

Original Article

Evaluating a rural farming community's understanding of COVID-19 and their experience accessing essential services during a period of lockdown in Sri Lanka

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Keywords: knowledge, myths, essential services, COVID-19

Abstract

Background

Sri Lanka used a holistic approach with many stringent measures to successfully control COVID-19. The paper provides a snapshot of a rural farming community's understanding of COVID-19 and their experiences in relation to the efforts of the Government.

Methods

A cross-sectional study among 731 farming adults in the Anuradhapura District with data collected through telephone interviews.

Results

One-third were 41-50 years of age (37.1%). Almost all identified the symptoms of COVID-19 (97%-96.7%) and main modes of spread (87.2%-97.5%) but the possibility of transmission by asymptomatic persons was less known (51.7%). A great majority (95%-98.8%) accurately identified the main methods of preventing COVID-19. The most prevalent myths were consuming alcohol to prevent COVID-19 (84.5%) and children/young adults not being susceptible (83.6%). Television was the commonest source of information (96%). Social media was not popular. Two-thirds (66.2%) with non-communicable disease received medications delivered to their home during locked-down periods. No participant (0%) reported food shortages and primary/secondary school education had continued through print material delivered to homes. One-third (35.2 %) were financially worse off and three-fourths (75.8%) were not able to continue farming activities due to lack of pesticides/insecticides (36.7%) and fertilizers (39.4%).

Conclusions

This rural farming community demonstrated a good understanding of COVID-19 and their experiences related to accessing essential health services were fair

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Submitted: Oct 2020, Accepted revised version: Dec 2020, Published: Dec 2020

Competing Interests: Authors have declared that no competing interests exist

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Background

Sri Lanka's response to the COVID-19 pandemic has been swift, decisive, and coordinated, encouraging a whole-of-society approach since the first local case was reported on the 11th of March 2020. As of 27 September 2020, the total number of infected persons reported are 3349 with 3186 (95.1%) recovered and only 150 under care. Of the 3349, 1431 (42.7%) were imported cases (64 foreigners and 1367 Sri Lankan repatriates). The number of deaths is recorded as 13. With a total population of 21.4 million, the rate of infected stands at 0.16 per 1000 and the mortality rate as 0.39% per infected [1].

The crucial strategies implemented by the government throughout the response include: an initial period of restriction of movements of people through a 'lockdown' status, enhanced laboratory testing to detect COVID-19 positive individuals, institutionalized and proactive treatment of people who have been diagnosed with COVID-19 and active tracing and quarantining of contacts of people who have tested positive [2].

Restricting the movement of people is considered as one of the main measures that facilitated limitation of the potential spread of COVID-19. This was through imposing a curfew on the 17th of March 2020 in three districts which was extended to the whole island on the 20th of March 2020 amounting to a 'lockdown' situation. After successfully containing COVID-19 to a few identified clusters, the island wide curfew was lifted in a phased manner after five weeks. A national government-led risk communication campaign to educate and engage the public on COVID-19 and appropriate prevention behaviors contributed much to the success of the country's response to the pandemic. The United Nations agencies, led by the World Health Organization, joined the efforts and supported the government by providing technical information for messages, creative input for design and assistance in dissemination. With the halting of the production and circulation of print media during the five weeks of curfew, the national risk communication campaign was mainly disseminated via television and radio. Materials distributed were in the form of news items, expert panel discussions and focused messaging from experts and technical agencies. The other main dissemination strategy was a social media campaign with targeted messages, acknowledging that this medium will only reach specific groups of community members. A few assessments and surveys were conducted to evaluate the reach of the risk communication campaign and its effectiveness; however, most of these were done through a bibliometric analysis of social media engagement and online surveys. Thus, these assessments only generated information on specific urban communities who use digital tools and have access to the internet, neglecting information from the rural sector of the country. In the backdrop of continuing the risk communication as part of the country's transition towards the 'new normal', an assessment of the reach and effectiveness of the communication campaign among rural communities is imperative.

During the period of 'lockdown', the Sri Lankan government initiated several special measures to ensure uninterrupted essential services to the public. Some of the main initiatives include: a

system to distribute medication to the homes of patients with non-communicable diseases (NCDs) who receive treatment through government medical clinics, a method to deliver essential food items to homes, continued welfare schemes to the poor and those suffering from chronic kidney disease (CKD) and the continuation of school lessons through electronic media. To date, no formal assessments have been published on the reach of these services to rural communities.

In this background, this study was conceptualized to obtain a snapshot of a rural farming community's understanding of COVID-19 and their experiences accessing essential services during the 'lockdown'. The findings will be used in continuing risk communication and community engagement efforts during the current transition period to the 'new normal'.

This study is a snapshot view of a rural farming community's understanding of COVID-19 and their experiences accessing essential services during the 'lockdown' period.

Methods

The study design was a cross-sectional descriptive study. The study setting was the Kidagalegama, Helambagaswewa, Angunochchiya, Ataweeragollawa, Athakada, Lolugaswewa, Mahakumbukgollawa, Paranahalpillawa, and Puhudivula Grama Niladhari areas of the Medawachchiya Divisional Secretary area of the Anuradhapura District. The vast majority of adults in this setting are engaged in paddy or subsistence farming on a full-time or a part-time basis. This is the same study setting in which an ongoing collaborative prospective study is being conducted by the Ministry of Health and Indigenous Medical Services and the World Health Organization to understand the aetiology of CKDu in Sri Lanka.

A total of 731 healthy adults in the age category of 20 – 60 years old were enrolled in the ongoing prospective study to understand the aetiology of CKDu in Sri Lanka. After a baseline assessment in 2018, four annual follow-up assessments were planned between 2019 and 2021. The same study population was used in the present study regarding the assessment of the participants' understanding of COVID-19 and their own and their immediate families' experiences accessing essential services during the 'lockdown' period. All 731 participants enrolled in the prospective study to understand the aetiology of CKDu in Sri Lanka. In keeping with the principles of social distancing, data was collected through telephone interviews based on a pre-tested structured interviewer-administered questionnaire. A group of twenty Health Promotion graduates from the Faculty of Allied Health Sciences at the University of Rajarata was trained to collect data through an online platform. The mobile phone numbers of the study participants were obtained from the database of the prospective study to understand the aetiology of CKDu in Sri Lanka. Following an introductory conversation, researchers obtained verbal consent from each study participant. The interviewer directly entered responses to the telephone interview into a software named Kobo.

Data collection commenced within one week of the lifting of daytime curfew in the Anuradhapura District; overall, data was collected from the 15th of May to the 15th of June 2020. The prompt

start date enabled the study to capture an early overview of the rural farming community's level of understanding of COVID-19 and their experiences accessing essential services. The Grama Niladharis were contacted over the phone for qualitative inquiries when village-level information on specific issues was deemed relevant. The results pertaining to each specific objective is presented using descriptive statistics disaggregated by sex of the study population. The Ethics Review Committee of the Post Graduate Institute of Medicine, Colombo, granted ethics clearance for the study (ERC/PGIM/2020/036).

Results

Of the 731 eligible participants, 603 (82.2%) responded. The majority of the participants were males (n=353, 58.5%; females: males 1:1.4). Approximately one-third of the participants were in the age category of 41-50 years of age (n=224, 37.1%). Only a very few (n=5, 0.8%), reported not having had school education. Approximately two thirds had either more than 10 years of formal schooling having completed secondary education or had achieved higher levels of education (n=355, 58.9%; males-n=198, 56.1%; females n=157, 62.8%)(Table 1). Almost all (n=590, 97.8%) were engaged in farming, either fulltime (n=288, 47.8%) or part-time (n=302, 50.1%).

Table 1: Distribution of study population by age category, highest level of education and sex

Characteristics	All (N=603)	Female (n=250)	Male (n=353)
	N(%)	N(%)	N(%)
Age Category			
18-30 years	159(26.4)	62(24.8)	97(27.5)
31-40 years	165(27.4)	76(30.4)	89(25.2)
41-50 years	224(37.1)	90(36.0)	134(38.0)
50- 60 years	55(9.1)	22(8.8)	33(9.3)
Highest level of education			
No school education	5(0.8)	1(0.4)	4(1.1)
Up to grade 5	37(6.1)	13(5.2)	24(6.8)
grade 5 to GCE Ordinary level	206 (34.2)	79(31.6)	127(36.0)
Passed GCE Ordinary level	210(34.8)	96(38.4)	114(32.3)
Passed GCE Advanced level	97(16.1)	42(16.8)	55(15.6)
Diploma holder	19(3.2)	8(3.2)	11(3.1)
Degree holder or more	29(4.8)	11(4.4)	18(5.1)

Knowledge on COVID-19 infection

Understanding of COVID-19 among study participants was assessed based on their knowledge of symptoms, mode of spread, clinical course, treatment and prevention measures (Table 2).

Almost all participants correctly identified the symptoms of COVID-19 (fever- 97.2%, cough- 97%, difficulty in breathing- 96.7%). A great majority identified the main modes of spread as droplet and contact as evidenced by accurately identifying the following modes of transmission: inhaling or accidentally ingesting droplets of saliva or sputum from a person with COVID-19 when they sneeze or cough (97.5%), touching your mouth after your hands have been contaminated with the body fluids (e.g., blood, vomit, or sweat) of someone with COVID-19 (87.2%), touching your mouth after your hands have touched surfaces contaminated with droplets from someone with COVID-19, (97.2%), and by sharing cigarettes with someone who has COVID-19 (95%). At the same time, the study revealed that the possibility of transmitting COVID-19 by someone with no symptoms was less known (51.7%) (Table 2).

Almost all (90.5%) correctly identified that people who are elderly, obese, or have chronic illnesses are more likely to experience severe disease (Table 2).

A great majority (98.3%) accurately identified the main methods of preventing COVID-19 infection: hand washing, the single most effective preventive measure for COVID-19, wearing a mask (95%), covering your mouth and nose when coughing or sneezing (98.8%), and maintaining at least one-metre physical distance between people (98.3%). Amongst these indications of proper knowledge, belief in a few myths was also present. The most prevalent myths were that drinking alcohol can prevent COVID-19 infection (84.5%), and children and young adults do not have to take precautions, as they are less likely to contract COVID-19 (83.6%) (Table 2).

Inquiries into perceptions on the origin of COVID-19 and the effectiveness of 'lockdown' measures. Approximately three-fourths of the participants believed that it is somewhat to extremely likely that COVID-19 will be successfully controlled and brought down to zero cases in Sri Lanka within 2-3 months (56.4%). The majority (52.5%) felt that the following statement was extremely likely: "government curfew/lockdown was effective to keep villagers from moving out of their houses."

Table 2: Distribution of study population by knowledge on COVID 19

Aspects of knowledge on COVID 19	Total		Females		Males	
	Yes N(%)	No/Don't know N(%)	Yes N(%)	No/Don't know N(%)	Yes N(%)	No/Don't know N(%)
Knowledge on the mode of spread of COVID-19						
By inhaling or accidentally ingesting droplets of saliva or sputum from a person with COVID-19 when they sneeze or cough	588(97.5)	14(2.3)	246(98.4)	4(1.6)	342(96.9)	5(1.4)
By touching your mouth after your hands have been contaminated with the bodily fluids (e.g., blood, vomit, or sweat) of someone with COVID-19	526(87.2)	77(12.7)	211(84.4)	17(6.8)	315(89.2)	11(3.1)
By touching your mouth after your hands have touched surfaces contaminated with droplets from someone with COVID-19	586(97.2)	17(2.9)	244(97.6)	3(1.2)	342(96.9)	4(1.1)
By a person with COVID-19 who has no symptoms	312(51.7)	291(48.2)	127(50.8)	123(49.2)	185(52.4)	168(47.5)
By breathing air in the same room as someone with COVID-19	549(91)	54(9)	232(92.8)	13(5.2)	317(89.8)	23(6.5)
By blood transfusion	298(49.4)	305(50.6)	48(19.2)	111(44.4)	55(15.6)	194(55.0)
By having sexual intercourse with a person who has COVID-19	400(66.3)	203(33.6)	165(66.0)	24(9.6)	235(66.6)	34(9.6)
By a bite of an infected mosquito	396(65.7)	207(34.3)	78(31.2)	79(31.6)	103(29.2)	128(36.3)
By eating meat of any animal	432(71.6)	171(28.4)	86(34.4)	65(26.0)	136(38.5)	106(30.0)
By eating meat of a wild animal	480(79.6)	123(20.4)	105(42.0)	38(15.2)	151(42.8)	85(24.1)
By a bite of a wild animals	478(79.3)	125(20.7)	118(47.2)	43(17.2)	170(48.2)	82(23.2)
By drinking water that is contaminated with the saliva or sputum of someone who has COVID-19	507(84.1)	96(15.9)	213(85.2)	13(5.2)	294(83.3)	25(7.1)
By sharing needles to inject drugs with someone who has COVID-19	144(23.9)	459(76.1)	20(8.0)	188(75.2)	34(9.6)	271(76.8)
By sharing cigarettes with someone who has COVID-19	573(95)	30(5)	237(94.8)	7(2.8)	336(95.2)	7(2.0)
By a bite of an infected dog or a cat	193(32)	410(68)	36(14.4)	170(68.0)	45(12.7)	240(68.0)
Knowledge on the clinical course of COVID-19 and treatment						
Currently, an effective western medicine is being used to cure COVID-19	413(68.5)	189(31.3)	180(72.0)	70(28.0)	233(66.0)	119(33.7)
Antibiotics are the first-line treatment	405(67.1)	197(32.7)	166(66.4)	84(33.6)	239(67.7)	113(32.0)

Currently western medicines offer ONLY symptomatic and supportive treatment	353(58.5)	249(41.3)	143(57.2)	107(42.8)	210(59.5)	142(40.2)
Currently, an effective non-western (traditional/ Indigenous / Ayurveda) medicine is being used to cure COVID-19	271(44.9)	331(54.9)	112(44.8)	138(55.2)	159(45.0)	193(54.7)
Those who are elderly, have chronic illnesses, and are obese are more likely to develop severe disease.	546(90.5)	56(9.3)	229(91.6)	21(8.4)	317(89.8)	35(9.9)
It is possible that some persons infected with COVID-19 will have a silent infection (will not show symptoms on any day)	330(54.7)	272(45.1)	130(52.0)	120(48.0)	200(56.7)	152(43.1)
Knowledge on the measures to prevent from COVID-19						
Handwashing is the single most effective preventive measure for COVID-19	593(98.3)	8(1.3)	248(99.2)	2(0.8)	345(97.70)	6(1.7)
The general public should wear masks to prevent the infection caused by the COVID-19	573(95)	29(4.8)	233(93.2)	17(6.8)	340(96.3)	12(3.3)
Cooking meat and eggs properly is an effective safety precaution	328(54.4)	274(45.4)	127(50.8)	123(49.2)	201(56.9)	151(42.8)
Always close your mouth and nose when coughing or sneezing	596(98.8)	6(1.0)	250(100.0)	0(0)	346(98.3)	6(1.7)
Keeping at least 1-meter physical distance between people can prevent COVID-19	593(98.3)	9(1.5)	246(98.4)	4(1.6)	347(98.3)	5(1.4)
Drinking alcohol can prevent COVID-19	509(84.5)	93(15.4)	212(84.8)	38(15.2)	297(84.1)	55(15.6)
It is not very important for children and young adults to take precautions as they are less likely to contract COVID-19	504(83.6)	98(16.3)	200(80.0)	50(20.0)	304(86.1)	48(13.6)
Isolation and treatment of people who are infected with the COVID-19 virus are effective ways to reduce the spread of the virus	576(95.5)	26(4.3)	241(96.4)	9(3.6)	335(94.9)	17(4.8)
Removing water collections around your house can prevent COVID-19	446(73.9)	156(25.9)	195(78.0)	55(22.0)	251(71.1)	101(28.6)
People who have contact with someone infected with COVID-19 should be immediately isolated in a proper place for at least 14 days	574(95.2)	27(4.5)	239(95.6)	11(4.4)	335(94.9)	16(4.5)
Currently there is no vaccine that can protect a person against infection with COVID-19	469(77.8)	133(22.1)	196(78.4)	54(21.6)	273(77.30)	79(22.4)
Prevent unsafe direct contacts with live animals	272(45.1)	330(54.7)	108(43.2)	142(56.8)	164(46.5)	188(53.3)

Sources of information on COVID – 19 infection

The participants were asked about the sources from which they obtain COVID-19 information which revealed that for most it was television (96%) (Table 3). The study confirmed that social media and online apps were not useful when targeting rural communities, especially women in these communities.

Table 3: Distribution of study population by sources of information on COVID-19

Source	Total (N=603)	Female (n=250)	Male (n=353)
	N(%)	N(%)	(N%)
Radio	389(64.5)	158(63.2)	231(65.4)
Television	579(96.0)	242(96.8)	337(95.5)
WhatsApp/Viber messaging/IMO	171(28.4)	48(19.2)	123(34.8)
Other social media sources (Facebook/ twitter)	192(31.8)	52(20.8)	140(39.7)
Short messaging system (SMS)	203(33.7)	80(32.0)	123(34.8)
Websites	123(20.4)	29(11.6)	94(26.6)
Newspapers that were printed before the 'lockdown' period	206(34.2)	71(28.4)	135(38.2)
Family members	403(66.8)	174(69.6)	229(64.9)
Friends	374(62.0)	138(55.2)	236(66.9)
Community Health workers (MOH/PHI/PHM)	264(43.8)	103(41.2)	161(45.6)
Family doctors	82(13.6)	31(12.40)	51(14.4)
Representatives of non-governmental organizations	61(10.1)	21(8.4)	40(11.3)
Community leaders	246(40.8)	96(38.4)	150(42.5)
Religious leaders	165(27.4)	64(25.6)	101(28.6)
Indigenous practitioners	57(9.5)	18(7.2)	39(11.0)
Informal leaders in the community	76(12.6)	23(9.2)	53(15.0)

Practices to prevent COVID – 19 infection

Self-reported practices showed that almost all of the study participants practiced the main prevention methods during the 'lockdown' period: handwashing with soap and water or frequently using an alcohol-based hand sanitizer (95.2%), avoiding crowded places as much as possible (92%), and wearing a mask when leaving home or meeting someone from outside of the home (98%) (Table 4).

Table 4: Distribution of the study population by the self-reported practices related to preventing COVID-19

	Total			Female			Male		
	Yes, usually	Only at times	No	Yes, usually	Only at times	No	Yes, usually	Only at times	No
	N(%)	N(%)	N (%)	N(%)	N(%)	N(%)	N (%)	N(%)	N(%)
In recent days, washed hands with soap and water or frequently used an alcohol-based hand sanitizer	574(95.2)	22(3.6)	5(0.8)	239(95.6)	10(4.0)	1(0.4)	335(94.9)	12(3.4)	4(1.1)
In recent days, avoided crowded place as much as possible	555(92.0)	13(2.2)	33(5.5)	242(96.8)	2(0.8)	6(2.4)	313(88.7)	11(3.1)	27(7.6)
In recent days, wore a mask when leaving home or meeting anyone from outside of the home	591(98.0)	6(1.0)	4(0.7)	247(98.8)	1(0.4)	2(0.8)	344(97.5)	5(1.4)	2(0.6)

Experiences related to essential health services during the 'lockdown'

Only 55 participants and their family members experienced acute illnesses during 'lockdown,' 80% obtained treatment by visiting government hospitals; only two reported not having a way to obtain treatment. Of the 198 participants who reported a family member with a NCD, two-thirds (66.2%) stated that the affected family members received their medications from the government hospital clinic, delivered to their home through a mechanism coordinated by the Grama Niladhari. Specifically inquiring into the issues faced by the 81 CKDu patients revealed that 3 (3.7%) had to miss dialysis, 13 (16.1%) had fallen ill and were hospitalized, and 11 (13.5%) had not received their monthly welfare allocation. No participant (0%) reported experiencing food shortages and, the vast majority (80.8%) did not have difficulties accessing drinking water that had undergone reverse osmosis.

Experiences of educational activities for school children during the 'lockdown'

Study participants were asked about the continuation of educational activities for schooling children in their families. All participants (100%) reported that school education continued for the primary and secondary grade children because local schoolteachers distributed photocopies of lessons, worksheets, and question papers to the homes of children through the Grama Niladaris; the parents were charged the cost of the photocopies. A mechanism of providing feedback to the students from teachers was not evident.

Adverse economic experiences during the 'lockdown'

Approximately one-third of the study population (35.2 %) stated that they were financially much worse off compared to the period prior to lockdown. Three-fourths (75.8%) were not able to continue farming activities during the locked down period, mainly due to lack of access to pesticides/insecticides (36.7%) and fertilizer (39.4%).

Discussion

The rural farming community of the present study demonstrated a good understanding of COVID-19. Literature revealed several published evidence on knowledge, attitudes and practices of COVID-19, of the general public. Comparing them with the findings of the present study show that the results conform with other studies from different parts of the world.

Modes of transmission of COVID-19 infection was a main focus of assessment in the present study which revealed that it was well understood by the rural population (87.2%-97.5%). Almost all participants correctly identified the symptoms of COVID-19 (96.7%- 97.2%). There were no apparent gender differences in COVID-19 related knowledge. The United States of America (USA) and the United Kingdom (UK) are countries with high transmission of COVID-19. An online questionnaire was administered to 3000 adults residing in the USA and 3000 adults residing in the UK during February/ March 2020 [3]. Of the 2986 and 2988 adults completing the survey from the USA and the UK, most (73%-95% had good knowledge of the main modes of disease transmission and common symptoms of COVID-19. A total of 4,850 Malaysian residents were

surveyed using an online platform. Knowledge on COVID-19 was found to be good among 80.5% [4]. Another survey using an online self-reported questionnaire among the Saudi population (n= 3,427) revealed that they were knowledgeable about COVID-19 [5] In contrast to these surveys highlighting good knowledge, an online cross-sectional study conducted from March-April, 2020, among persons aged 12–64 years, in Bangladesh revealed that only 48.3% of participants had good knowledge on COVID-19 [6].

The present study revealed that the possibility of COVID-19 transmission by someone with no symptoms was less known (51.7%). The other surveys have not assessed this very important aspect.

Self-reported practices assessed in the present study showed that almost all of the study participants practiced the main prevention methods (95.2%-98%). The study in Malaysia [5] also confirmed the findings of the present study as 83.4% of the participants reported correct preventive practices of avoiding crowds (83.4%) and practicing proper hand hygiene (87.8%). Similar to the results on assessment of knowledge, the proportion who practiced COVID-19 preventive measures in Bangladesh were much less (55.1%) [6].

As expected, the most common source of information on COVID-19 was television. The results reflect the commitment of the television channels, in the absence of print media, to fulfill their national responsibility. The study confirmed that social media and online apps were not useful in targeting rural communities, and especially rural women.

Surveys studying the sources of information on COVID-19 in the published literature were conducted as online surveys. Unsurprisingly, they mostly identify social media and internet as common sources of information. An online survey on 559 adults in Egypt revealed that a majority (66.9%) obtained information mainly through social media (66.9%), and the internet (58.3%) [7]. A study on 103 subjects enrolled through convenient sampling in India revealed that radio and television were the most common (55.3%) source of information on COVID-19. The second most common was the internet (21.4%).

Evidence revealed that the experiences of rural communities related to accessing food and drinking water, seeking care for acute illnesses and obtaining continuous medication for chronic NCDs were fair. The efforts of the education sector to reach school children with a practical solution is commendable.

Of note are the medical and financial difficulties faced by the CKD patients. It is recommended that measures be taken to avoid a similar situation in the future. Another significant adverse experience among the rural farming community during the 'lockdown' down period was the failure to initiate a mechanism to provide farmers access to the tools and resources they need to support their farming activities which would have reduced the economic hardships experienced.

A study among 2446 residents of mainland China [8] had also inquired into the difficulties faced by the public during COVID-19 restrictions. They reported that the social disruption and household economic impact were notable, particularly in provinces with higher cumulative confirmed cases. The mean total impact score was 9.9 ($SD \pm 3.8$) out of a possible score of 15.

The fact that the study was conducted among healthy adults and their families in rural Anuradhapura should be considered as a limitation of the study. Also, the influence of reporting bias related to socially accepted behaviour cannot be excluded when using self-reported practices to assess behaviour to prevent COVID-19 infection.

Conclusions and recommendations

Considering that this is a new and previously unknown disease, the good understanding of COVID-19 of the rural farming community in Sri Lanka can be attributed to the nationally planned and disseminated communication campaign of the government, which was amply supported by other partners. Self-reported infection prevention practices during the 'lockdown' period indicate that the campaign was successful in effecting new behaviors among rural communities to protect themselves from COVID-19 infections.

A critical gap in awareness was the possible infectivity of asymptomatic people. Similarly, a problematic but commonly held myth was the belief that drinking alcohol will prevent COVID-19. It is recommended that these be addressed in the ongoing risk communication efforts as priority messages for both males and females. It is recommended that risk communication be continued through television to reach rural communities.

The most adverse experience among the rural farming community during the 'lockdown' down period was the failure to initiate a mechanism to provide farmers access to the tools and resources they need to support their farming activities, which would have reduced economic hardship.

Acknowledgments

The financial support of the World Health Organization country office is acknowledged

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