29.9%	0	0.0%	5	5.7%	23	26.4%	87	100%		
Age Group (in years)	18-24	25	42.4%	9	15.3%	0	0.0%	2	3.4%	23	39.0%	59	100%	24.552	.004*
	25-34	27	35.5%	37	48.7%	0	0.0%	1	1.3%	11	14.5%	76	100%		
	35-44	13	50.0%	8	30.8%	0	0.0%	0	0.0%	5	19.2%	26	100%		
	45-60	17	45.9%	10	27.0%	0	0.0%	2	5.4%	8	21.6%	37	100%		
Current Marital Status	Married	36	43.4%	26	31.3%	0	0.0%	2	2.4%	19	22.9%	83	100%	.227	0.973
	Unmarried	46	40.0%	38	33.0%	0	0.0%	3	2.6%	28	24.3%	115	100%		
Level of Education	High School	5	29.4%	4	23.5%	0	0.0%	2	11.8%	6	35.3%	17	100%	17.498	.041*
	Intermediate or Diploma	13	50.0%	7	26.9%	0	0.0%	0	0.0%	6	23.1%	26	100%		
	Graduate	40	36.0%	44	39.6%	0	0.0%	1	.9%	26	23.4%	111	100%		
	Professional/ Honors	24	54.5%	9	20.5%	0	0.0%	2	4.5%	9	20.5%	44	100%		
	Total	82	41.4%	64	32.3%	0	0.0%	5	2.5%	47	23.7%	198	100%		

**p-value<0.01=highly significant, *p-value<0.05=significant and ^{ns} p-value=non-significant

Table 5 presents the percentages of respondents who selected each answer option for the questions on attitude towards COVID-19 waste management. More than 80% of respondents exhibited a positive attitude toward COVID-19 Waste management during Home-Isolation. Table 6 shows the percentages of participants who selected each answer option for the questions on practices and behavior toward COVID-19 waste management.

Most participants followed appropriate practices for COVID-19 waste management during home isolation, such as avoid mixing, disposing of COVID-19 waste separately from house-hold waste, and to handling over the COVID-19 waste to authorized waste collectors rather than to the regular ones.

Table 5. Frequencies and percentages among each Attitude related question (n=198)

Do you believe waste generated by COVID -19 patients can cause infection to others in family?		
	FREQUENCY	PERCENTAGE (%)
Definitely	142	71.7
Probably	34	17.2
Undecided	20	10.1
Definitely Not	2	1.0
Do you believe that 'having the appropriate knowledge about the management of COVID- 19 waste disposal' is important?		
	FREQUENCY	PERCENTAGE (%)
Very Important	177	89.4
Slightly Important	6	3.0
Undecided	14	7.1
Not Important	1	.5
Do you think COVID-19 waste should be disposed (thrown) separately from other house-hold waste?		
	FREQUENCY	PERCENTAGE (%)
Definitely	164	82.8
Probably	16	8.1
Undecided	16	8.1
Definitely Not	2	1.0

Table 6. Frequencies and percentages among each practice and behavior related question (n=198)

The waste generated by COVID positive person in your home is thrown separately?		
	FREQUENCY	PERCENTAGE (%)
Always	141	71.2
Rarely	3	1.5
Did not apply to me at all	49	24.7
Never	5	2.5
Do you mix COVID-19 related waste with other household/kitchen waste?		
	FREQUENCY	PERCENTAGE (%)
Always	7	3.5
Rarely	5	2.5
Did not apply to me at all	53	26.8
Never	133	67.2
Where do you throw the COVID-19 waste?		
	FREQUENCY	PERCENTAGE (%)
In dustbin directly	10	5.1
In garbage bag with other household waste	11	5.6
In the 'Special Waste Bag' (Yellow/Green colored) given to you	117	59.1
Did not apply to me at all	60	30.3
I handover the COVID waste to		
	FREQUENCY	PERCENTAGE (%)
Authorized waste collectors	106	53.5
Directly throw with my household waste in dumping yard myself	5	2.5
Garbage collectors just like before	21	10.6
Did not apply to me at all	66	33.3
How frequently COVID-19 waste is being collected by authorized waste collectors from your house?		
	FREQUENCY	PERCENTAGE (%)
Once a week	58	29.3
Twice a week	31	15.7
Once in 10 days	26	13.1
Did not apply to me at all	83	41.9

DISCUSSION

Coronavirus 2019 has brought calamitous effects since first detected in December 2019. It is a relatively new disease, and India has no prior experience managing an outbreak of this scale. Chandigarh has quarantined tens of thousands of people in their homes. The Chandigarh Administration Health Department and Municipal Corporation Chandigarh formed unique waste collection and disposal teams from quarantined households. The waste collected from said houses is sealed in garbage bags and transported by separated vehicles at the dumping site, wherein said garbage is being dumped in sprat deeply pits. The special PPE kits are provided to sanitation workers, and the houses are marked explicitly, with a poster for convenience.

Still, the overwhelmed communicability and pathogenicity of Coronavirus make it critical for health domain to incorporate and promote effective strategies to manage and educate the people regarding the appropriate management of COVID-19 waste generated by home quarantined positive patient(s) in Chandigarh. It is essential to obtain scientific evidence on the current status and factors influencing residents' KAPB to formulate effective measures. To the best of our knowledge, no study has analyzed a population's KAPB toward 'COVID-19 Waste Management during Home-Isolation Period', particularly in India. With limited literature available and no analysis regarding the topic concerned, this study is apparently the first in this domain. Since there was no measurement tool available when the survey was conducted, we designed an online questionnaire on Google form entitled and examined its reliability and validity to ensure the quality of the collected data.

Sociodemographic and Professional Characteristics of Respondents: The results of collected data analysis depict that out of 198 respondents, 111 (56%) respondents were male. The remaining 87 (44%) were females, out of which the maximum respondents were of age group 25-34 years (38.4%), 29.8% were aged 18-29 years, 18.7% were 45-60 years, and the remaining 13.1% respondents belonged to age group 35-44 years. The majority of respondents (58.1%) were unmarried, and 41.9% of respondents were married. As per for level of education and type of family, it is observed that the majority of respondents were graduates (56.1%), whereas 22.2% of respondents had done professional courses. 13.1% of respondents had an intermediate level of education or were diploma holders. The remaining 8.6 % of respondents were in high school, and the maximum number of respondents (68.2%) belonged to a nuclear family. Only 1% belonged to the category of extended family respectively.

Knowledge and Information Sources: Participants of Age-Group 18-34 years had higher knowledge about COVID-19. Women were found to have higher knowledge scores than men, possibly because they are responsible for caring for themselves and their family members, although the result was non-significant. Most participants who had a higher educational level have better knowledge regarding COVID-19, and this finding is also supported by a significant association ($p = 0.0036$). In addition, most of the male participants (50.5%) had COVID-19 infection before, possibly because of their work schedule and unavoidable outdoor visits, supported by the result, which came out to be significant. A high prevalence of correct knowledge about COVID-19 waste and its management among respondents who had professional education is observed via results.

Attitude: More than 80% of respondents exhibited a positive attitude toward COVID-19 Waste management during Home-Isolation. These results indicated that most people had an optimistic attitude that revealed a positive attitude and a sense of personal and communal responsibility, which are essential factors for appropriately managing and controlling the COVID-19 pandemic. Among demographic characteristics, marital status is significantly associated with the attitude towards COVID-19 Waste Management.

Practice and Behavior: This study revealed that most participants followed appropriate practices for COVID-19 waste management during home isolation, such as avoiding mixing, disposal of COVID-19 waste separately from household waste, and giving the COVID-19 waste to authorized waste collectors instead of the regular ones. Thus, our respondents appeared to be willing to follow good practices for managing COVID-19 waste. Gender, Age-group, and Level of Education are significantly and positively associated with the all the methods followed. Our findings are inconsistent with those who found that knowledge is necessary but insufficient in changing individual or collective behavior, thus indicating that the impetus to change practices does not come from knowledge alone.

CONCLUSION

As is evident from the current status of the pandemic, basic infection control practices are the only means for containment. Appropriate COVID-19 waste disposal and management are fundamental components of these control actions. This study demonstrated that Chandigarh residents had sufficient knowledge, showed a positive attitude and behavior, and followed the appropriate COVID-19 Waste Management practices. Individuals with a higher educational level demonstrated a positive attitude. Differences observed in practices followed by men and women concerning their knowledge. Adequate knowledge was related to the good practices followed. Gender, Age-group, and Level of Education are found significantly and positively associated with all the practices followed. Also, favorable attitudes are related to good practices. The knowledge and practices have been popularized to a certain extent. However, there are still deviations or deficiencies in residents' understanding of specific essential knowledge and the adoption of relevant practices for COVID-19

waste management during the home-isolation period. A high prevalence of correct knowledge about Infectious waste management is observed among respondents with a professional education background. Combative, continuous, and relevant information, education, and communication are the need of the hour, with structured and programmed interventions for complete knowledge of COVID-19 waste management during the pandemic. Emphasis should be on the introduction of environment-friendly technologies. The capacity building of waste-handlers is another concern to be prioritized for safe collection, treatment, and disposal of Infectious Waste.

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