



Virtual Consultation Services in Buntong Health Clinic, Malaysia

Subashini a/p Ambigapathy¹, Shanggari a/p Maniarasu², Majidah binti Mazelan¹

¹Klinik Kesihatan Buntong, Ipoh, Perak

²Klinik Kesihatan Jelapang, Ipoh, Perak

ABSTRACT

Published Online: September 01, 2026

Background: Virtual Consultation Services (VCS) were introduced at Buntong Health Clinic (BHC), Malaysia in February 2023 as part of the National Health Reform Agenda in 2019 which was included in 12th Malaysian Plan, to enhance digital healthcare delivery, reduce clinic overcrowding, and improve accessibility.

Objective: This study aims to review and improve the quality of Virtual Consultation Services at Buntong Health Clinic, evaluate their effectiveness, and describe the socio-demographic characteristics of clients utilizing the service.

Methods: A cross-sectional retrospective audit was conducted involving all clients enrolled in VCS at BHC from 1 January 2023 to 31 December 2023. Universal sampling was applied. Data were retrieved from digital clinic records and analyzed using descriptive statistics. A total of 1,624 clients who met the inclusion criteria were included in the analysis.

Results: Of the 1,624 clients, 51% were male and 49% female. The majority (96.8%) were aged 25–59 years, followed by 2.1% aged 18–24 years and 1.1% aged ≥60 years. Most clients had tertiary education (83.1%), while 16.2% had secondary education. The default rate was low at 0.86%. The most common co-morbidities were diabetes mellitus (417 clients), hypertension (191), ischaemic heart disease (148), and dyslipidaemia (80), indicating that non-communicable diseases formed the bulk of VCS users. Services delivered through VCS primarily included health education, diabetes services, maternal and child health consultations, medication adherence counselling, and chronic disease follow-up.

Conclusion: The implementation of VCS in Buntong Health Clinic has demonstrated encouraging uptake, particularly among working-age adults with higher educational backgrounds and patients with chronic diseases. The low default rate suggests good acceptance of the service. Further qualitative and quantitative research is recommended to assess client and healthcare provider satisfaction, identify challenges, and enhance service delivery, particularly among elderly and less digitally literate populations.

KEYWORDS:

Virtual Consultation Services, Telemedicine, Primary Healthcare, Digital Health, Chronic Disease Management, Malaysia.

INTRODUCTION

Telemedicine refers to all medical services provided via information and communication technology to deliver medical care¹. This innovative approach to healthcare delivery allows patients and healthcare providers to connect without the need for physical presence, making healthcare more accessible, efficient, and convenient.

Corresponding Author: Subashini a/p Ambigapathy

**Cite this Article: Ambigapathy, A., Maniarasu, S., Mazelan, M.B. (2026). Virtual Consultation Services in Buntong Health Clinic, Malaysia. International Journal of Clinical Science and Medical Research, 6(9), 325-330. <https://doi.org/10.55677/IJCSMR/V6I9-01/2026>*

In Malaysia, telemedicine services have been coined since 1997, mainly aimed for Medical Officers working in rural health facilities to consult with tertiary care specialists especially in Sabah and Sarawak². During the World Health Assembly held in May 2018, resolution of digital health had been unanimously supported by the members of World Health Organization (WHO) demonstrating the need for digital technologies including telemedicine in advancing universal health coverage and other health aims of the Sustainable Development Goals (SDGs)³.

Virtual Clinic services at health clinics were outlined under the National Health Reform Agenda in 2019 and was also included in the 12th Malaysia Plan. Currently, the Virtual

Virtual Consultation Services in Buntong Health Clinic, Malaysia

Clinic (VC) service which has now been re-branded as Virtual Consultation Services (VCS), is a tool for delivering health services virtually, providing direct and interactive clinical consultations and treatment plans between healthcare providers and clients. These services undoubtedly complement the existing clinic services in allowing clients to receive optimal and systematic health services especially during and after the COVID-19 pandemic.

The services include clinical consultation and client treatment plan among health care professionals, staffs concerned from the health clinics and client. The clients in the VCS are individuals who are eligible to utilize the service, with good facility of communication tools as well as stable internet networks. Before embarking on the service, clients would have to provide their written consent through the Virtual Consultation Consent Form. The VCS aims to reduce overcrowding in health clinics and improve cost effectiveness in terms of time and ease transportation difficulties of clients visiting health clinics. This eventually will reduce unnecessary clinic visits and long waiting times. Other than that, VCS would also increase clients' access to primary healthcare services and promote new norms to prevent the spread of contagious diseases like COVID-19 infection. At the same time, these services move forward in alignment with Ministry of Health Malaysia's initiative with health digitalization and reform.

Buntong Health Clinic (BHC), situated in Perak, Malaysia has started its operation since 20th July 2009. Since then, the average of clients per day in this facility has reached 770 clients, with average of clients per week is 3500 clients. There are 83 health care providers in total working in Buntong Health Clinic with 1 Family Medicine Specialist Consultant, 1 Family Medicine Specialist, 15 Medical Officers, 12 Pharmacists, 18 Nurses, 6 Medical Assistants and 39 allied health professionals.

VCS was started in BHC in February 2023 in conjunction with the National Health Reforms, which offers not only to individuals but also group virtual consultation sessions as well. These services later expanded to medication adherence counselling, home blood glucose monitoring counselling for diabetic patients, healthy dietary habit advice, simple home-based exercises, mental health counselling and more. However, there are a few things which are not included in the scope of VCS such as prescription of new medicine and issuance of sick medical certificates.

The healthcare providers involved in delivering VCS included Family Medicine Specialist, Medical Officers, Pharmacists, Physiotherapists, Occupational Therapists, Medical Social Welfare Officers, Dietitians and paramedics. Identification of suitable clients are then recruited and invited to join VCS at BHC; these would be clients with communication tools and stable internet connection. The platform used would include Google Meet, MyGovUC 2.0, Whatsapp video call and most recently MyVAS-MySejahtera. Before utilizing the service, clients are required

to provide their written consent via the VCS Consent Form (Appendix 1).

The scope of the VCS in Buntong Health Clinic includes:

1. Consultation services for chronic disease patients such as Non-Communicable Disease (NCD), Communicable Disease (CD), respiratory diseases etc.
2. Notification of laboratory and radiological test results.
3. Health education
4. Booking appointments for follow-up visits
5. Quit Smoking Clinic (QSC) Service including counselling on pharmacological and non-pharmacological treatment.
6. Direct Observed Treatment Short Course (DOTS) for Tuberculosis patients
7. Follow-up consultation of Human Immunodeficiency Virus (HIV) patients
8. Family Planning services and certain antenatal consultations in Maternal Child Health Clinic (MCH).
9. Medication counselling including proper usage of inhalers, insulin pen and others.
10. Counselling in Medication Therapy Adherence Clinic (MTAC)
11. Dietitian services: individual consultation, group consultation, multi-disciplinary team and education classes
12. Occupational therapy (OT): training and guidance for caregivers and patients involving interventions.
13. Physiotherapy (Physio): individual consultation and group consultation.

2.0 METHODS

Study Design:

This is cross-sectional retrospective research to evaluate on the quality of virtual clinic practice among patients at Buntong Health Clinic.

Study Period:

This study covers a one-year period, from 1st January 2023 to 31st December 2023. Patient information from virtual clinic sessions conducted during this time will be retrieved from the digital records at Buntong Health Clinic.

Study Setting:

All patients in the VCS program in Buntong Health Clinic from 1st January to 31st December 2023, who met the inclusion and exclusion criteria were recruited:

Inclusion Criteria:

- Age must be equivalent or more than 18 years old.
 - Patient who understood and able to communicate in Malay language.
 - Patient who gave consent to collect their data.
 - Patients able to participate in virtual consultation services.
- Exclusion Criteria:
- Non-Malaysian citizen.
 - Patients with incomplete data.

Virtual Consultation Services in Buntong Health Clinic, Malaysia

Sample size:

A total of 1,624 clients who utilized the virtual service and followed up at the clinic were included. Universal sampling was done.

Data collection

This was a cross-sectional retrospective audit. The data was collected from all the patients recruited into the virtual consultation services conducted in Buntong Health Clinic, who fulfilled the inclusion and exclusion criteria. These data were obtained from the record starting from 1st January 2023 until 31st December 2023. The subjects’ privacy is protected during the data collection. Personal identifying information of subjects will not be collected. All data collected from the health clinic will be kept in a soft copy with password protected in the Principal Investigator (PI) personal computer, which can only be accessed by the PI. The data will be stored in the personal computer for 7 years. Study data will be destroyed after 7 years of storage.

Data Analysis

The descriptive analysis result will be presented in the form of frequencies and percentages organised in table, charts and text. The independent variable will be gender, age educational levels, comorbidities and services delivered through virtual consultation clinic services. The study data and analysis will not be informed to the patient.

RESULTS

In total, 1624 clients have been recruited in this study, between January 2023 to December 2023. The number of clients defaulted were 14 which accounted for 0.86% of the total number of clients. Slightly more than half of the clients were males, 51% and females, 49%. Majority of the clients were between the age of 25-59 (96.8%), followed by age 18-24 (2.1%) and more than or equivalent to 60 years old (1.1%). In terms of education level, a vast majority of the clients had tertiary education level (83.1%) whilst 16.2% of clients had secondary education level, 0.3% of clients had primary education level and 0.4% had no proper education. These are shown in the the table and chart below.

Table 1: Demographic characteristics of clients

Variable	No of clients	Percentage (%)
Categorical variables		
Gender		
Male	833	51
Female	791	49
Age (years)		
18-24	34	2.1
25-59	1572	96.8
≥60	34	1.1
Education level		
No	6	0.4
Primary	5	0.3
Secondary	263	16.2
Tertiary	1350	83.1

Chart 2: Gender of clients

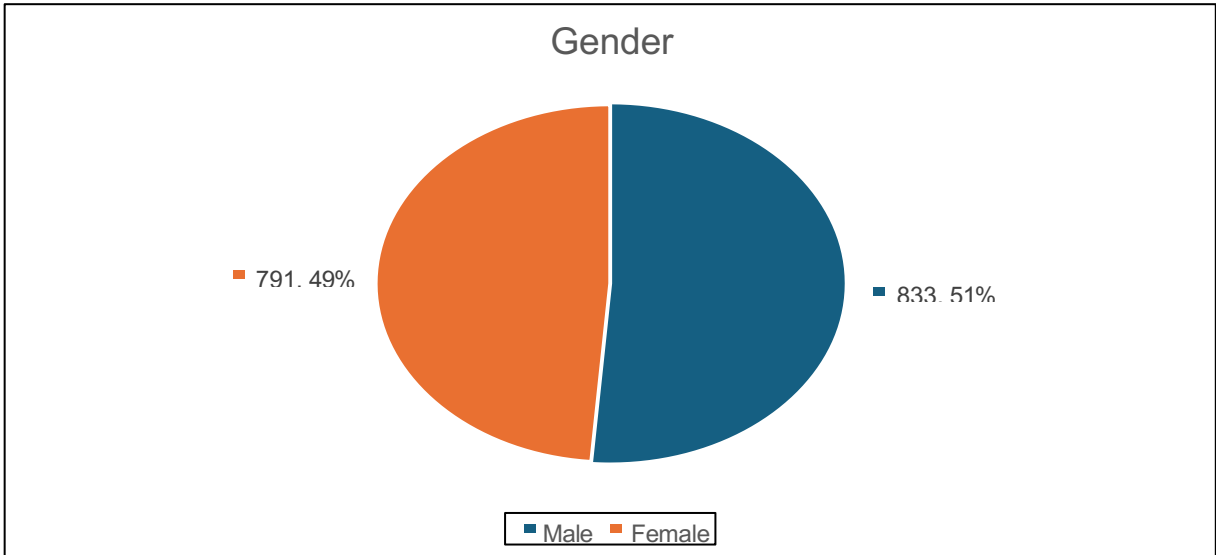


Chart 3: Age of clients

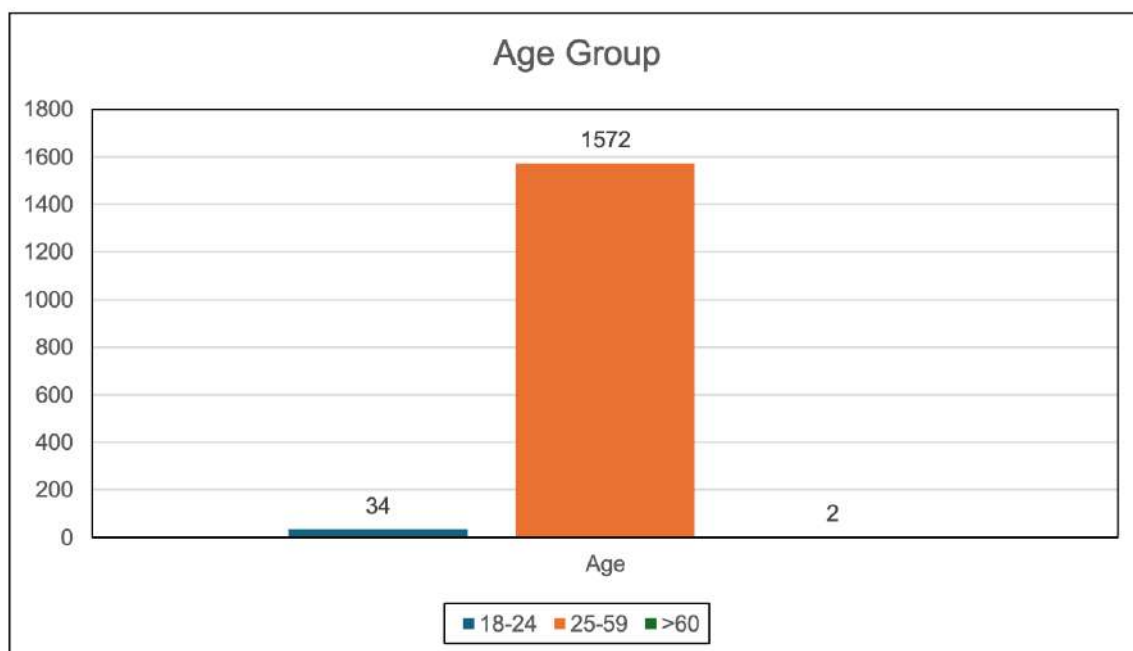
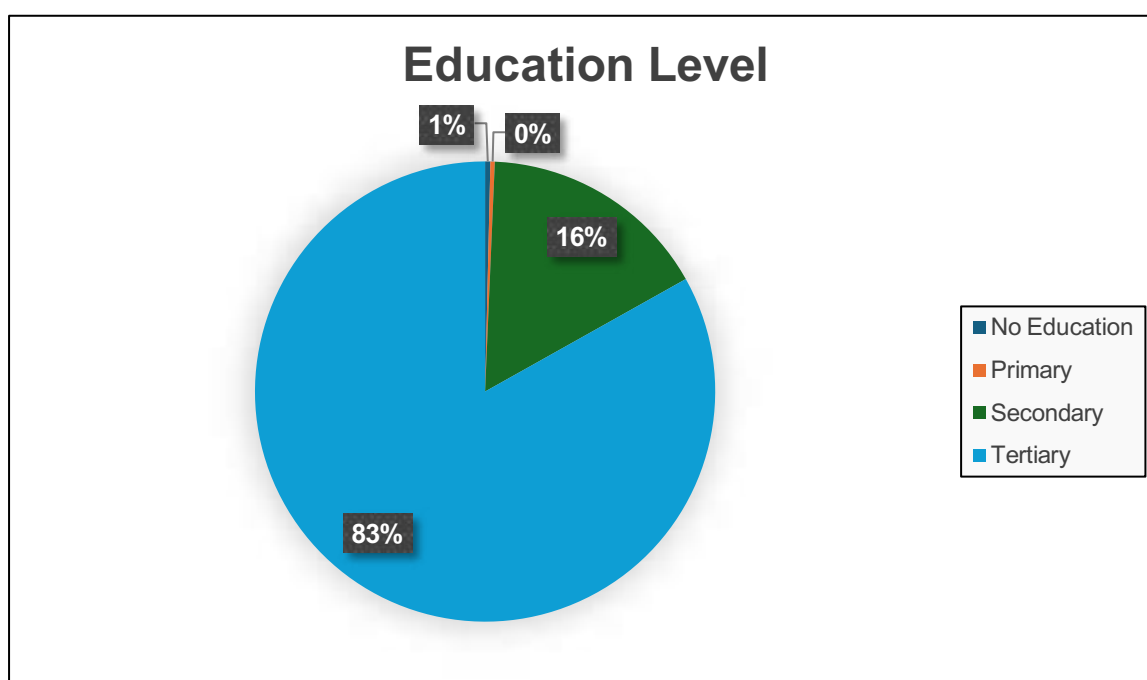


Chart 4: Education Level of VCS clients



In terms of existing conditions, majority of the clients had Diabetes Mellitus (DM), accounted for 417, followed by 191 clients had hypertension, 148 clients had ischaemic heart disease (IHD), and 80 clients had dyslipidaemia, and 24 clients had other conditions.

Chart 5: Morbidities of VCS Clients

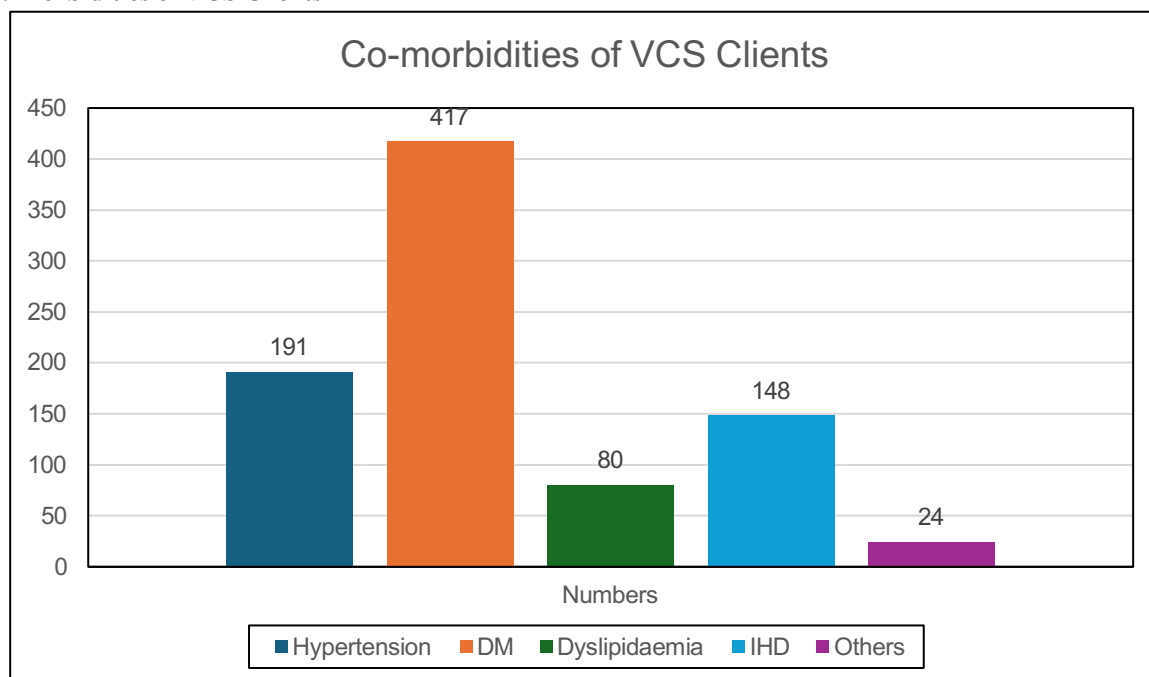
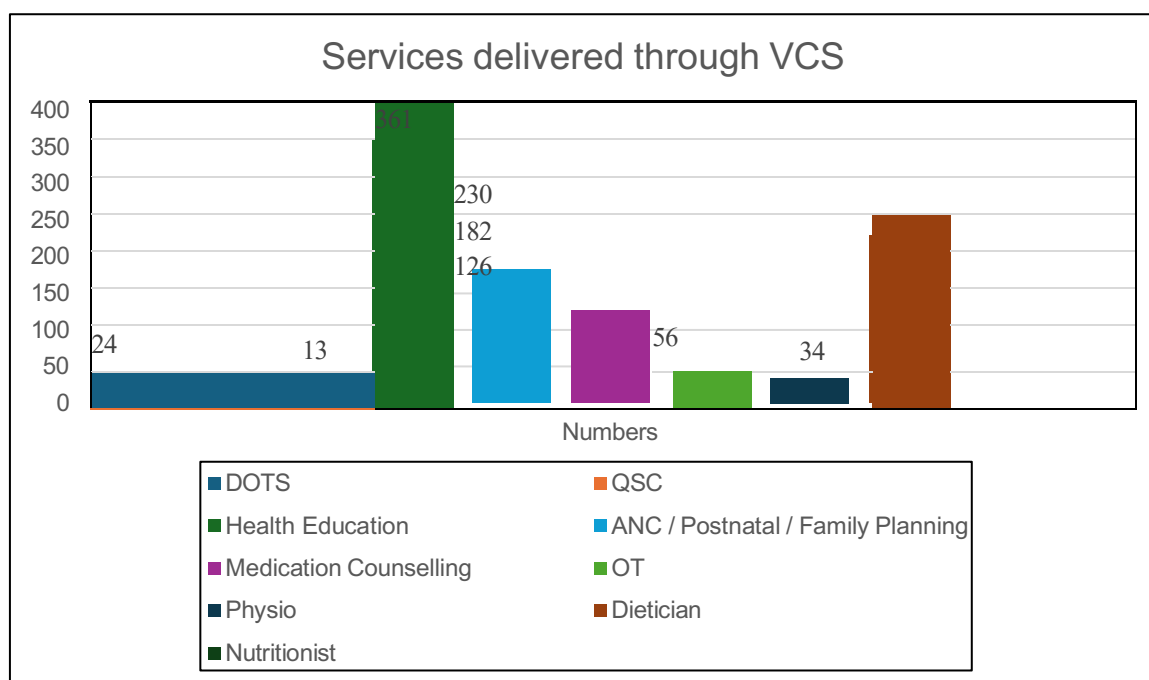


Chart 6: Services delivered through VCS



DISCUSSION

The sociodemographic characteristic of this study revealed that majority of the clients were between the ages of 25-59 years old which are 96.8% of the clients. In comparison with clients aged equals or more than 60 years old, 1.1% and aged 18-24 years old 2.1%. This vast difference of age group showed that clients between the ages of 25-59 years are those clients in the working group. They are the ones that can follow instructions given better, pertaining to the running of VCS and were able to attend the sessions. This finding is consistent with a study done in Mongolia, China which concluded that older aged patients were disadvantaged with regards to access to

myHealth and its functions⁴.

Furthermore, the sociodemographic characteristics also showed that clients with tertiary education background level utilized the VCS more, which comprised of 83.1%, followed by clients with secondary education background level, 16.2%. These findings highlight that adequate literacy level of minimum secondary school education is of great importance in order to handle VCS as it requires many information technology technicalities, which may be difficult in elderly patients. For school and college attendees, VCS platform may be difficult for them as many will be in classes during clinic operational hours. Our finding is similar with

both studies done in Mongolia, China which deduced that those of less educated were disadvantaged with regards to access to mHealth and use of VCS.⁴ Another local study done in Sunway Medical Center, Selangor and Kuala Lumpur, Malaysia, also concluded that secondary and tertiary education level patients were more inclined to VCS⁵.

In terms of comorbidities, majority of clients had DM, hypertension, IHD and dyslipidaemia reflecting that patients of NCDs are the main bulk of patients visiting Buntong Health Clinic either for their follow-up or other acute problems. These findings showed that these patients would benefit tremendously especially with regards to prevention and reduction of disease complications.

Additionally, we can also deduce that majority of services rendered were health education given in the outpatient settings which includes NCD, CD, etc, followed by dietitian services, followed by MCH settings, nutritionist and lastly medication adherence counselling by the pharmacists. These outcomes are in parallel with the type of patients visiting our government health clinics; patients receiving treatment for NCDs, CDs, MCH as well as services from the pharmacists, dietitian and nutritionist.

CONCLUSION

In conclusion, VCS in Buntong Health Clinic has been receiving encouraging feedback, both from healthcare professionals and patients. Further strengthening of the services is vital to achieve vast coverage of patients with awareness and improve their digital literacy especially among elderly and less educated patients. Future qualitative and quantitative study to explore further on clients' satisfaction and healthcare providers' satisfaction would also be beneficial. Digitalizing healthcare would be cost-effective in many ways and should work hand in hand with physical care from dedicated healthcare providers.

Conflicts of interest

All authors declare that they have no conflict of interest.

REFERENCES

1. Malaysian Medical Council Guideline on Telemedicine [Internet]. [cited 2026 Mar 4]. Report. Available from: <https://mmc.gov.my/wp-content/uploads/2024/01/MMC-Guideline-on-Telemedicine.pdf>
2. Pembangunan Kesihatan Keluarga Kementerian Kesihatan Malaysia B. GARIS PANDUAN PERKHIDMATAN KONSULTASI SECARA MAYA (VIRTUAL CONSULTATION SERVICES) DI KLINIK KESIHATAN MyGovUC 2.0 Google Workspace (GWS) melalui aplikasi Google Meet. 2022. Report.
4. Recommendations on digital interventions for health system strengthening. Geneva; 2019. Report.
5. Cao L, Chongsuvivatwong V, McNeil EB. The

Sociodemographic Digital Divide in Mobile Health App Use among Clients at Outpatient Departments in Inner Mongolia, China: Cross-sectional Survey Study. *JMIR Hum Factors*. 2022 Apr 1;9(2). doi:10.2196/36962

6. Esa N, Chi OW, Tan E, Yee WS, Ming WT. Characteristic of Patients Attending Virtual Clinics and their Feedbacks during Covid-19 Pandemic: A Malaysian Urban Private Health Care Experience. *Ann Community Med Prim Health Care* [Internet]. 2022. Report. Available from: <http://meddocsonline.org/>