

Country-wide Survey on Covid-19 Preparedness of Medical Clinics of the Government Sector Healthcare Institutions

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Abstract- NCDs were estimated to account for 83% of the total deaths in Sri Lanka in the year 2016. Continuing regular health services for patients with NCDs, amidst the COVID-19 pandemic, is a challenge. Ministry of Health has taken steps to provide guidance and training to continue services of medical clinics in government Healthcare institutions (HI). The aim of the study was to determine the Covid-19 preparedness of medical clinics in government sector HI to provide NCD services. A descriptive cross-sectional study was carried out involving 682 HI from all health districts of Sri Lanka, recruited by purposive sampling technique. A pretested self-administered questionnaire was administered to the heads of the institution (HOI) as a google form. The response rate was 97.4%. Out of the respondents, 41.2 %, 49.9%, and 9.1% were primary, secondary, and tertiary HI respectively. More than 60% of the HI had updated patient databases, nearly 70% had appointment systems to minimize overcrowding of patients, patient waiting areas with adequate distancing and ventilation, and drug dispensing mechanisms for a longer duration. Out of HIs 56.2% had triage of patients on Covid-19 symptoms before entering the medical clinic. Less than 20% of HIs had telemedicine facilities and 33.1% has digital blood pressure apparatus. Medical clinics of HIs in Sri Lanka have satisfactory preparedness with regard to the prevention of Covid-19.

Index terms- Covid-19, Medical Clinics, NCDs

I. INTRODUCTION

BACKGROUND OF THE STUDY

Sri Lanka has a high prevalence of NCDs that includes 24% of hypertensives and 8% of diabetics (World Health Organization 2015). The NCDs are estimated to contribute to nearly 83% of the deaths in the country in 2016 (World Health Organization 2020a). Therefore, NCDs are considered one of the leading public health problems compared to other health issues including communicable diseases.

Health System in Sri Lanka consists of the government and private sector. The government sector plays a vital role and bears the major share in the provision of health services since it is provided free of charge at the point of delivery. The diagnosed

patients with NCDs are treated as out-patients, being followed up at medical clinics established at different levels of care that include primary, secondary, and tertiary.

Sri Lanka consists of 1,078 government healthcare institutes. Out of these government healthcare institutions that provide medical/NCD clinic services, which include two National Hospitals, 22 Teaching/General Hospitals, 81 Base Hospitals, 474 Divisional Hospitals and 499 Primary Medical Care Units (Ministry of Health 2020).

These clinics are manned by specialist medical officers and medical officers and each patient is given a follow-up plan and being reviewed at regular intervals. Patients with NCDs are given drugs for longer durations e.g. one month and instructions on how to use them (Ministry of Health 2018). In addition to this system, Health Lifestyle Centers with empaneled population are established throughout the country mainly in primary care institution for screening of NCDs in the community (Mallawaarachchi et al. 2016).

Since NCDs are considered a public health problem, a special national programme had been established in the Ministry of Health, Sri Lanka led by the Directorate of Non-Communicable Diseases. Its main objective is the prevention and control of NCD in the country and provides technical expertise and monitors the country's NCD status (Senaratne and Mendis 2019).

Sri Lanka consists of 26 Health districts and each district has a focal point i.e. Medical Officer-NCD (MO-NCD) to coordinate, monitor, and evaluate the NCD-related work within the district and liaise the center with the periphery in a manner to cover the whole country (Ministry of Health 2010).

Along with the other nations of the world, Sri Lanka is affected by the Covid-19 pandemic. Most of the sectors including health were affected by the pandemic. The focus of the health, as well as non-health sectors, was towards mitigation of the Covid-19 outbreak. Both existing human and materialistic resources in health sector were utilized for Covid-19 management and the attention towards non-Covid-19 related matters has deviated to a certain extent (World Health Organization 2021). This was a threatening situation even for the conduct of medical clinics for patients with NCD. The breakdown of services would have

resulted in a severe surge of NCD-related morbidities and mortalities.

Several measures had been taken by Sri Lanka to prevent the spread of Covid-19. The majority of these measures were adherence to the DReAM concept which includes disinfection, maintenance of respiratory etiquette, adherence to aseptic techniques, and wearing of face mask (World Health Organization 2020b).

Groups of experts in public health in the Directorate of NCD of the Ministry of Health together with experts from the professional colleges prepared a guideline that gives directions on how to conduct the medical clinics amid the Covid-19 pandemic while adhering to the national policy on Covid-19 prevention. This guideline was validated by sending it to all the healthcare institutions under the signature of the Director General of Health Services. By considering the importance of uninterrupted functioning of medical clinics throughout the country, a specially targeted training of trainers (TOT) programme was organized. All the focal points of the districts i.e. MO-NCDs were trained and instructed to carry out training of all the heads of the institutions (HOI) in their respective districts.

After a lapse of two months duration, a countrywide survey was conducted covering all the districts of the country with the objective of assessing the Covid-19 preparedness of the medical clinics by Healthcare Institutions.

II. METHOD

A descriptive cross-sectional study was conducted from 15th of April to 14th of May 2021 involving all 26 health districts of Sri Lanka, among 700 HI at primary, secondary, tertiary level by using purposive sampling technique. The questionnaire was prepared by group of experts in public health as well as other clinical fields. The face, content and consensual validity of the questionnaire was ensured by a panel of experts, and it was pre-tested prior to use in the proper sample. Data were collected by using a self-administered questionnaire which was administered via online platform. i.e., e mails, WhatsApp, Viber to the HOIs.

Two weeks duration was given to submit the responses, and all were given two reminders at the end of one week and 11 days since the commencement of the study to increase the response rate. In 10% of the sample was observed objectively by district focal points i.e. MO-NCD for validating the responses given by the participants.

The data was analyzed by using descriptive statistics and presented as numbers and percentages. Chi square test was applied to determine the association and odds ratio with 95% confidence interval to determine the strength of associations.

This study was conducted as an audit and a service need to obtain the status of Covid-19 preparedness of the medical clinics of every government healthcare institution. The consent of the HOI to data collection. The anonymity of the respondent was ensured.

III. RESULTS

Out of the recruited 700 government healthcare institutions 682 had responded with a response rate of 97.4%.

The frequency distribution of healthcare intuition by districts are shown in Table 1.

Out of the respondents, 41.2% (n=281), 49.9% (n= 340), 7.5% (n=51) and 1.6% (n=10) were Primary Medical Care Units (PMCU), Divisional Hospitals (DH), Base Hospitals (BH) and General/Teaching Hospitals (GH/TH) respectively. Majority of the government healthcare institutions i.e., 56.3% (682/1,211) participated at this survey. The frequency distribution of healthcare institutions participated by health districts of Sri Lanka is shown in Table 1.

Table 1: Frequency distribution of healthcare institutions

District	Number (%) ¹ of PMCIs	Number (%) of DHs	Number (%) of BHs	Number (%) of GHs/THs	Number (%) of Total HCI
Ampara	21 (7.5%)	9 (2.6%)	4 (7.8%)	0 (0.0%)	34 (5.0%)
A'pura	15 (5.3%)	20 (5.9%)	5 (9.8%)	0 (0.0%)	40 (5.9%)
Badulla	17 (6.0%)	41 (12.1%)	3(5.9%)	1 (10.0%)	62 (9.1%)
Batticaloa	0 (0.0%)	17 (5.0%)	4 (7.8%)	1 (10.0%)	22 (3.2%)
Colombo	12 (4.3%)	7 (2.1%)	0(0.0%)	0 (0.0%)	19 (2.8%)
Galle	18 (6.4%)	14 (4.1%)	1(2.0%)	0 (0.0%)	33 (4.8%)
Gampaha	13 (4.6%)	1 (0.3%)	1(2.0%)	2 (20.0%)	17(2.5%)
H'tota	12 (4.3%)	18 (5.3%)	3(5.9%)	1 (10.0%)	34 (5.0%)
Jaffna	6 (2.1%)	16 (4.7%)	3 (5.9%)	0 (0.0%)	25 (3.7%)
Kalmunai	0 (0.0%)	5 (1.5%)	4 (7.8%)	0 (0.0%)	9 (1.3%)
Kalutara	0 (0.0%)	11 (3.2%)	0 (0.0%)	1 (10.0%)	12 (1.8%)
Kandy	19 (6.8%)	36 (10.6%)	0 (0.0%)	0 (0.0%)	55 (8.1%)
Kegalle	24 (8.5%)	11 (3.2%)	2 (3.9%)	1 (10.0%)	38 (5.6%)
Kilinochchi	1 (0.4%)	8 (2.4%)	0 (0.0%)	1 (10.0%)	10 (1.5%)
Kurunegala	21 (7.5%)	16 (4.7%)	0 (0.0%)	0 (0.0%)	37 (5.4%)
Mannar	11 (3.9%)	12 (3.5%)	1 (2.0%)	0 (0.0%)	24 (3.5%)
Matale	14 (5.0%)	21 (6.2%)	1 (2.0%)	1(10.0%)	37 (5.4%)
Matara	17 (6.0%)	10 (2.9%)	2 (3.9%)	0 (0.0%)	29 (4.3%)
M'gala	9 (3.2%)	15 (4.4%)	3 (5.9%)	0 (0.0%)	27 (4.0%)
Mullaitivu	4 (1.4%)	5 (1.5%)	2 (3.9%)	0 (0.0%)	11 (1.6%)
N'Eliya	5 (1.8%)	2 (0.6%)	0 (0.0%)	0 (0.0%)	7 (1.0%)
P'naruwa	6 (2.1%)	6 (1.8%)	2 (3.9%)	0 (0.0%)	14 (2.1%)
Puttalam	21 (7.5%)	14 (4.1%)	4 (7.8%)	0 (0.0%)	39 (5.7%)
Ratnapura	4 (1.4%)	7 (2.1%)	3 (5.9%)	0 (0.0%)	14 (2.1%)
T'malee	10 (3.6%)	10 (2.9%)	2 (3.9%)	0 (0.0%)	22 (3.2%)
Vavuniya	1 (0.4%)	8 (2.4%)	1 (2.0%)	1 (10.0%)	11 (1.6%)

Healthcare Institutions have adopted following mechanisms to minimize the gathering of patients in situ, there by maintenance of social distancing was ensured (Table 2). In majority of healthcare institutions (56.2%, n=158) had established a triage system i.e., system to screen for Covid-19 signs and symptoms prior to directing them to the medical clinics.

Table 2: Frequency distribution of Healthcare Institutions on measures taken to maintain social distancing in situ.

Measure	Number	Percentage
Having an appointment system to minimize the gathering of clinic patients	193	68.7%
Having a patient waiting area with adequate spacing and ventilation	197	70.1%
Having a database of the patients attending clinics as present with updated contact information, disease condition, and medications prescribed maintained	174	61.9%
System in place with patients have been categorized as to be seen monthly or two months or longer frequency	220	78.3%
Having a drug dispensing mechanism for a longer period e.g., two months or more	198	70.5%
Medicines are given as monthly supplies in separate air and waterproof envelopes	129	45.9%
Having a system for a representative of a patient allowed to obtain the medicines at refill visits from the pharmacy by producing the clinic book	225	80.1%
Having an alternative mechanism to distribute drugs (specially for patients living in isolated areas)	200	71.2%
Having a new technology to consult patients with minimum exposure e.g., telemedicine	48	17.1%

More than 70% of the healthcare institutions found to have measures such as having adequately spaced waiting area, categorization of patients to be seen in different frequencies based on their condition, having mechanisms to dispense drugs for longer durations, having alternative mechanism to distribute drugs and allowing a bystander to get refills in the absence of the patient. But less than 50% of the healthcare institutions had adopted measure to ensure the quality of drugs being distributed i.e., use of air and waterproof envelopes. Less than 20% of institutions had used new technology to consult patients such as telemedicine.

The frequency distribution of safe preparedness to measure clinical parameters are as follows (Table 3)

Table 3: Frequency distribution of healthcare institutions with Covid 19 safe measures to check selected parameters.

Measure	Number	Percentage
Having a safety mechanism to check the blood pressure of clinic attendees	252	89.7%
Having a safety mechanism to check capillary blood sugar of the clinic attendees	199	70.8%
Having Digital BP apparatus	93	33.1%

Nearly 90% and 70% of healthcare institutions check blood pressure and capillary blood sugar in their clinic participants respectively, but only one third of the institutions had digital blood pressure apparatuses.

The association between the type of hospital and preference to send drugs via Government Postal Service to their Patients with NCD are shown in Table 4.

Table 4: The association between the type of hospital and preference to send drugs via Government Postal Service to their NCD patients.

Type of Hospital	Preference to send drugs via Government Postal Services		Total	Statistic
	Yes n (%)	No n (%)		
Primary Care HI	109 (38.8%)	172 (61.2%)	281 (100.0%)	OR=0.697 (95% CI=0.51-0.95) X ² =5.2 df=2 p=0.02
Non-Primary Care HI	191 (47.6%)	210 (52.4%)	401 (100.0%)	

Majority of both primary care institutions as well as non-primary care institutions did not prefer sending drugs to the Patients with NCD via Government Postal Services. The association between type of hospital and preference to send drugs via governmental postal service was statistically significant at the level of p=0.05. The reluctance to send drugs via Government Postal Service was significantly higher among primary care HI than the non-primary care HI which is reflected by primary healthcare institution is 0.69 times more likely to send drugs via post than non-primary healthcare institutions.

IV.DISCUSSION

This study was conducted in the view assessing the Covid-19 preparedness of the medical clinics in the country to continue their services amid the existing pandemic. Healthcare

institutions from all the health district of Sri Lanka has participated at this study.

Directorate of NCD of the Ministry of Health as the national focal point to prevention and control of NCDs had provided a guideline on measures to be taken to prevent Covid-19 infection when medical clinics are being conducted. The implementation of the guideline had been further strengthened by conducting series of on-line TOT programmes of district level focal points; MO-NCD. This country wide survey was conducted as a follow up mechanism to provision of guidance and training. These findings would be helpful in assessing the success of implementation of the guideline and to identify the gaps for further improvements.

When this survey was conducted, steps were taken to minimize information bias by using a judgmental validity ensured questionnaire. Furthermore, MO-NCD had assessed random 10% of the healthcare intuitions who had responded in this survey. This measure has further strengthened the validity of the results of this survey.

Application of a triage system to identify Covid-19 suspicious patients prior to reaching medical clinics is particularly important for ensuring the safety of the other patients as well as the healthcare staff. This practice was found to be in place in nearly 60% of HIs. Most of the HIs (Nearly 70%) follow Covid-19 preventive measures especially with regard to reduce overcrowding of clinic patients. This would be helpful in provision of services to the patients without an interruption.

Monitoring of blood pressure and blood sugar levels of the clinics attendees is essential for clinical management of NCD patients. Mechanisms should be established to measure these parameters with minimum infection risk to both healthcare staff as well as the patient. Also, availability of suitable equipment to carry out such activities is instrumental. It is admirable to see, measures had been taken to check essential parameters such as blood pressure and capillary blood sugar adhering to safety precautions in majority (>70%) of the HIs.

It is notable that availability of modern facilities to ensure Covid-19 safety was found to be in lower levels in the HIs. This was reflected by the non-availability of telemedicine systems (<20%) for patient consultations as well as non-availability of digital blood pressure apparatus (<35%) in majority of healthcare intuitions.

One of the methods adopted by the Ministry of Health to provide continuous supply of the drugs to their patients with NCDs was to send drugs via the Government Postal Service. This method was used to minimize patients attending HIs, reduce their mobility and the probability of acquainting Covid-19 infection. But it was noted that majority of primary care intuitions did not prefer this system in contrast to secondary and tertiary care institutions. The main reason behind this finding would be primary care hospitals cater to patients who live in close proximity in contrast to secondary/ tertiary care hospitals of which receive patients residing in distant places.

In view of provision of services to Patients with NCD by medical clinics without an interruption, it is important to follow Covid-19 prevention measures by all the HIs. These findings can be used by the Ministry of Health to identify HIs that do not

follow the safety measures and empower them including provision of modern equipment as highlighted by this survey. The findings of this survey will also enlighten the Ministry of Health not to take blanket decision such as provision of drugs via the Government Postal Services for all patients but identify the HIs that need such service prior to such decisions. Replication of similar survey in regular intervals will be helpful in identification of sustainability of measures taken, improvements made and further gaps to be rectified.

V. CONCLUSION

Majority of the healthcare institutions throughout the country are practicing Covid-19 safety measures when they conduct medical clinics. Use of modern technology to further strengthen safety measures by healthcare institutions, need to be encouraged.

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