

Barriers to the Use of Information and Communication Technologies (ICTS) in the Provision of Community-Based Mental Health Services: Case of the Northwest and Southwest Regions of Cameroon

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ABSTRACT

Vulnerable populations affected by mental disorders living in communities of the Northwest and Southwest Regions of Cameroon suffer from near absent or inadequate mental health services. Understanding the barriers in the use of information and communication technologies (ICTs) is crucial for mental health professionals living and working in these communities as it offers them opportunities to explore options as they continue to provide much-needed community-based mental health services to clients in these communities. Thus, the purpose of this study was to investigate the barriers to the use of ICTs in the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon. More specifically, the study sought to ascertain the extent to which barriers in the use of the telephone, computers and the internet affected the provision of community-based mental health services. The study employed a case study research design using qualitative techniques. Interviews and observations were used to obtain data from a sample of 25 mental health practitioners working at office and field locations in the Northwest and Southwest Regions of the country. Data was analyzed using content analysis with the support of ATLAS.ti software version 8.0. Based on the findings, recommendations were made to mental health professionals and community service providers who were advised to increase their ICT competency and proficiency in order to emerge as better professionals in today's globalized, industrialized and highly competitive job market in order to continue to provide comprehensive and sustainable community-based mental health services to vulnerable populations affected by mental disorders in the Northwest and Southwest communities of Cameroon and beyond. Suggestions for further studies were also made.

KEYWORDS: *Barriers, Opportunities, The Use of ICTs, The Telephone, Computers, The Internet, and Community-Based Mental Health Services*

INTRODUCTION

According to Hashemi and Kew (2021), Information and Communication Technologies (ICTs) has recently been a hot topic in mental healthcare around the world. The application of ICTs in the provision of community-based mental health services is a relatively recent phenomenon. Moreover, it has been the subject of interest to mental health researchers and

practitioners for over two decades in order to figure out a way of tackling the barriers of using ICTs and as well as for incorporating it into the mental health service provision. The use of ICTs in the provision of community-based mental health services is very important for providing opportunities for mental health professionals to learn to operate in an

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information age. Studying the obstacles to the use of ICTs in mental health service provision may assist practitioners to overcome these barriers and become successful technology adopters in the future.

Gradually but steadily, mental health practitioners are increasingly incorporating the use of ICTs in the provision of their professional services in their communities. According to Martin, Brown, DeHayes, Hoffer and Perkins (1999), a good number of these professionals today have different technological gadgets such as recorders, cameras, projectors, radio, television, telephones, computers and the internet among others that they utilize in the provision of community-based mental health services.

The improvement of mental health services in community settings of low-and-middle-income countries (LMICs) has been identified as a significant global health priority (Patel et al., 2011, Collins et al., 2013, Lee et al., 2015). Toguem, Kumar, Ndeti, Njengoue and Owiti (2022) posit that in Cameroon, mental disorders represent 6.1% of the burden of all diseases. In 2017 for example, mental health disorders accounted for 2366.29 disability-adjusted life years per 100,000 population in Cameroon (WHO, 2018). According to Mviena, Fanne, Gondo, Mwamelo, Esso, Epée and Boum (2020), Cameroon is especially vulnerable to mental health problems due to the challenges of a weak health-care system, an inadequate mental health workforce, insufficient financing to pay for health care, lack of access to mental health prevention and treatment, and the added complexity posed by ongoing humanitarian crises. Additionally, the stigma of mental health problems continues to hinder and discourage individuals from seeking mental health care, further exacerbating the situation (Mviena et al, 2020).

One of the ways of improving the provision of community-based mental health services is through the use of Information and Communication Technologies (ICTs). Sharma (2003) Sanyal (2001), and Bhattacharya and Sharma (2007) submit that the various kinds of ICT products available and having relevance to mental health such as teleconferencing, email, audio conferencing, television lessons, radio broadcasts, interactive radio counselling, interactive voice response system, audiocassettes and CD ROMs are being used in the provision of community-based mental health services. Information and communication technologies have become useful in improving the provision of mental health services, especially in times of conflict and health crises. According to Oraegbunam (2009), ICTs have become relevant and useful in diverse ways such as electronic discussion forums, accessing clients' information,

delivering individual and group clinical sessions, and depositing client information for research. Multimedia and websites are important to optimize mental health services (Beidoglu, Dinçyürek, & Akıntug, 2015).

Talking about the use of telephones and mental health service provision in communities, there are now services comprising a menu of pre-coded messages or direct contact with prescribed scripts. There are also highly interactive engagements with skilled professionals (Huws & Denbigh, 1999). The anonymity this process brings to the therapeutic interaction is motivating to clients. Indeed, the use of the telephone in mental health has been so effective that Tait (1999) argued that the telephone has become normalized as a medium for mental health services in ways that have yet to happen in the case of computer-mediated communications.

As far as the use of computers is concerned in mental health service provision in communities, Vinluan (2011) maintains that the most obvious way computers can be used is in information encoding, storage and retrieval for different purposes including mental health service provision. Computers have been proven to be beneficial in supporting mental health planning and assessment activities. Vinluan (2011) found out that mental health specialists use computers for writing letters and reports, and keeping records. He further stresses that ICT proficiency should be a required skill for professional mental health providers.

With regards to the use of the internet and mental health service provision in communities, mental health professionals are also utilizing the Internet for their own information, for professional development and keeping in touch with colleagues (Rust, 1995). This technology seems to have been embraced by mental health experts as they can retrieve and disseminate information by email, videoconferencing, websites, online journals and newsletters. Supervision of practising mental health professionals through the use of the internet has also been undertaken (McMahon, 2002; Myrick & Sabella, 1995).

There are several barriers in the use of ICTs for the provision of community-based mental health services. According to Khan, Hasan and Clement (2012), although Governments across the world committed to implementing ICTs in healthcare in general and mental healthcare in particular, the process is hindered by a number of barriers. The barriers are categorized as external (first-order) or internal (second order) (Keengwe, Onchwari et al. 2008). According to Snoeyink and Ertmer (2001), first order barriers include lack of equipment, unreliability of

equipment, lack of technical support and other resource-related issues. Second-order barriers include both community level factors, such as organizational culture and individual level factors, such as beliefs about healthcare and technology and openness to change. Some of these barriers are as follows:

Insufficient Funds

Khan, Hasan and Clement (2012) contend that effective implementation of technology into mental healthcare systems involves substantial funding, that is very hard to manage in developing countries like Cameroon, where many people are living below the international poverty line. ICT-supported hardware, software, internet, audio visual aids, tools and other accessories demand huge funds. Mumtaz (2000) stated that many scholars proposed that the lack of funds to obtain the necessary hardware and software is one of the reasons mental health professionals do not use technology in the provision of community-based mental health services. Afshari, Bakar & Su-Luan et al. (2009) state that efficient and effective use of technology depends on the availability of hardware and software and the equity of access to resources by mental health professionals. These costs are in most cases inflated and cannot be provided by most developing countries, including Cameroon.

Lack of Vision and Plan

In developing countries like Cameroon, many stakeholders, mental health professionals, government, and business leaders consider that ICT investment enhances the use of computers and improves community-based mental health service provision. Even so, neither providing computer tools in healthcare (Candiotti and Clark 1998) nor providing state-of-the-art technology by itself will make any desirable changes in mental healthcare (Kent and McNergney 1999). This barrier mainly falls into two broad categories: (i) Government vision and plan and (ii) Health sector vision and plan. The Government of Cameroon's vision has emphasized the implementation of ICTs in health sector and mental health subsector with "Vision 2035" - in order to improve the quality of the healthcare system and also to create an improved healthcare environment to empower and develop the proficiency of healthcare and mental health workers in Cameroon. Effective implementation of ICTs in mental healthcare is not merely a vision. Rather, it needs a proper plan, policies, execution and monitoring: which is really a major constraint for a country like Cameroon.

Political Factors

Sharma (2003) states that the most notable of the barriers to the use of ICTs in mental healthcare in

developing countries seems to be the political will of the people in the corridors of power. The allocation of sufficient funds for the mental healthcare sector and ICTs does not seem to be very attractive to the leaders. It can be seen from the budgetary allocations in third world countries like Cameroon that greater allocations may be for the defense forces rather than mental healthcare. If the political leaders favour the technology, it will bloom. However, increasingly, more mental health professionals (in the urban areas) have computers and are well connected to the Web.

Corruption

The situation in Cameroon represents a distinct case where corruption has found a remarkably safe space in which to proliferate, despite the vigilance of control mechanisms. Corruption is so pervasive that it has evoked widespread condemnation, both inside and outside third world countries (Zafarullah & Siddique, 2001) including Cameroon. Consequently, Cameroon has been consistently ranked by Transparency International as one of the most corrupt among the researched countries like Bangladesh (Bhuiyan 2011). As a result, corruption can be identified as one of the strong barriers to the implementation of ICT in healthcare and mental healthcare. The misuse of government funds which could have been used to develop other sectors like the integration of ICTs in healthcare and mental healthcare is channeled in other directions i.e. few people benefit from those funds by pocketing all the money (Kessy et al, 2006).

Mental Health Professionals' Attitudes and Beliefs about ICTs

Mental health professionals' attitudes have been found to be major predictors of the use of new technologies in healthcare settings (Almusalam, 2001). Mumtaz (2000) states that Mental health professionals' beliefs about the provision of community-based mental health services with ICTs are central to integration. To be successful in telephone, computer and internet use and integration, Mental health professionals need "to engage in conceptual change regarding their beliefs about the nature of practice, the role of technology, and their role as service providers" (Niederhauser et al., 1999). It is found that less technologically capable mental health professionals who possess positive attitudes towards ICTs, require less effort and encouragement to learn the skills necessary for the implementation of ICTs in their mental health activities. Therefore, if mental health professionals want to successfully use technology in mental health service provision, they need to possess positive attitudes to the use of technology.

Lack of Knowledge and Skill

According to Pelgrum (2001), the success of mental healthcare innovations depends largely on the skills and knowledge of the professionals. Mental health professionals' lack of knowledge and skills is one of the main hindrances to the use of ICTs in the provision of community-based mental health services both for the developed and underdeveloped countries (Mamun, & Tapan, 2009; Pelgrum, 2001; Ihmeideh, 2009; Williams 1995). Integrating technology in the mental health service provision requires knowledge of ICT use and a level of technical expertise (Morgan 1996). Moreover, Berner (2003) found that the mental health professionals' belief in their ICT competency and proficiency was the greatest predictor of their use of ICTs in mental healthcare. Therefore, lack of knowledge regarding the use of ICTs and lack of skills on ICT tools and software have also limited the use of ICT tools in the provision of community-based mental health services in Cameroon.

Lack of Resources

Lack of resources within healthcare and mental healthcare facilities is another major hindrance to the implementation of ICTs in a developing country like Cameroon. Lack of computers (both hardware and software) and other ICT-supported tools can seriously limit the use of it by a mental health professional. Limited resources result in lack of ICT integration, which in turn results in lack of sufficient ICT experience for both clients and mental health professionals (Rosen & Weil, 1995; Winnans & Brown, 1992; Dupagne & Krendl, 1992; Hadley & Sheingold, 1993). The stakeholders and mental health professionals therefore lack adequate facilities and resources for effective implementation of ICTs in the provision of community-based mental health services.

Community-based mental health services, according to Raviola, Rose, Fils-Aimé, Thérosmé, Affricot, Valentin and Eustache (2020) refer to any interventions—assessment, diagnosis, treatment, or counseling—offered in private, public, inpatient, or outpatient settings for the maintenance or enhancement of mental health or the treatment of mental or behavioural disorders in individual, family and groups in community contexts. Meanwhile, to Caplan (2013), community-based mental health services refer to mental health services, activities or interventions that are organized and carried out within a community by mental health professionals in the best interest of members of that community.

These community-based mental health services lay emphasis on three core areas of intervention: 1) mental health wellness promotion, 2) mental health prevention and 3) mental health treatment or

rehabilitation. Community-based mental health services refer to the following among others: psycho education, psychological first aid, psychotherapy/counselling, psychological assessment and diagnosis, treatment planning, protection services, psychosocial support services, case management, administration, research and referrals. The provision of community-based mental health services refers to a structured set of implementation activities or interventions for mental health promotion, prevention, detection, treatment and support taking place on multiple delivery platforms (Patel, Chisholm, Parikh, Charlson, Degenhardt & Dua, 2016) including through the use of ICTs.

STATEMENT OF THE PROBLEM

Full mental health coverage occurs when all persons in the community needing mental health services are being catered for by the mental health system. Unfortunately, this is not always the case. From observation and interaction with colleagues, mental health services within the communities of the Northwest and Southwest Regions remain inadequate, insufficient, poor or even absent in some communities and there is dire need to increase access, quality and effectiveness of these mental health services in this part of the country amid growing demand. This growing demand is linked to the effects of stress on the population emanating from poverty, employment, and underemployment. This is also due to the ravaging effects of the ongoing Anglophone Crisis and the Covid-19 pandemic that have exacerbated mental health conditions such as anxiety, depression, post-traumatic stress disorder (PTSD) and phobias among members of these communities. Despite the efforts currently being made by practitioners to improve access, quality and effectiveness of mental health services in these communities, there is the possibility that comprehensive mental health service provision could be achieved if mental health services are associated with the use of Information and Communication Technologies (ICTs). This is because the world is becoming a global village and with advancements in technology and changing patterns in the world of work, significant numbers of mental health professionals in the area are becoming increasingly familiar and comfortable with using technology for a wide range of mental health services. This is based on claims from literature that the use of ICTs such as the telephone, computers and the internet can significantly enhance mental health service provision in such challenging situations when used in innovative ways within a community. However, there exists certain barriers that continue to act as obstacles or challenges in the effective use and integration of ICTs for the provision of community-

based mental health services in these two communities. It was based on this that the researcher sought to investigate the barriers to the use of Information and Communications Technologies (ICTs) in the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.

Specific Objectives

- To verify the extent to which barriers in the use of the telephone affects the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.
- To explore the extent to which barriers in the use of computers affects the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.
- To assess the extent to which barriers in the use of the internet affects the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.

METHODOLOGY

A qualitative methodology or approach was employed and the case study research design was used in this study wherein qualitative techniques were used to manage the data collected for the study. The Northwest and Southwest Regions of Cameroon were chosen for this research due to the presence of

numerous mental health professionals and community service providers including mental health counsellors, psychologists, psychiatrists, mental health nurses, protection officers, and case managers, among others working tirelessly in hospitals, mental health centres, community based-organizations, international relief organizations and government agencies among others to provide mental health and psychosocial support (MHPSS) services to vulnerable populations affected by mental illnesses in the area.

The study targeted 573 mental health practitioners at office and different field sites such as schools/ universities, hospitals, mental health facilities, NGOs, community organizations, private practices, inter alia. The accessible population included 535 mental health workers who were accessible to the researcher. The sample consisted of 25 mental health professionals drawn these different mental health professions using the purposive and snow ball sampling techniques. Fifteen qualitative interviews and 10 observations were used to collect data from 15 mental health program heads and 10 mental health professionals. Qualitative data obtained from the interviews and observations were analyzed using the technique of content analysis and the ATLAS.ti software version 8.0 (Friese, 2011).

RESULTS

Demographic profile of the sample

Demographic profile of the research sample is presented in this section in the form of tables and charts.

Table 1: Distribution of respondents according to Age

Age	Sample	Percentage sample
20-29years	5	19%
30-39 years	18	73%
40-49 years	2	8%
50-60 years	0	0%
Total	25	100%

Table 1 above represents the distribution of respondents according to Age. Out of the 25 respondents selected for this study, 5 of them were aged 20 to 29 years (19%), 18 of them were aged 30 – 39 years (73%) and 2 of them were aged 40 to 49 years (8%) and none of them were aged Between 50-60 years (0%). The distribution of the respondents was in this series: 30 – 39 years > 20 -29 years > 40 – 49 years > 50-60 years.

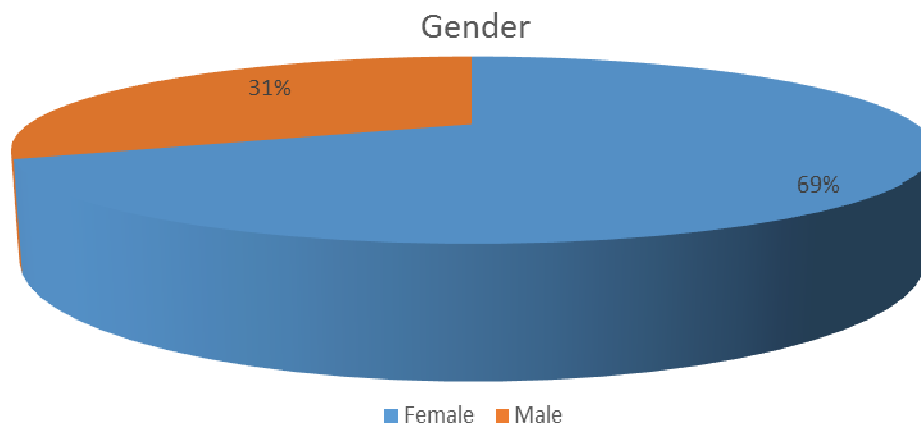


Figure 1: Distribution of respondents according to Gender

Figure 1 shows the distribution of the respondents according to Gender. Out of the 25 respondents selected for this study, 17 of them were female (69%) while 8 of them were male (31%), indicating that females dominated the study. The gender distribution of the respondents was in this series: female > male.

Research question one: What is the extent to which the barriers to the use of the telephone affects the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon?

Table 1: Interview responses on barriers to telephone use in the provision of community-based mental health services (tuamhs)

primary document	tuamhs8	tuamhs9	tuamhs10	words/pd
p 1: case 1	y	y	y	350
p 2: case 2	y	y	y	299
p 3: case 3	y	y	y	300
p 4: case 4	y	y	y	303
p 5: case 5	y	y	y	295
p 6: case 6	n	n	n	314
p 7: case 7	y	y	y	297
p 8: case 8	y	y	y	302
p 9: case 9	y	y	y	302
p 10: case 10	y	y	y	341
p 11: case 11	y	y	y	297
p 12: case 12	y	y	y	307
p 13: case 13	y	y	y	300
p 14: case 14	y	y	y	301
p 15: case 15	y	y	y	328
accum.wc	y=14 n=1	y=14 n=1	y=14 n=1	

Source: Researcher's field survey, 2022

This section addressed mental health professionals' views and opinions on the barriers to the use of the telephone for the provision of community-based mental health services. It makes use of the Qual-quan dominant paradigm and presents an exploratory thematic view of the interviewed cases.

An overwhelming majority of the cases expressed dominant views on the fact that there are barriers to the use of the telephone in the provision of community-based mental health services. Case 10 was selected for thematic illustration because she was a female mental health professional who expressed a particularly strong positive view on barriers to telephone usage for the provision of community-based mental health services. She said,

“Having a good fixed or mobile phone telephone for use in the provision of community-based mental health services is expensive due to price hikes and unaffordability of the gadgets in the market. Also, there are some areas with limited telephone connectivity and poor electricity supply, which makes phone calls and text messages for the provision of mental health services pretty difficult.”

Case 10's explanatory excerpt illuminates the fact that the use of telephones as an ICT tool for the provision of community-based mental health services in schools, hospitals, NGOs and other mental health offices within the community is often affected by a plethora of barriers or challenges, which impinge on service provision. However, all the mental health program heads asserted that they have telephones and use them in performing one or more community-based mental health services. In-depth analysis of case 3 was chosen because of the practitioner's experience in using the telephone above 10 years for counseling purposes. He said that:

“Over the past ten years in the use of telephone for community-based mental health services I noticed that most clients prefer expressing themselves better on phone most probably because they feel comfortable doing so using a channel they so desire that will enable them to provide detailed information about themselves. When clients express themselves on phone they hardly conceal anything about themselves because they know they are in an environment where they can be anonymous and discrete”.

The explanatory excerpt of case 3 presents the telephone as an indispensable ICT tool which enhances the provision of community-based mental health services amidst the challenges.

Table 2: Observation responses on barriers to telephone use in the provision of community-based mental health services

Criteria	Average (/10)	Percentage (/100)	N
There is a fixed or mobile phone available at the office.	4	40%	10
The telephone device is owned or provided by the organization.	0	0%	10
The phone is in good working order.	5	50%	10
The phone has airtime.	4	40%	10
The mental health worker uses the phone to make calls and exchange messages.	7	70%	10
The phone is used for mental health services or related activities.	8	80%	10
The use of the telephone improves mental health and related activities in terms of access, quality and effectiveness.	9	90%	10
Total	5.3	53%	10

Source: Researcher's field survey, 2022

Table 2 shows the distribution of the responses on barriers to telephone use in the provision of community-based mental health services based on the 10 mental health offices observed. The results revealed that there was inadequacy in telephone availability, poor availability of airtime for phone calls and text messaging, non-provision of telephone gadgets by the organizations, and limited possession of telephones that were in good working order. However, it was noted that the majority use the phone for calls and messages and these phone calls and messages and they use the telephone in mental health services or related activities. The observation revealed that an overwhelming majority believe the use of the telephone improves mental health and related activities in terms of access, quality and effectiveness.

Research question two: What is the extent to which the barriers to the use of computers affect the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon?

Table 3: Interview responses on barriers to computer use in the provision of community-based mental health services (cuamhs)

primary document	cuamhs11	cuamhs12	Cuamhs 13	words/pd
p 1: case 1	y	y	y	374
p 2: case 2	y	y	y	308
p 3: case 3	y	y	y	300
p 4: case 4	n	n	n	303
p 5: case 5	y	y	y	295
p 6: case 6	y	y	y	314
p 7: case 7	y	y	y	297
p 8: case 8	y	y	y	314
p 9: case 9	y	y	y	302
p 10: case 10	n	n	n	341
p 11: case 11	y	y	y	297
p 12: case 12	y	y	y	381
p 13: case 13	y	y	y	300
p 14: case 14	y	y	y	301
p 15: case 15	y	y	y	328
accum.wc	p=13 n=2	y=13 n= 2	y=13 n= 2	

Source: Researcher's field survey, 2022

This section addresses mental health professionals' views and opinions on the barriers to the use of the computer as an ICT tool for the provision of community-based mental health services. It therefore adopts the Qual-quan paradigm in presenting the interview findings. on the fact that there are barriers to the use of computers in the provision of community-based mental health services. Case 7 was selected for thematic illustration because she had a particularly strong view on the subject. She explained that:

“The advent of the computer in the field of mental healthcare has come a long way to ease the job of mental health professionals in carrying out community-based services. It provides valuable help in the collection, storage and easy retrieval of clients’ information. However, many barriers affect the use of the computer for community-based mental health services such as the fact that many mental health professionals lack computer devices such as Desktops, laptops, palmtops and computer accessories such as printers, scanners, projectors, photocopiers, among others. This is due to inability to afford the gadgets. Again, poor electricity supply and limited ICT competency are other challenges that perturb the effective use of computers in the provision of community-based mental health services.”

Case 7’s explanatory excerpt illuminates the fact that the use of computers as an ICT tool for the provision of community-based mental health services in schools, hospitals, NGOs and other mental health offices within the community is often affected by a plethora of barriers or challenges, which impinge on service provision. However, all the mental health program heads asserted that they have computers and use them in performing one or more community-based mental health services. An in-depth thematic analysis of case 4 revealed that:

“I love the computer and have a positive mindset towards its use; however, I do not use it for community-based mental health services because I do not have one but I plan on buying it so I could learn how to use it for mental health services within the community I serve. It excites me a lot when I see my colleagues using the computer for mental health services and I think it greatly helps them to facilitate their mental health services. Before the end of 2022 I think I will be proficient in the use of the computer for effective community-based mental health service provision.”

The explanatory excerpt of case 4 presents the computer as an indispensable ICT tool which enhances the provision of community-based mental health services despite the challenges.

Table 4: Observation responses on barriers to computer use in the provision of community-based mental health services

Criteria	Average (/10)	Percentage (/100)	N
There are computer devices available such as desktops, laptops, tablets, etc.	3	30%	10
The computer devices are owned or provided by the organization.	2	20%	10
The computer devices have basic operating system and software applications such as Microsoft Office (Word, PowerPoint, Excel, PDF, Internet browser, etc).	4	40%	10
These computer devices have accessories to enhance mental health services and work-related activities such as printer, scanner, photocopier, projector, etc.	5	50%	10
These computer devices are used to perform essential operations such as writing reports, creating presentations, conducting psychological assessments and for research purposes.	9	90%	10
These computer devices help in the provision of mental health services or related activities.	8	80%	10
The use of computers enhances mental health and related activities in terms of access, quality and effectiveness.	9	90%	10
Total	5.7	57%	10

Source: Researcher’s field survey, 2022

Table 4 shows the distribution of the responses on barriers to computer use in the provision of community-based mental health services based on the 10 mental health offices observed. The results revealed that there is inadequacy in computer availability, poor availability of computer softwares and applications, limited provision of computer gadgets by the organizations, and limited computer accessories such as printers, scanners, photocopiers and scanners, among others. However, it was noted that the majority use computers for basic essential operations as well as mental health services and other related activities. The observation revealed that an overwhelming majority believe the use of computers improves community-based mental health services and related activities in terms of access, quality and effectiveness.

Research question three: What is the extent to which the barriers to the use of the internet affect the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon?

Table 5: Interview responses on barriers to internet use in the provision of community-based mental health services (iuamhs)

primary document	iuamhs14	iuamhs15	iuamhs16	words/pd
p 1: case 1	y	y	y	342
p 2: case 2	y	y	y	362
p 3: case 3	y	y	y	297
p 4: case 4	y	y	y	311
p 5: case 5	y	y	y	287
p 6: case 6	y	y	y	305
p 7: case 7	y	y	y	314
p 8: case 8	y	y	y	302
p 9: case 9	y	y	y	309
p 10: case 10	y	y	y	331
p 11: case 11	y	y	y	287
p 12: case 12	y	y	y	351
p 13: case 13	y	Y	y	330
p 14: case 14	y	Y	y	311
p 15: case 15	y	Y	y	318
accum.wc	p=15 n= 0	y= 15 n= 0	y=15 n=0	

Source: Researcher's field survey, 2022

This section addresses mental health professionals' views and opinions on the barriers to the use of the internet as an ICT tool for the provision of community-based mental health services. It therefore adopts the Qual-quantum paradigm in presenting the interview findings. On the fact that there are barriers to the use of the internet in the provision of community-based mental health services. Case 1 was selected for thematic illustration because he had a particularly strong view on the subject. He explained that:

"I received training in the use of ICT tools in the provision of community-based mental health services and this knowledge has helped me over the past 4 years as I have been using the internet to search any mental health information needed, to watch simulations of counselling sessions, to store and to retrieve clients' information via secured locations on the web. However, I face a variety of barriers in the use of the internet for mental health service provision such as poor electricity to charge devices, high prices of internet gadgets, poor internet connection and high prices for internet connectivity."

It is clear in the excerpt and from other cases that internet greatly facilitates the execution of community-based mental health services. Thirteen cases asserted that they mostly have internet connection for use in the provision of community-based mental health services while 2 cases said they do not have regular internet connection to be used to provide community-based mental health services. An overwhelming majority of the respondents said they have no experience in the use of the internet for the purpose of providing community-based mental health services. Cases 15 however intimated that:

"I received training in the use of ICT tools but not specifically for the purpose of mental health service provision. I have been using the internet for different purposes but did not see the need to use it for community-based mental health services, however seeing my colleagues using the internet to facilitate mental health services served as an eye opener. I developed a positive view towards its use but I have not started using it. My colleagues now help me to explain how I can use the internet for mental health service provision and I am optimistic about the fact that I will start using it very soon."

The explanatory excerpt of case 15 presents the internet as an indispensable ICT tool which enhances the provision of community-based mental health services despite the challenges.

Table 6: Observation responses on barriers to internet use in the provision of community-based mental health services

Criteria	Frequency	Percentage	N
There is a router, internet mast or wireless connection that provides internet connection.	2	20%	10
The internet device is owned or provided by the organization.	3	30%	10
Gadgets that use the internet are available.	4	40%	10
There are devices or gadgets connected to the internet.	3	30%	10
Mental health worker(s) use the internet to facilitate mental health services or related activities.	8	80%	10
The use of the internet improves mental health and related activities in terms of access, quality and effectiveness.	8	80%	10
Total	4.7	47%	10

Source: Researcher's field survey, 2022

Table 6 shows the distribution of the responses on barriers to internet use in the provision of community-based mental health services based on the 10 mental health offices observed. The results revealed that there is inadequacy in internet connectivity, poor availability of gadgets that use the internet, and limited provision of internet devices by the organizations, and limited computer. However, it was noted that the majority use the internet for mental health services and other related activities and they use the telephone in mental health services or related activities. The observation revealed that an overwhelming majority believe the use of the internet improves community-based mental health services and related activities in terms of access, quality and effectiveness.

Table 2: Summary of the findings

Variables	Decision
Barriers to telephone use	Barriers to a very high extent (96%) exist in the use of the telephone for the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.
Barriers to computer use	Barriers to a very high extent (92%) exist in the use of computers for the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.
Barriers to internet use	Barriers to a very high extent (84%) exist in the use of the internet for the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.

DISCUSSION

Barriers in telephone use for the provision of community-based mental health services

Mental health professionals reported diverse opinions which indicated that there exist barriers in the use of the telephone for the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon. To a very high extent (96%), they reported through detailed interviews and observations that there are inadequate fixed and mobile telephone gadgets available at the office for use, functional smartphones are unavailable due to limitations in affordability as a result of price hikes, and limited airtime due to cost imperatives with credit purchase load phone airtime for calls and text messages. There is also the problem of intermittent power supply making it difficult to recharge phones, limited ability to use phones for professional use, and the non-provision of phones for

work related use at the workplace. To them, these challenges act as barriers towards the use of the telephone in the provision of community-based mental health services. The mental professionals however underscored the importance of using the telephone in this era of globalization, industrialization and changing patterns of work in the provision of community-based mental health services in order to increase access, quality and effectiveness.

This finding is in line with the Technology Acceptance Model (TAM) where Davis (1989) theorizes that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. TAM states that user acceptance of new technology is affected by perceived usefulness and perceived ease of use (Davis, 1989). Perceived usefulness is defined as the degree to which a user believes that using a particular technology would improve his job

performance. On the other hand, perceived ease of use is defined as the degree to which a person believes using a particular technology will be free of effort (Davis, 1989). This theory is relevant to this finding in that it portrays how mental health professionals are increasingly accepting to use ICTs to conduct mental health services in communities based primarily on their individual perceptions on the usefulness and ease of use of these ICT tools in promoting extensive provision of community-based mental health services. In this connection, mental health professionals who do not master how to effectively use the telephone for work-related calls and text messages would have a hard time using the device for community-based mental health services due to their inability to discern its usefulness and ease of use.

Barriers to computer use for the provision of community-based mental health services

Mental health professionals reported diverse opinions which indicated that there exist barriers to the use of computers for the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon. To a very high extent (92%), they lamented over the lack of computers and accessories such as printers, scanners, photocopiers and projectors for use due to non-provision by their employers, the financial constraints involved in the purchase of Desktops, laptops and tablets for use, and the unavailability of electricity installations and internet connectivity to support the use of these computer devices. The mental health workers also complained about their limited ICT proficiency and competency to use computers and their associated hardwares and softwares as a major impediment to service delivery. Intermittent power supply making it difficult to recharge phones, limited ability to use phones for professional use, and the non-provision of phones for work related use at the workplace. To them, these challenges act as barriers towards the use of the telephone in the provision of community-based mental health services. The mental professionals however underlined the importance of using computers in this era of globalization, industrialization and changing patterns of work in the provision of community-based mental health services in order to increase access, quality and effectiveness.

This finding is in line with the Diffusion of Innovations (DOI) paradigm where Everett Rogers (1995) builds up on the Modernization theory and the Information society theory to dwell on the paradigm shift towards innovations and the use of new technologies in all walks of life, mental healthcare inclusive. To Rogers (1995), DOI is a theory of how,

why and at what rate new ideas and technology spread through cultures, operating at the individual or community level. The theory indicates that innovations are communicated through certain channels over time and within a particular social system. According to this theory, individuals adopt innovations with varying degrees of willingness (Rogers, 1995). This theory, therefore, relates to this finding in that mental health professionals in developing countries such as Cameroon need to move ahead with the rest of the world by embracing innovations and positive change through individual and collective adoption and use of ICTs which has been proven by literature (Silverstone, Berker, Hartmann, Punie & Ward, 2006) to enhance the provision of community-based mental health services. However, mental health professionals who do not master the use of computers due to limited ICT proficiency will adopt computer use at a slower pace, and this constitutes a barrier to effective computer use for the provision of community-based mental health services.

Barriers to internet use for the provision of community-based mental health services

Mental health professionals reported diverse opinions which indicated that there exist barriers to the use of the internet for the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon. To a high extent (84%), they cited problems affecting internet use in the provision of community-based mental health services such as poor electricity, limited internet connection, high cost of internet devices and airtime, and poor knowledge and skills in the use of the internet as barriers to the effective use of the ICT tool for service delivery. The mental professionals however emphasized the importance of using the internet in this era of globalization, industrialization and changing patterns of work in the provision of community-based mental health services in order to increase access, quality and effectiveness.

This finding is in line with Maslow's (1943) hierarchy of needs theory which is a motivational theory in psychology comprising a five-tier model of human needs, often depicted as hierarchical levels within a pyramid. From the bottom of the hierarchy upwards, the needs are: physiological (food and clothing), safety (job security), love and belonging needs (friendship), esteem, and self-actualization. This five-stage model can be divided into deficiency needs and growth needs. The first four levels are often referred to as deficiency needs (*D-needs*), and the top level is known as growth or being needs (*B-needs*). Deficiency needs arise due to deprivation while

growth needs arise due to aspirations and are said to motivate people when they are unmet (Maslow, 1943). The theory is relevant to this finding in that mental health workers through the provision of community-based mental health services are committed to finding solutions to the mental health needs of vulnerable persons in communities. Mental health workers do this bearing in mind that the mental health conditions of clients may stem from unmet deficiency and growth needs. By helping them to solve their mental disorders, the mental health practitioners are able put these clients back on the path to self-actualization within their communities. In this regard, mental health professionals who do not master the use of the internet would not see the need to integrate the use of the internet in service delivery and would develop resistance or hesitation in the use of the internet for work-related activities. This would therefore constitute a barrier to the use of the internet in the provision of community-based mental health services.

CONCLUSIONS

This study investigated the barriers to the use of ICTs in the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon. More specifically, the study explored the extent to which barriers to telephone use, computer use and internet use affected the provision of community-based mental health services. The study revealed following qualitative analysis by ATLAS.ti version 8.0 that mental health practitioners who used ICTs in their day-to-day activities were more likely to increase access, quality and effectiveness of community-based mental health services. However, during the interviews and observations, it was realized that availability of ICT facilities, electricity and internet were found to be statistically significant barriers of ICT integration in the mental healthcare process. The leading challenges or barriers to ICT use in the provision of community-based mental health services in communities across the Northwest and Southwest Regions of Cameroon were inadequate funding, closely followed by lack of training on ICTs and lack of motivation by mental health practitioners to use ICTs to improve access, quality and effectiveness of community-based mental health services. Based on the findings, it was recommended that mental health practitioners should increase their mastery of the use of information and communication technologies such as telephones, computers and the internet. This can be achieved by enrolling in short courses or training programs as well as organizing, attending and participating in capacity building workings and training seminars on the use of ICTs in mental healthcare. This will improve their overall ICT

competencies and equip them for state-of-the-art service delivery in today's globalized society. It was suggested that another study should be carried out on the barriers to the use of ICTs in the provision of community-based mental health services in the other eight French-speaking Regions of Cameroon to compare the findings against this one. Finally, a quantitative or a mixed study should be carried out in the future on this same issue to compare the findings against this one which was a qualitative study.

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