

Geriatric Telemedicine: Ensuring continuity of healthcare services to the older patients in Kedah, Malaysia during the COVID-19 pandemic

Teh Hoon Lang, MRCP¹, Mohd Azri Mohd Suan, MSc², Noor Syahireen Mohammed, BPharm²

¹Geriatric Unit, Department of Medicine, Hospital Sultanah Bahiyah, Ministry of Health, Alor Setar, Kedah, Malaysia, ²Clinical Research Centre, Hospital Sultanah Bahiyah, Ministry of Health, Alor Setar, Kedah, Malaysia

SUMMARY

Geriatric medicine practice requires a multidimensional and multidisciplinary assessment to provide a holistic overview of the older patients. During the current COVID-19 pandemic time, it becomes more critical to ensure that the elderly patients continue to receive regular geriatric care for their pre-existing chronic illness and at the same time avoid unnecessary exposure to COVID-19 virus. Geriatric telemedicine clinic provides a convenient solution to ensure continuity of care for the older patients. Careful patient selection, technical requirement, geriatric assessment via audio-visual communication, and caretaker involvement were among the important issues discussed in this article.

INTRODUCTION

The demand for geriatric medicine service has risen over the years, partly contributed by rapid development of healthcare-related technology that actualize longevity of human life. Older population is known to have multiple morbidity¹ with complex psychosocial issues. This requires a more comprehensive assessment and management to ensure their quality of life compared with the usual standard care.

The challenges of providing care to meet the complex needs of older patients enter a new chapter with the arrival of the novel coronavirus disease SARS-COV-2 (COVID-19) that originated from Wuhan, China that spread rapidly throughout the world.^{2,3} Although the first wave of this deadly outbreak was handled successfully in Malaysia,⁴ the second wave of COVID-19, which hit Malaysia in early March 2020, marked a bigger threat and changed the healthcare landscape of the country.⁵ Following the implementation of Movement Control Order, Malaysians were advised to stay at home and avoid mass movements and gatherings.⁶ Healthcare services have also been affected, including the disruption of regular clinic visits and limited services for non-emergency cases.

In response to the above situation, the geriatric team of Hospital Sultanah Bahiyah (HSB), Kedah state has initiated a Geriatric Telemedicine (GT) Clinic as an alternative to deliver the geriatric care for our patients. HSB is a government-funded tertiary centre situated at northern region of Peninsula Malaysia. This centre provides multidiscipline specialist services to the population of Kedah and nearby

northern states. Telemedicine is defined as remote use of communication technology in exchange of medical information from one site to another with the goal of improving patient health.⁷ The application of telemedicine in healthcare delivery has been long discussed but was hindered by several shortcomings such as internet connectivity particularly in suburban and rural areas. However, this COVID-19 pandemic has thrust the need for implementation of telemedicine in an accelerated way. The telemedicine service for geriatric patient in HSB was initiated in June 2020. Until the end of April 2021, 40 patients had enrolled into this service with majority were males (57.5%) and in the age group of 80-89 years (52.5%). The demographic and clinical characteristics of the patients are summarized in Table I. We would like to share our experience in setting up the GT service in HSB and simple solution to problem during the virtual consultation.

Patient selection and technical requirement

Careful case selection is the most crucial step in establishing a successful GT service.⁸ There are two main aspects to be considered before offering GT service to the patients:

- (I) Patient related factor – The patient should be an existing patient who has been under geriatric clinic follow up with stable chronic illness(es). They should not have vision or hearing impairment that is severe enough to interfere with the quality of communication during telemedicine session. Cognitively intact patients can be opted to join the telemedicine session alone or with the presence of their family member(s). Whereas cognitively impaired patients must be accompanied by their main care giver(s) during the telemedicine session.
- (II) Availability of telecommunication device and internet connection – The patient or their care giver must have access to appropriate telecommunication device and stable internet connection at home, and they should have some degree of familiarity with the device's operation.

Verbal consent patients and caregivers to participate was obtained before enrolment. Appointment date and reminder for telemedicine session was then given to the enrolled patient and their caregiver through messaging platform application. The technical setup of the telemedicine is made to be reasonably simple. National language (*Bahasa Malaysia*) was used to communicate during GT session. Using their own devices (e.g. smartphone, tablet, computer),

This article was accepted: 26 May 2021

Corresponding Author: Teh Hoon Lang

Email: hoonlang@yahoo.com

Table I: Demographic and clinical characteristics of patients receiving geriatric teleconsultation between June 2020 till April 2021 at Hospital Sultanah Bahiyah

Characteristic	n (%)
Age group	
60-69	7 (17.5)
70-79	10 (25.0)
80-89	21 (52.5)
90+	2 (5.0)
Gender	
Male	23 (57.5)
Female	17 (42.5)
Ethnicity	
Malay	22 (55.0)
Chinese	17 (42.5)
Indian	1 (2.5)
Main diagnosis	
Alzheimer's Disease	12 (30.0)
Vascular Dementia	6 (15.0)
Mixed Dementia	5 (12.5)
Advanced Dementia with Parkinsonism	4 (10.0)
Lewy's Body Dementia	3 (7.5)
Frontotemporal Dementia	1 (2.5)
Pseudodementia	1 (2.5)
Ischaemic Stroke with Unilateral Hemiparesis	2 (5.0)
Non-Traumatic Spinal Cord Injury	1 (2.5)
Cortical Basal Degeneration	1 (2.5)
Depression	1 (2.5)
Depressive Anxiety Disorder	1 (2.5)
Hypoactive Delirium	1 (2.5)
Lacunar Cerebral Infarct with Unilateral Hemiparesis	1 (2.5)
Number of telemedicine session attended by patient.	
1	17 (42.5)
2 - 3	17 (42.5)
4 - 5	6 (15.0)

patients and caregivers in their own homes are connected to the team in HSB via video conferencing platform (Figure 1) with only a click to a link without any need to download additional software. The link to the video conferencing is provided prior to the scheduled appointment. The video conferencing platform utilized provides highly secured video connection to ensure the privacy of the patients and protection of personal data.

Essential elements in geriatric telemedicine

During designing of the working frame for GT, three essential elements were adapted from normal clinic consultation: (I) involvement of multidisciplinary team, (II) administration of comprehensive geriatric assessment, and (III) engagement of patient's family member or caregiver.

(I) Involvement of multidisciplinary team

The involvement of multidisciplinary team in geriatric management have been recommended to ensure a holistic approach to the complex care needs for elderly persons.⁹ Core team members for our GT clinic consist of a geriatrician, a trained geriatric nurse and a pharmacist. The presence of other allied health care professionals is optional depending on the need of the patients. Each team member can opt to meet in the same room during the session or join from their respective working station in the hospital.

(II) Performing comprehensive geriatric assessment

Comprehensive geriatric assessment is one of the hallmarks that differentiate geriatric consultation from other specialty, and this should be adopted and maintained as much as possible in GT service. The geriatric team will go through the past medical record of patients prior to the scheduled appointment to maximize the work efficiency during telemedicine clinic session. After confirming identities of the patients and caregivers, the team members will take turn to perform the assessment related to their roles which cover all

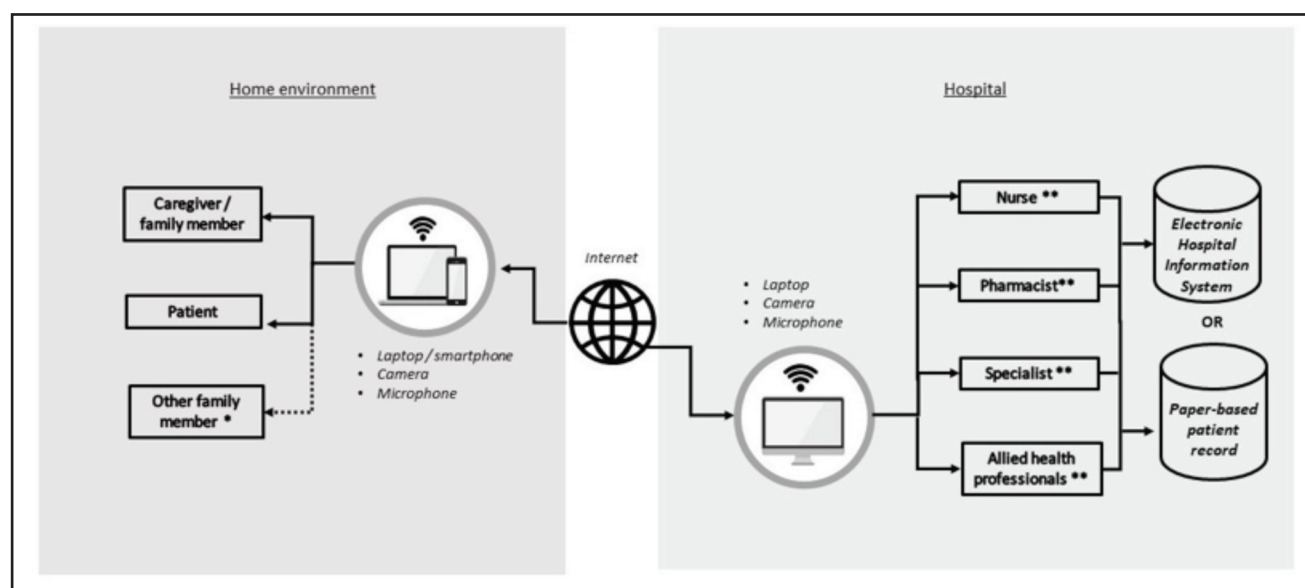


Fig. 1: The components and framework of geriatric telemedicine service in Hospital Sultanah Bahiyah, Kedah. * Patient family member other than caregiver residing in other location. ** Each team member can be in the same room or separate location during video conference.

aspects of care include medical, physical, functional and psychosocial. There was evidence to show that cognitive assessment and mood assessment done by audio-visual telecommunication on elderly were actually quite reliable and not much difference from face-to-face interview.¹⁰

The quality of the communication during telemedicine is heavily influenced by the device that were used by the patients despite stability of internet connection. There might be variations on what the patients saw and heard during telemedicine session depend on the resolution of the devices they used. Hence, patients were encouraged to wear their hearing aids and spectacles if needed to optimize their engagement during telemedicine session. To adapt to the absence of physical presence for assessment, flashcards were used where some phrases and pictures for cognitive assessment had been reprinted in larger size to ensure all patients are able to view it clearly for assessment. Additionally, caregivers were told to ensure patients are in a conducive and suitable environment to minimize distractions (e.g., turn off television), and maximize sound quality to smoothen the conduct of assessments.

(III) Engaging patient's relatives or caregiver

Input from the caregivers or family members who look after the geriatric patients is important, especially for those patients with cognitive impairment. The caregivers are encouraged to perform self-home monitoring such as blood pressure and capillary blood sugar. This record of home monitoring can be sent to the geriatric team via messaging platform application on the scheduled appointment date. Moreover, the caregivers can also send the photos of lab test results, wound or rash if there is any. All the photos sent were transferred and saved in HSB electronic medical record of the patients to keep it private and confidential.

Apart from main caregivers of the patients, other family members were invited to join remotely from a separate location with the consent of the patients. Treatment plan will be formulated according to the needs and conditions and informed to the caregivers and family members at the end of the session. The prescribed medication is later arranged to be collected by several convenient method of choice by patients such as drive-through or by postage to houses.

In a nutshell, the GT service is not difficult with minimal technical requirement, proper patient selection, committed caregivers and teamwork from multidisciplinary health care professionals. This service is a good kick start to provide continuation of care, reduce patients load in usual clinic and avoid unnecessary exposure to COVID-19 infection among the older patients.

This service has the prospect and potential to be adopted by other medical specialties to cater for patients who have difficulties to commute and attend hospital appointments. The virtual conduct of telemedicine also allows for easier access of family members to the clinical team that would benefit the wellbeing and satisfaction of the patients towards medical care services.

ACKNOWLEDGEMENTS

The authors would like to thank the Director General of Health Malaysia for his permission to publish this article. We also thank Rosnah Ahmad and Khor Lian Fen for their input on telemedicine clinic set-up.

FINANCIAL DISCLOSURE

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. None of the authors had any financial conflicts of interest.

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