

A study of rural domestic helpers knowledge, attitude, and practice of COVID-19 in Mizoram, India



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ABSTRACT

Background: In times of an epidemic such as coronavirus disease 2019 (COVID-19), the public's knowledge and attitude toward the disease affects the ability to abide to different preventive measures. **Aims and Objectives:** (1) to assess the knowledge and awareness of the domestic helpers in a tribal population, (2) whether the domestic helpers practice appropriate preventative measures that are recommended by WHO. **Materials and Methods:** This cross-sectional study was designed and carried out using questionnaire among rural domestic workers in Mizoram, above 14 years of age belonging to both Mizo and Non-Mizo ethnicity. Data were collected from 105 participants and analyzed through t-test, one-way analysis of variance and Pearson correlation analysis. **Results:** Majority of the respondents had higher secondary level of education (78.1%) and 95.2% could identify COVID-19 as a communicable disease. Almost all the participants (97.1%) were afraid of infection and the majority (92.4%) had fear of dying with the disease. Three-fourth of the participants were working during the pandemic of which 44.8% had volunteered. Media (68.6%) was the most common source of information about the disease. The education level was significantly associated with knowledge and attitude scores whereas there were no significant differences with respect to the practice ($P > 0.05$). **Conclusion:** Our findings indicate an overall good KAP of the rural domestic workers. Since these workers move from house to house and also take care of the vulnerable, and that they themselves and the families, they work for may be at an increased risk of infection with COVID-19, these findings are important from a health campaign perspective.

Key words: SARS-CoV-2; House maid; Education; Literacy

INTRODUCTION

Coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome (SARS)-coronavirus-2 was first reported from Wuhan, China in December 2019. The World Health Organization (WHO) officially upgraded the disease to pandemic on March 11, 2020, after assessment and verification of the alarming rates of its spread and

severity.¹ The disease is characterized by fatigue, fever, muscle and body ache, dry cough, loss of sense of taste and smell, etc., and 10–20% of patients are diagnosed with severe cases.²

Global Statistics: As on September 15, 2021, 07: 21 GMT, the total number of coronavirus cases reported was 226,685,202 with 4,663,324 deaths.³

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In this age of modernization, balancing extended working hours with household maintenance has become increasingly challenging; as a result, most families employ a domestic helper to assist them with their daily domestic demands. It has been reported that the vast majority of domestic workers are from the poorer sections of the society (ILO, 2007). In India, most of the domestic workers are migrants who have come from rural to urban areas in search of livelihood opportunities.⁴ This also holds true for Mizoram, wherein most of the domestic workers are from the marginalized sections of society and a large number of them are migrants (Burmese, Chakmas, Hmar, Tripuri, and tribal's from villages to cities or within territory itself) and the workers range from full-time to part-time workers, skilled, and unskilled workers.⁵ These domestic helpers mainly help with cooking, washing clothes, cleaning the house, as well as taking care of elderly persons. Some are employed as a live-in help whereas it might be a part-time job for others and may not stay with their employer. These domestic helpers have vital roles in the families they work, to maintain a smooth running and the upkeep of the family. During the COVID-19 pandemic lockdown, they have become especially important as they are the ones going out for groceries, preparing food for the family, the ones taking care of individuals that are at risk of COVID-19 such as the sick, young, and elderly.

With the absence of clinical treatments that are proven effective against the disease, the best way to combat this pandemic is through proper awareness, knowledge, and preventative practices. According to the studies by Anderson et al., 2020, a person's behavior can drastically decrease the rates of morbidity and mortality associated with the disease.⁶ When a majority of the population practices suitable preventative measures, such as good cleanliness, personal hygiene, and maintaining social distance, it will aid in the prevention of transmission, spread, and increase of infection.⁷ From the previous epidemic studies, it is evident that proper understanding and knowledge, awareness of different risks, their attitude, and beliefs aid in motivating the population to adopt better preventative measures.⁸ Knowledge, attitudes, and practices (KAP) studies have been frequently used for the identification of gaps in knowledge and practices among a specific sociodemographic group of a society or community for the instigation of proper public health interventions.⁹

The first case of COVID-19 in Mizoram was confirmed on March 24, 2020. There has been 72,883 confirmed positive cases and 307 lives have been lost to COVID-19 up to September 30, 2021 as per the information reported by the Department of Information and Public Relations, Government of Mizoram. Mizoram, situated in the North

Eastern India, has a close-knit small tribal population that has an excellent community support as well as has a record of the third highest literacy rate in the Country.

There are limited studies concerning the house hold workers and related susceptibility during the COVID-19 pandemic. This study investigates whether the domestic helpers practice precautionary behaviors and guidelines that were recommended by the WHO, and their knowledge and attitude toward COVID-19. We analyzed the KAP and assessed how sociodemographic factors interplay with their house hold work.

Aims and objectives

(1) The aim of the study was to assess the knowledge and awareness of the domestic helpers in a tribal population, (2) whether the domestic helpers practice appropriate preventative measures that are recommended by WHO, and (3) identify if any interventions are required to avoid vulnerability for the employers as well as general public during the pandemics. Evidence-based health behavior interjections and strategies for domestic helpers during the COVID-19 pandemic are also discussed in this paper.

MATERIALS AND METHODS

Study design and participants

To study the KAP toward COVID-19 by domestic helpers in Mizoram, a questionnaire was designed and was used for data collection between June 2020 and July 2021, during the COVID-19 lockdown. Consent of each participant was taken and their confidentiality was maintained. Domestic helpers working from the rural areas within Mizoram, who completed the questionnaire and gave their consent, were the participants in this study. Inclusion criteria were domestic helpers from rural areas above 14 years of age belonging to Mizo and Non-Mizo ethnicity and who gave consent to participate in the study. Exclusion criteria were domestic helpers with <1 year of experience.

Questionnaire

The questionnaire was designed by the authors and field tested and validated. The sociodemographic factors consist of age, gender, educational status, type of occupation/work done in the employer's house, working hours, monthly income, and whether they were staying or not with their employers. The participants' knowledge was assessed using 10 questions based on clinical symptoms and characteristics of the disease, transmission, and prevention. Their attitude was assessed through 10 questions about their perception on of being infected, losing their job, susceptibility, etc. The participants responded as "Agree" or "Disagree," and "Yes" or "No." There were 10 practice-based questions consisting

of methods used to wash hands, whether they were working during the lockdown period, use of protective masks, etc. The source of information regarding COVID-19 was also included in the questionnaire.

Data analysis

Frequency analysis was done for the nominal and ordinal scale variables and descriptive analysis was done for scale variables. Independent t-test was used to compare the mean knowledge score, attitude, and practice of domestic helpers for the demographic variables contains two levels. One-way analysis of variance (ANOVA) was used to compare the mean knowledge score, attitude, and practice of domestic helpers for the demographic variables that contains more than 2 levels. Pearson correlation analysis was used to study the relationship between the two numeric scale variables such as age, knowledge score, attitude, and practice score of domestic helpers. Data were analyzed using SPSS version 25 and $P \leq 0.05$ was considered statistically significant.

Ethics approval

This study was approved by the Institutional Human Ethics Committee, Zoram Medical College, Mizoram (No.F.20016/1/18-ZMC/IEC/42 dated June 23, 2020).

RESULTS

Sociodemographic characteristics

A total of 105 domestic helpers in Mizoram completed the KAP questionnaire survey, of which most of the participants ($n=94$, 89.5%) were females and male participants made up only 10.5% ($n=11$). More than half of the respondents ($n=82$, 78.1%) had a high/higher secondary level of education; whereas 16.2% were of primary level and 5.7% were illiterate. In addition, 69.5% of the participants were working more than 5 h/day and the rest (30.5%) worked <5 h/day. Among the domestic helpers, 51.4% of helpers' monthly household income was under Rs. 5000/month and 48.6% earned between Rs. 5000–10,000/month; and more participants (67.6%) were staying with their employer's family. The question on type of work done in the employers' household, the results revealed that most of the helpers, 70.6%, were involved in cleaning activities while a small 9.8% are involved with elderly care.

Knowledge of COVID-19

From the knowledge-based section, 95.2% of the participants were aware that COVID-19 is a communicable disease while 4.8% believed it to be a genetic disease. A good percentage of the respondents was able to correctly distinguish the symptoms of coronavirus such as fever (89.4%) and cough (83.7%). Participants are aware that the

virus can be transmitted through currency notes (74.8%), metals such as doorknobs and water taps (54.4%), and clothes (39.8%). Coughing and sneezing without covering the nose and mouth (70.5%) were the most frequent response among the different methods responsible for the spread of the disease. A large portion of participants had good knowledge of methods that help in preventing the spread of the infection, these were washing hands with soap and water (88.5%), maintaining adequate distance with others (68.3%), avoiding handshake (66.3%), etc. A good number of participants are aware that people with diabetes mellitus (61.9%) and adults >65 years of age (88.6%) are at an increased risk of being infected with the virus.

Attitude

Based on the attitude-based questions, 97.1% were at the time, afraid of being infected with the coronavirus whereas 92.4% have fear of dying if infected with the disease. About 96.2% agreed that the coronavirus is a very serious infection, and 95.2% disagreed that frequent hand washing is not necessary. About 75.2% disagreed that going out for work and meeting with friends/relatives should not be restricted while 24.8% agreed. About 15.2% agreed that coronavirus will affect only those who have come from abroad and not a common man while 84.8% of them disagreed. In case of any symptoms among the family members, most of the respondent had good attitude. More than half of the responses (79.80%) will call a helpline number given by the government while 48.1% will to take the person to a nearby doctor and 8.70% preferred to buy medicine from the nearby shop and 6.70% prefer to give home remedies or alternative remedies and only 1.90% prefer to wait for the symptoms to subside. Most of the respondents (78.1%) had a good mind-set of not discriminating COVID-19+ve people and almost all the participants (96.2%) disagreed to not wearing a mask while going outside. About 75.2% disagreed that there is no harm in buying vegetables/groceries from a crowded shop while 24.8% of them agreed. About 90.5% agreed that avoiding guests/visitors during this lockdown is better while 9.5% of them disagreed.

Practice

During the COVID-19 lockdown period, 75.2% were working while 24.8% were not; of those that worked, 44.8% had volunteered to work while 30.5% were asked by their employers to work. About 77.1% were receiving their monthly wage during the lockdown period while 22.9% of them were not receiving it. Half of the respondents (50.5%) reported that their family expenses did not change during the lockdown period whereas 49.5% of the respondents experienced an increase in their family expenses. All the participants were washing their hands with soap and water, of which 2.90% were also washing

with plain running water. About 92.4% were maintaining social distancing while going out for groceries, medicines, etc. and 92.4% were wearing a protective mask when they stepped out of the house.

Source of information

Media (68.6%) was the most common response with respect to where the respondents first heard about the coronavirus and 42.9% first received the news about the disease in December 2019. More than half of the respondents (88.6%) were updating themselves on the latest news about the disease and media was the most common source (65.7%).

KAP score on COVID-19

The results show that there are no significant differences noticed between males and females with respect to knowledge ($P>0.05$), attitude ($P>0.05$), and practices ($P>0.05$) (Table 1). Similarly, age does not influence the mean KAP score. Knowledge was positively significant to the attitude ($P<0.05$) and practice ($P<0.05$); therefore, good knowledge improves the attitude as well as practice toward COVID-19, whereas attitude was not significant

toward practice score (Table 2). Educational level was significantly associated with knowledge ($P<0.05$) and attitude ($P<0.05$) scores but not on practice ($P>0.05$), the higher the educational level, the better is the knowledge and practices (Table 3). Participant's working hours also significantly influence their knowledge ($P<0.05$) and practice ($P<0.05$) whereas their attitude was not (Table 4), contrastingly, their monthly income was not significant toward their KAP score ($P>0.05$) (Table 5). Respondents staying with their employers had a significantly high knowledge level ($P<0.05$) and practice scores ($P<0.05$) (Table 6).

DISCUSSION

Response to the pandemic situation is both related to the knowledge and attitude toward the disease and it directly influences the day today practices. Understanding the demographic and epidemiological evidences of the disease among the domestic helpers will help in managing the transmission, frequency of infection and post-COVID follow-up practices as well.

Table 1: Comparison of knowledge, attitude, and practice score for domestic helpers

Sex	n	Group statistics			t-value	P-value
		Mean	SD	Std. Error Mean		
Knowledge score						
Male	11	16.6	6.2	1.9	-1.281	0.203
Female	94	19.3	6.6	0.7		
Attitude score						
Male	11	10.5	1.2	0.4	0.538	0.591
Female	94	10.3	1.3	0.1		
Practice score						
Male	11	12.2	3.9	1.2	-1.538	0.127
Female	94	13.9	3.5	0.4		

$P<0.05$ is statistically significant (independent t-test); n: Number of participants

Table 2: Correlation of age with knowledge, attitude, and practice scores

Variables	Age	Knowledge score	Attitude score	Practice score
Age				
Pearson correlation		-0.078	0.006	-0.182
Sig. (2-tailed)		0.432	0.953	0.064
n	105	105	105	105
Knowledge score				
Pearson correlation	-0.078		0.224*	0.471**
Sig. (2-tailed)	0.432		0.022	0.000
n	105		105	105
Attitude score				
Pearson correlation	0.006	0.224*		-0.077
Sig. (2-tailed)	0.953	0.022		0.437
n	105	105		105
Practice score				
Pearson correlation	-0.182	0.471**	-0.077	
Sig. (2-tailed)	0.064	0.000	0.437	
n	105	105	105	

n: Number of participants; *Correlation is significant at the 0.05 level (2-tailed); **Correlation is significant at the 0.01 level (2-tailed)

Table 3: Education on knowledge, attitude, and practice score

Variables	n	Mean	SD	Std. Error	95% confidence interval for mean		F	P-value
					Lower bound	Upper bound		
Knowledge score								
Illiterate	6	25.667	6.186	2.525	19.175	32.1585	3.775	0.026
Primary	17	19.882	5.611	1.361	16.997	22.7674		
High/higher secondary	82	18.378	6.586	0.727	16.931	19.8251		
Attitude score								
Illiterate	6	11.667	1.506	0.615	10.087	13.2466	3.380	0.038
Primary	17	10.235	1.562	0.379	9.432	11.0386		
High/Higher Secondary	82	10.268	1.207	0.133	10.003	10.5336		
Practice score								
Primary	6	15.333	2.066	0.843	13.166	17.5010	0.855	0.428
High/higher secondary	17	14.118	2.690	0.652	12.735	15.5006		
	82	13.524	3.756	0.415	12.699	14.3496		

n: Number of participants; P<0.05 is statistically significant, One-way ANOVA was performed

Table 4: Comparing the knowledge, attitude, and practice score with working hours

Working (h)	n	Mean	SD	Std. Error Mean	t value	P-value
Knowledge score						
<5	32	16.656	7.155	1.265	-2.513	0.014
>5	73	20.082	6.091	0.713		
Attitude score						
<5	32	10.125	1.338	0.237	-1.126	0.263
>5	73	10.438	1.302	0.152		
Practice score						
<5	32	11.969	4.060	0.718	-3.549	0.001
>5	73	14.493	3.001	0.351		

t-test was performed; n: Number of participants; P<0.05 is statistically significant

Table 5: Comparing the knowledge, attitude, and practice score between respondents monthly income

Income (Rupees)	n	Mean	SD	Std. Error Mean	t-value	P-value
Knowledge score						
<5000	54	18.5370	6.72285	0.91486	-0.800	0.426
5000–10000	51	19.5686	6.47535	0.90673		
Attitude score						
<5000	54	10.2778	1.36557	0.18583	-0.520	0.604
5000–10000	51	10.4118	1.26770	0.17751		
Practice score						
<5000	54	13.5556	3.46773	0.47190	-0.500	0.618
5000–10000	51	13.9020	3.63458	0.50894		

(t-test was performed; N – number of participants; P Value<0.05 is statistically significant

Table 6: Comparing the knowledge, attitude, and practice score between respondents staying with owners

Variable	N	Mean	SD	Std. Error Mean	t-value	P-value
Knowledge score						
No	34	15.676	5.968	1.024	-3.848	0.000
Yes	71	20.648	6.298	0.747		
Attitude score						
No	34	10.176	0.936	0.161	-0.897	0.300
Yes	71	10.423	1.461	0.173		
Practice score						
No	34	11.588	4.179	0.717	-4.695	0.000
Yes	71	14.746	2.660	0.316		

P<0.05 is statistically significant

If the domestic helpers engage in adopting precautionary measures, including personal hygiene, maintaining social

distance, wearing mask, using sanitizers, etc., it is possible to manage the spread of the virus because individual

behaviors may significantly decrease infection rates of COVID-19.^{10,11} In our study, the domestic helpers had a good level of knowledge about the COVID-19 disease and exhibited a strong optimistic attitude against the infection. The level of practice for preventive measures was significant and this might be one of the reasons for the state of Mizoram to tackle the pandemic in an efficient way. The previous studies have found that a higher knowledge level positively correlates with practice of precautionary measures (Lee et al.,¹¹ Afzal et al.,¹² Alrubajee et al.,¹³ as well as a more positive and optimistic attitude (Tamang et al.,¹⁴ Lau et al.,¹⁵ toward COVID-19. Studies on different communicable disease epidemics have shown that knowledge and awareness (Aburto et al.,¹⁶ Honarvar et al.,¹⁷ risk perception (Zhong et al.,¹⁸) and supposed management (Azlan et al.,¹⁹) can benefit and motivate to adopt preventive measures and lead to stringent precautionary actions.

This study, to the best of our knowledge, is the first KAP study among the domestic helpers from rural areas and also in a tribal population. This cross-sectional study evaluated the levels of KAP of the domestic workers within Mizoram. It was found that knowledge was correlated with their attitude and the level of education was correlated with knowledge and attitude, which has been found in previous studies (Kumar et al.,²⁰); Lee et al.¹¹ This shows that through proper awareness and improving the public knowledge, different COVID-19 related fears, anxiety, panics, and their outlook on the epidemic can be improved, such as those seen in the SARS epidemic (Person et al.).²¹

A strong correlation was seen between participants working hours and their knowledge and practice whereas their monthly income was not. These results indicate that the more time the participants spent in their employers' house, the more conscious and aware they are of the disease while their monthly income does not make a difference; this shows the care that they had toward their employers.

Particularly, this study for the 1st time provides insights into the demographic and epidemiological status of domestic helpers which will help the health organizations to draft policies and strategies to care and prioritize the section of the people who are often over-looked. The high literacy rate of Mizoram state is also reflected in the KAP of the participants which shows how important education is toward the well-being of the society as a whole.

Limitations of the study

The present study was done among the house maids, hence the results of the study cannot be generalized to the general population.

CONCLUSION

During COVID-19 pandemic, the role of domestic helpers is crucial in maintaining sterile and hygienic environments in the society so as to prevent transmission and propagation of the virus. The domestic helpers need to possess good knowledge, attitude, and follow precautionary practices as the new variants emerge from the first wave into the third wave. This study on domestic helpers provide testimony that knowledge is an essential component of attitude, practice, or behavior. This will contribute to develop mitigation strategies to encourage and sustain the house owner's as well as societal safety with regards to the current COVID-19 pandemic.

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GSA- Concept, design of the study, manuscript preparation, revision of manuscript, and coordination; **MBP**- Interpreted the results and revision of manuscript and coordination; **VH**- Data collection, revision of the manuscript, and coordination; **RL**- Manuscript preparation, review of literature and coordination; **LZ**- Manuscript preparation, review of literature, and coordination; **KM**- Statistical analysis, interpretation of results, and manuscript preparation; **LT**- Data collection, study design, coordination, and manuscript revision; **JZ**- Concept, coordination, and manuscript preparation; **NSK**- Concept, study design, data collection, manuscript preparation, and coordination; and **SZ**- Concept, study design, data collection, and manuscript preparation.

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