Use of Computers and the Provision of Community-Based Mental Health Services in the Northwest and Southwest Regions of Cameroon

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ABSTRACT

The purpose of this study was to investigate the effects of the use of computers on 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 the use of telephones, The target population of the study consisted of 405 mental health professionals working in the Northwest and Southwest Regions of the country. The study employed the sequential explanatory mixed methods research design. Quantitative data was collected through a questionnaire while a semi-structured interview guide and an observational checklist were used to collect qualitative data from a sample of 300 mental health professionals. Questionnaires were completed by 275 participants while 15 participants were interviewed and 10 others were observed in the two Regions. The purposive and snowball sampling techniques were used to select the sample. Data were analyzed with the aid of the Statistical Package for Social Sciences (SPSS) version 26.0 for Windows. Descriptive statistics and inferential statistics were used to analyze quantitative data while qualitative data was analyzed using content analysis with the support of ATLAS.ti software version 8.0. The findings revealed that the use of computers (r=.654, df=425, p=0.003) has a positive correlation with the provision of community-based mental health services. However, it was observed that inadequate computer facilities, electricity and internet, mental health professionals' lack of training on computers and the lack of motivation by mental health practitioners to use computers for service delivery are limiting factors to computer use in the provision of community-based mental health services. Based on the findings, recommendations were made to mental healthcare trainers, mental health professionals, vulnerable persons affected by mental disorders, the government and other researchers in Cameroon on measures to enhance computer use and integration in mental healthcare research and practice.

INTRODUCTION

Computers play a vital role in modern mental health service provision, supporting functions such as assessment, diagnosis, treatment planning, and record-keeping (Coyle, Doherty, Matthews, & Sharry, 2007). According to Belnap (2019), a computer refers to a device for processing, storing, and displaying information. It is an electronic device that manipulates information, or data and has the ability to store, retrieve, and process data. Computer once meant a person who did computations, but now the term almost universally refers to automated electronic machinery (Belnap, 2019). Gollmann (2010) contends that a computer can be used to type documents, send email, play games, and browse the Web. It can also be used to edit or create spreadsheets, presentations, and even videos. Müller (2002) posits that supercomputers, mainframe computers, minicomputers and personal computers (PCs) or microcomputers are the four main types of computers. Supercomputers are powerful computers that can

process large amounts of data and do a great amount of computation very quickly. Mainframe computers are high-performance computers used for large information processing jobs. Minicomputers refer to mid-range computers that are intermediate in size, power, speed, and storage capacity between a mainframe and a microcomputer. Meanwhile, Müller (2002) states that personal computers (PCs) are small computers designed for use by a single user at a time and they include: desktops which are designed to stay at one location and fit on or under a desk with a a monitor, keyboard, mouse, and a tower (system unit); laptops which are portable personal computers that are small enough to rest on the user's lap and can be powered by a battery; tablets which are wireless touchscreen PCs that are slightly smaller and weighs less than the average laptop; and finally smartphones which are mobile phones that perform many of the functions of a personal computer. Gollmann (2010) contends that computer accessories or peripheral devices include terminals, printers, external floppy disk drives and other data storage devices, video monitors, keyboards, interface boards, external memory expansion cards, and other input/output devices such as scanners, photocopiers, projectors, lamination machines, and perforation machines that may or may not contain digital circuitry. Another ICT tool under investigation in this study is the computer.

In line with computers and mental health service provision in communities, computers were seen by mental health professionals as useful resources for clients for registering and encoding information, analyzing psychological tests and storing relevant records (Guillot-Miller & Partin, 2003). Coyle, Doherty, Matthews and Sharry (2007) maintain that the most obvious way computers are used is in information encoding, storage and retrieval for different purposes in mental health service provision. Computers are also beneficial in supporting mental health planning and assessment activities. Guillot-Miller and Partin (2003) emphasized that the education of mental health experts can be enhanced through the use of laptops, desktops, and tablets (handheld computers) among others. Vinluan (2011) affirms that mental health specialists use computers for writing letters and reports, and keeping records. Coyle et al (2007) stress that ICT proficiency should be a required skill for professional mental health providers. Computers are a quick and sure means to carry out measurement and evaluation of mental health programmes. Computer-based tests are devoid of bias as they introduce acumen and acuity in the process of measurement and reporting for a valued conclusion. With the use of computer software programs, computer-administered interviews and

rating scales can be more comprehensive and reliable, and less biased than evaluations routinely conducted in clinical practice (Vinluan, 2011).

In Cameroon, it is evident that computers have the potential to significantly increase access, quality and effectiveness of mental health services, freeing it from constraints of time and space. For example, Achale, Tani and Chongwain (2007) found that mental health counsellors alongside other stakeholders (lecturers, students, university administrators and multimedia centre coordinators) in Cameroon State Universities had a positive perception that the use of ICTs could enhance the quality of mental health and psychosocial support services they offer to clients (students) within the university community in Cameroon. Their participants however outlined obstacles that hindered the effective adoption and utilization of ICTs in service provision. These included: inadequate computers and other ICT equipment, lack of skills and knowledge on ICT usage, poor and slow internet connections, high cost of ICT equipment and irregular electricity supply. The present study builds on this to verify whether the use of computers could improve access, quality and effectiveness of community-based mental health services.

STATEMENT OF THE PROBLEM

Ideally, mental health services of good quality and of high efficacy should be available to all members of a community who are in need of such services. However, from observation and interaction, the provision of community-based mental health services remains poor, insufficient and inadequate, and even absent in some communities in the Northwest and Southwest Regions of Cameroon. This unfortunate situation has been blamed largely on the paucity of mental health professionals to cater for the mental health needs of the population. This is reflected in poor availability of mental health services, difficulty to access existing professionals and services, limited mental health coverage in communities, poor quality of care provided and inadequacies in meeting the mental health goals and objectives set by mental health providers in vulnerable communities. The shortage of mental health practitioners coupled with the growing demand for their services has exacerbated the problem. This growing demand has been linked to the ravaging psychological effects of humanitarian crises affecting the Regions that have exacerbated mental health conditions such as anxiety, depression, post-traumatic stress disorders (PTSD) and phobias among community dwellers. Despite the efforts currently being made by practitioners to improve access, quality and effectiveness of mental

health services in these communities, these challenges related to service provision persist. The world has become a global village and with advancements in technology and changing patterns in the world of work, there is need for mental health practitioners in the Regions to normalize telephone use to enhance service provision. Unfortunately, some mental health professionals lack telephone literacy, others are resistant to change from traditional service delivery methods, and there are limited school-based and in-service training programs that promote computer education and awareness for integration in mental health. At the moment, community-based mental health services operate at a limited scale amidst concerns that not all practitioners are optimizing computer use in service provision. Based on the need for comprehensive mental health coverage in the country, there is a distinct possibility that if practitioners maximize the use of computers, service delivery would be greatly enhanced. This is based on claims from literature that computers when used in innovative ways can significantly enhance mental health service provision within communities. It was based on this that the researcher sought to investigate the effects of computer use on the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.

METHODOLOGY

The sequential explanatory mixed methods research design was used in this study wherein both quantitative and qualitative techniques were used to manage the data collected for the study. The Northwest and Southwest Regions were chosen for this research due to the presence of numerous mental health practitioners such as psychiatrists, psychologists, clinical counsellors, psychiatric nurses, case workers, protection (child, disabilities and gender-based violence) workers and social workers working tirelessly in hospitals, mental health facilities, community based-organizations, international relief organizations, correctional/rehabilitation facilities, private practices and government agencies among others to assuage the mental health problems of vulnerable persons in these two Regions. These communities have a growing number of mental health practitioners, and these mental health practitioners have access to computers, with some of them making use of this ICT tool as an adjunct to mental health services.

The study targeted 405 mental health professionals in the Northwest (NW) and Southwest (SW) Regions of Cameroon. Meanwhile, the accessible population included 376 mental health professionals working in various institutions and communities across the Northwest and Southwest Regions. The accessible population was based on accessibility given the ongoing Anglophone Crisis in the two Regions. The choice of these two Regions was based on convenience. The sample consisted of 300 participants, 159 participants were selected from the SW while 141 were selected from the NW Region using the purposive and convenience sampling techniques. Accordingly, the population and sample were drawn from the communities of interest in the Northwest Region notably Bali, Bamenda, Fundong, Kumbo East, Kumbo West, Mbengwi, Nkambe, Santa and Tubah and those of the Southwest Region namely Buea, Limbe, Tiko, Mamfe, Kumba North, Kumba South, and Ekona. A questionnaire, a semi-structured interview guide and an observation schedule/guide were used as instruments for data collection.

Table 1: Population and sample distribution table

Regions	Communities	Target Population	Accessible population	Sample
Northwest (19 health communities or districts)	1. Ako	2	2	
	2. Bafut	4	3	
	3. Bali	17	16	12
	4. Bamenda	48	46	44
	5. Batibo	3	3	
	6. Benakuma	5	4	
	7. Fundong	16	15	12
	8. Kumbo East	13	13	10
	9. Kumbo West	9	9	8
	10. Mbengwi	18	17	15
	11. Ndop	1	1	
	12. Ndu	1	1	
	13. Njikwa	1	1	
	14. Nkambe	16	16	13
	15. Oku	2	1	
	16. Santa	25	23	19
	17. Tubah	21	20	17
	18. Wum North	5	4	
	19. Wum South	2	2	
Southwest (18 health communities or districts)	20. Bangem	2	2	
	21. Buea	37	35	34
	22. Konye	1	0	
	23. Limbe	19	18	16
	24. Eyumedjock	3	2	
	25. Mbonge	4	2	
	26. Mundemba	3	2	
	27. Muyuka	3	3	
	28. Tiko	18	17	15
	29. Bakassi	4	2	
	30. Tombel	2	2	
	31. Akwaya	0	0	
	32. Mamfe	23	20	18
	33. Kumba North	34	33	32
	34. Kumba South	25	25	23
	35. Fontem	2	1	
	36. Ekona	14	13	12
	37. Ekondo Titi	3	2	
Grand total		405	376	300

Source: OCHA Cameroon, 2022; WHO Health Cluster, 2020; MINSANTE NW & SW; MHPSS TWG NW_SW; and UNFPA Database for Implementing Mental Health Organizations (Researcher's Survey, 2022).

Validation of the instruments was done by the researcher, his classmates, the supervisors, some practising mental health professionals and the statistician so as to ensure validity through face validity, content validity and construct validity. A pilot study was carried out on 10 mental health professionals working in Bamenda, who were not part of the sample to ensure reliability of the instruments. Reliability of the instruments was computed and obtained using the Cronbach Alpha coefficient of internal consistency using the Statistical Package for Social Sciences (SPSS) software version 26.0. After the instruments were constructed and their validity and reliability was ascertained, the researcher proceeded to collect data immediately using both personally (self-delivery) and through colleagues (research assistants) using the snowball technique.

Data was analyzed quantitatively using the Statistical Package for Social Sciences (SPSS) software version 26.0. Descriptive statistics such as frequencies tables containing the various weighted responses, percentages, measures of central tendencies (mean), and dispersion (standard deviation) were generally used to provide answers to the research questions. The Pearson product moment correlation test was also used to compare means within the variables under investigation, thereby supplying the inferential statistics for this study. The Pearson product moment correlation was used to determine the magnitude and direction of the relationship between computer use and the provision of community-based mental health services. 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). Ethical issues such as informed consent, voluntary participation, confidentiality, access to the community, and creation of friendly rapport were taken into consideration during data collection and analysis.

RESULTS

Demographic Profile of the Respondents

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

Table 2: Distribution of respondents according to Mental Health Professions

Mental health professions	Frequency	Percentages
Clinical counsellors	108	36%
Psychologists	24	8%
Psychiatrists	18	6%
Psychiatric nurses	39	13%
Social workers	30	10%
Protection workers	45	15%
Case workers	36	12%
Total	**300**	**100%**

Table 2 above represents the distribution of respondents according to the Mental Health Professions. Out of the 300 respondents selected for this study, 108 (36%) of them were clinical counsellors, 24 (8%) of them were psychologists, 18 65%) of them were psychiatrists, 39 (13%) were psychiatric nurses, 30 (10%) were social workers, 45 (15%) were protection workers while 36 (12%) of them were case managers indicating that clinical counsellors dominated the study.

Figure 1: Distribution of respondents according to Gender
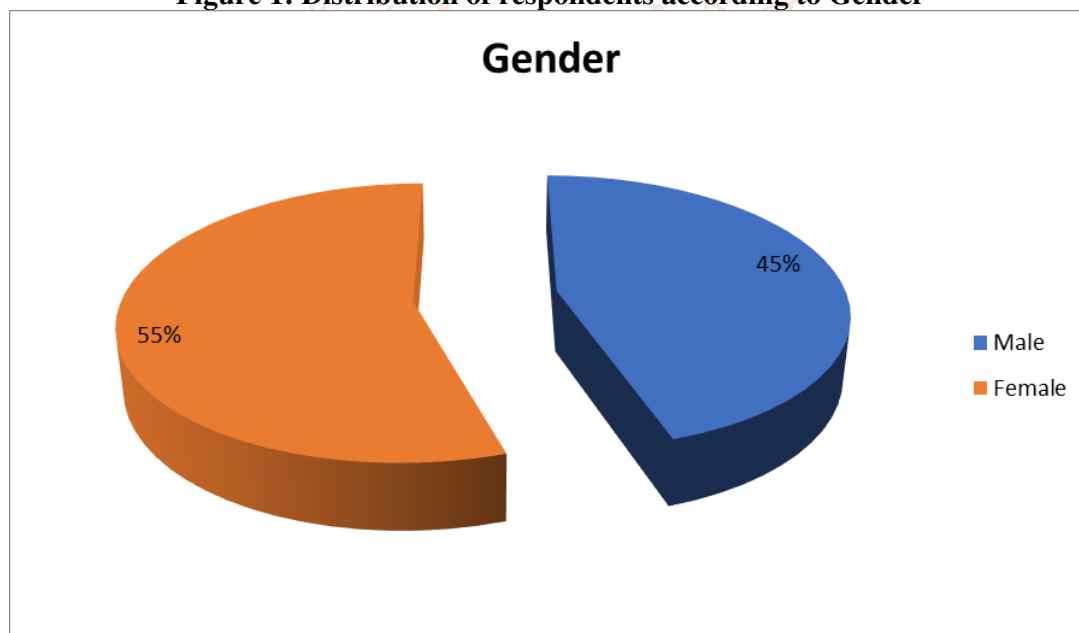

Figure 1 above displays the distribution of the respondents according to Gender. Out of the 300 respondents selected for this study, 165 (55%) of them were females and 135 (45%) of them were males indicating that the females dominated the study.

Table 3: Distribution of respondents according to Age

Age range	Frequency	Percentages
Below 35 years	129	43%
35-44 years	114	38%
45-60 years	57	19%
Total	**300**	**100%**

Table 3 above showcases the distribution of respondents according to the Age. Out of the 300 respondents selected for this study, 129 (43%) of them were below 35 years, 114 (38%) of them were within the 35-44 years age bracket, while 57 (19%) of them were aged 45-60 years.
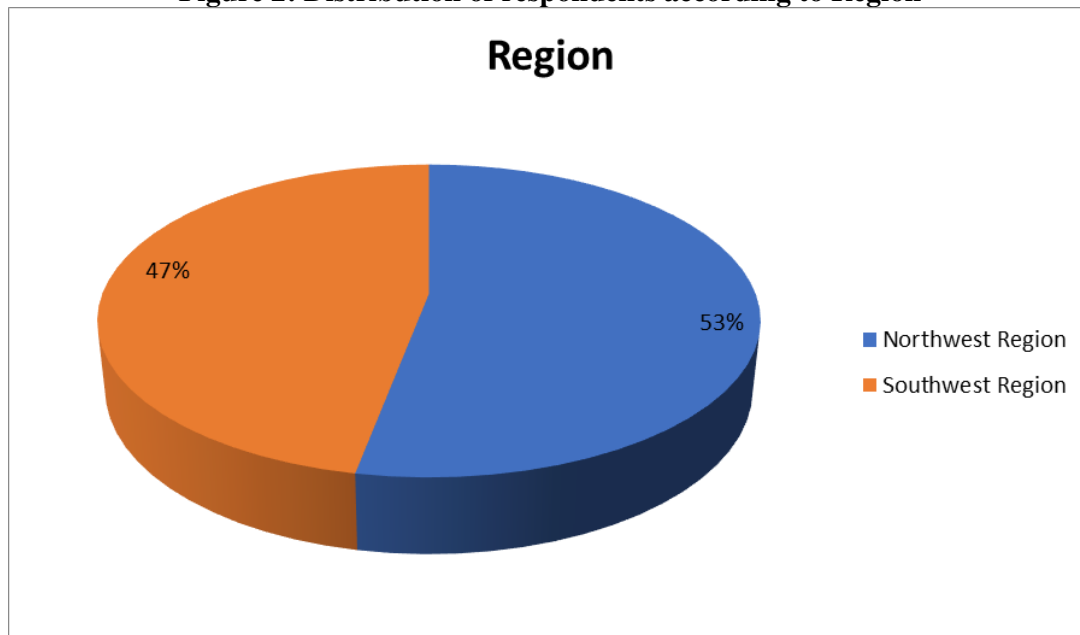
Figure 2: Distribution of respondents according to Region

Figure 2 above shows the distribution of the respondents according to Region. Out of the 300 respondents selected for this study, 159 (53%) of them were from the Northwest Region while 141 (47%) of them were from the Southwest Region.

Table 4: Distribution of respondents according to Experience

Experience	Frequency	Percentages
0-10 years	186	62%
11-20 years	93	31%
21 years and above	21	7%
Total	**300**	**100%**

Table 4 above showcases the distribution of respondents according to the Experience. Out of the 300 respondents selected for this study, 186 (62%) of them had 0-10 years of job experience, 93 (31%) of them were within 11-20 years job experience while 21 (7%) of them had job experience of 21 years and above.
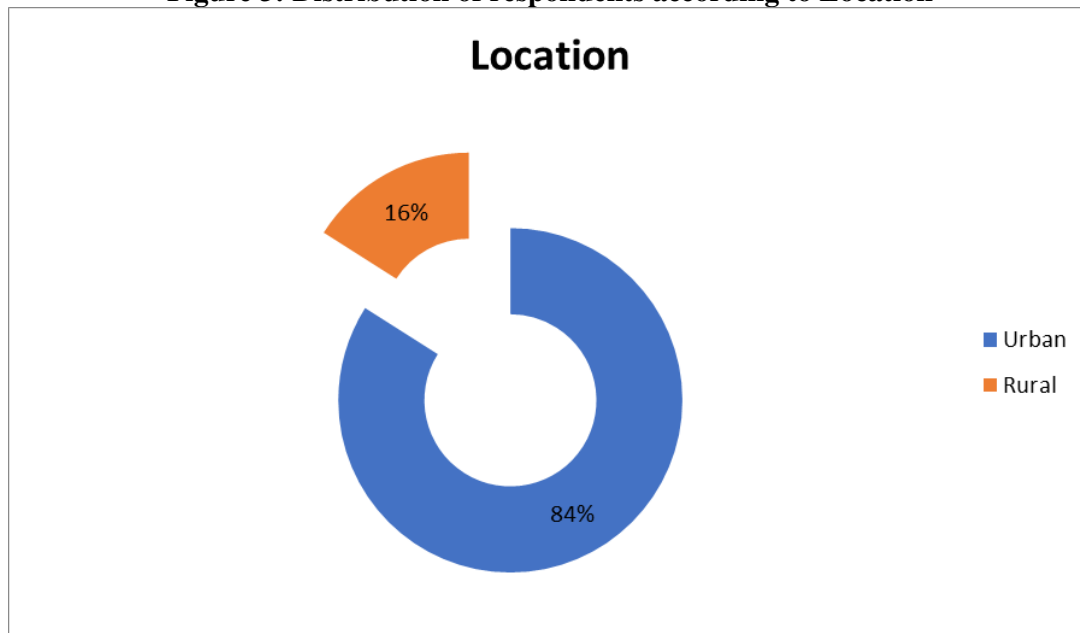
Figure 3: Distribution of respondents according to Location

Figure 3 above illustrates the distribution of the respondents according to Location. Out of the 300 respondents selected for this study, 252 (84%) of them were from urban locations while 48 (16%) of them were from rural locations.

Table 5: Distribution of respondents according to Academic Qualifications

Academic qualifications	Frequency	Percentages
Bachelor's Degree	105	35%
Postgraduate Diploma	60	20%
Master's Degree	126	42%
PhD	9	3%
Other	0	0%
Total	**300**	**100%**

Table 5 above portrays the distribution of respondents according to the Academic Qualification. Out of the 300 respondents selected for this study, 105 (35%) of them had a Bachelor's Degree, 60 (20%) of them had Postgraduate Diploma, 126 (42%) had earned Master's Degrees, only 9 (3%) of them had a terminal degree (PhD) while none (0%) had other academic qualifications.
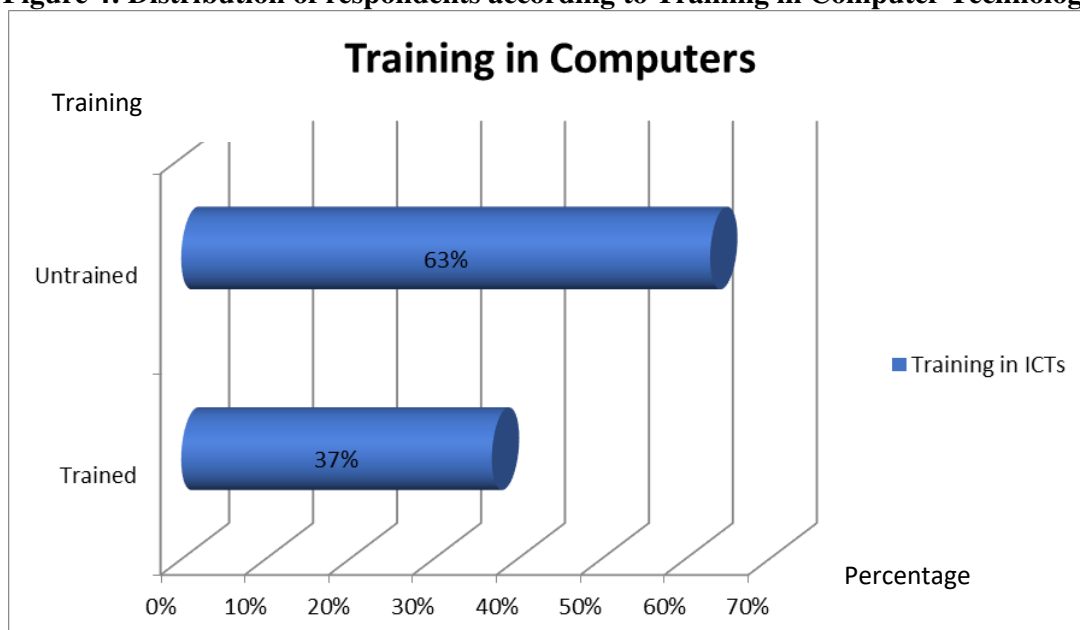
Figure 4: Distribution of respondents according to Training in Computer Technology

Figure 4 above describes the distribution of the respondents according to training in computer technology. Out of the 300 respondents selected for this study, 189 (63%) of them were trained in ICTs while 111 (37%) of them had not received any training in ICTs.

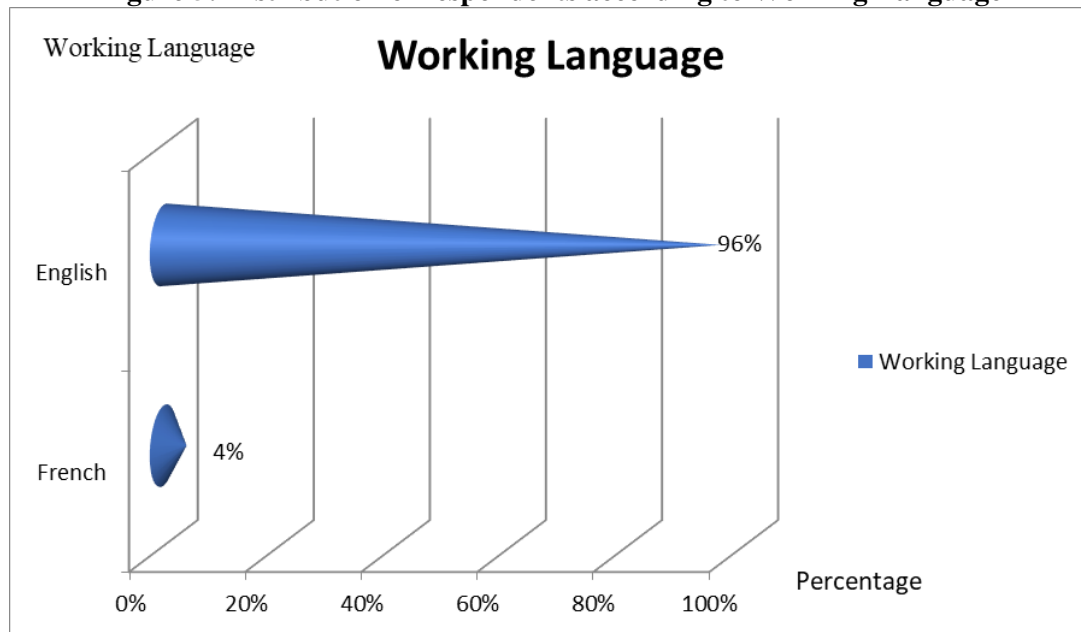**Figure 5: Distribution of respondents according to Working Language**

Figure 5 above illustrates the distribution of the respondents according to Working Language. Out of the 300 respondents selected for this study, 288 (96%) of them had English as their working language while for 12 (4%) of them French was their working language.

Table 6: Distribution of respondents according to Work Setting

Work setting	Frequency	Percentages
Hospitals	69	23%
NGOs and community Organizations	105	35%
Mental health clinics	18	6%
Government agencies	51	17%
Correctional/rehab facilities	33	11%
Private practices	24	8%
Total	**300**	**100%**

Table 7 above shows the distribution of respondents according to Work Setting. Out of the 300 respondents selected for this study, 69 (23%) of them were from hospitals, 105 (35%) were from NGOs/Community organizations, 18 (6%) of them were from Mental health clinics, 51 (17%) of them were from government agencies, 33 (11%) of them were from correctional/rehabilitation facilities, while 24 (8%) of them were from private practices.

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

The research question sought to verify the extent to which the use of computers affect the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon. The information collected is presented in Table 25 below:

Table 7: Questionnaire responses on the use of computers and the provision of community-based mental health services

ITEMS	Stretched				Collapsed		N	MEAN	S. DEV	RANK
	SA	A	D	SD	SA+A	D+SD				
I use the computer to document initial disaster response interventions that promote safety, stabilize survivors and connect individuals to help and resources.	110 (40%)	143 (52%)	13 (5%)	9 (3%)	253 (92%)	22 (8%)	275	1.69	0.67	4
I use the computer to generate session notes and document interventions during individual and group therapy sessions for storage and reference purposes.	99 (36%)	124 (45%)	39 (14%)	13 (5%)	223 (81%)	52 (19%)	275	1.87	0.83	7
I use the computer to keep a directory/repository of community services that connect clients with the resources they need.	110 (40%)	129 (47%)	11 (4%)	25 (9%)	239 (87%)	36 (13%)	275	1.83	0.89	6
I use the computer to document protection services provided to clients who are abused and neglected children, gender-based violence survivors and persons with disabilities.	82 (30%)	143 (52%)	31 (11%)	19 (7%)	225 (82%)	50 (18%)	275	1.92	0.80	8
I use the computer to prepare and present training sessions on mental health awareness to enhance capacity building.	78 (28%)	147 (54%)	36 (13%)	14 (5%)	225 (82%)	50 (18%)	275	1.94	0.77	10
I use the computer to conduct accurate assessments and make correct diagnoses using appropriate softwares that generate accurate results.	129 (47%)	82 (30%)	45 (16%)	19 (7%)	211 (77%)	64 (23%)	275	1.81	0.93	5
I use the computer to generate treatment plans and schedule meetings with clients and to consult this information from time to time during follow-up with clients' treatment.	135 (49%)	105 (38%)	19 (7%)	16 (6%)	239 (87%)	36 (13%)	275	1.68	0.84	3
I use the computer to document additional support provided to clients in areas such as vocational rehabilitation, support groups and outdoor activities that generally promote their mental health and wellbeing.	115 (42%)	94 (34%)	36 (13%)	30 (11%)	209 (76%)	66 (24%)	275	1.93	0.99	9

	SA	A	D	SD	Agreed	Disagreed	N	Mean	SD	Rank
I use the computer to document meetings with colleagues, supervisors and clients and produce activity reports.	85 (31%)	140 (51%)	33 (12%)	17 (6%)	225 (82%)	50 (18%)	275	1.92	0.81	8
I use the computer to store downloaded functional softwares, documents, textbooks, forms, and psychometric tests etc. for potential use.	192 (70%)	74 (27%)	6 (2%)	3 (1%)	266 (97%)	9 (3%)	275	1.35	0.58	2
I use the computer to generate written referral letters requesting the assistance of specialists and to document them in case files for possible future verifications.	195 (71%)	71 (26%)	6 (2%)	3 (1%)	266 (97%)	9 (3%)	275	1.33	0.56	1
Multiple Response Set (MRS)	**43%**	**42%**	**9%**	**6%**	**85%**	**15%**	**275**	**1.75**	**0.79**	

SA-Strongly Agree; A-Agree; D-Disagree; SD-Strongly Disagree;
Source: Researcher's field survey, 2025.

Table 7 shows the distribution of questionnaire responses according to the use of computers and the provision of community-based mental health services. Mental health professionals' opinions were sought on eleven items to examine the extent to which the use of computers affect the provision of community-based mental health services. Based on the collapsed responses, that is agreed (SA + A) and disagreed (D + SD), their responses were quantified thus: Out of the 275 mental health professionals, 253 (92%) of them agreed as opposed to 22 (8%) who disagreed that they use computer to document initial disaster response interventions that promote safety, stabilize survivors and connect individuals to help and resources. Out of the 275 mental health professionals, 223 (81%) of them agreed as opposed to 52 (19%) who disagreed that they also use the computer to generate session notes and document interventions during individual and group therapy sessions for storage and reference purposes.

Also, out of the 275 mental health professionals, 239 (87%) of them agreed as opposed to 36 (13%) who disagreed that they use the computer to keep a directory/repository of community services that connect clients with the resources they need. In addition, out of the 275 mental health professionals, 225 (82%) of them agreed as opposed to 50 (18%) who disagreed that they use the computer to document protection services provided to clients who are abused and neglected children, gender-based violence survivors and persons with disabilities. Furthermore, out of the 275 mental health professionals, 225 (82%) of them agreed as opposed to 50 (18%) who disagreed that they use the computer to prepare and present training sessions on mental health awareness to enhance capacity building. Again, out of the 275 mental health professionals, 211 (77%) of them agreed as opposed to 64 (23%) who disagreed that they use the computer to conduct accurate assessments and make correct diagnoses using appropriate softwares that generate accurate result.

Besides, out of the 275 mental health professionals, 239 (87%) of them agreed as opposed to 36 (13%) who disagreed that they use the computer to generate treatment plans and schedule meetings with clients and to consult this information from time to time during follow-up with clients' treatment. In addition, out of the 275 mental health professionals, 209 (76%) of them agreed as opposed to 66 (24%) who disagreed that they use the computer to document additional support provided to clients in areas such as vocational rehabilitation, support groups and outdoor activities that generally promote their mental health and wellbeing. Furthermore, out of the 275 mental health professionals, 225 (82%) of them agreed as opposed to 50 (18%) who disagreed that they use the computer to document meetings with colleagues, supervisors and clients and produce activity reports. Also, out of the 275 mental health professionals, 266 (97%) of them agreed as opposed to 9 (3%) who disagreed that they use the computer to store downloaded functional softwares, documents, textbooks, forms, and psychometric tests etc. for potential use. Finally, out of the 275 mental health professionals, 266 (97%) of them agreed as

opposed to 9 (3%) who disagreed that they use the computer to generate written referral letters requesting the assistance of specialists and to document them in case files for possible future verifications.

Cumulatively, based on the findings, the majority (85%) of the respondents agreed that the use of computers affected the provision of community-based mental health services.as opposed to those (15%) that disagreed. This therefore revealed that the use of computers enhances the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon to a high extent.

Analysis of the Interview Guide

This section addresses the interview responses based on the views gathered from the fifteen (15) mental health program managers used in the study. Their views on computers with respect to the provision of community-based mental health services are presented in line with their responses to the interview questions analyzed following qualitative content analysis method with the aid of ATLAS.ti software version 8.0. It makes use of the Qual-quan dominant paradigm and presents an exploratory thematic view of the interviewed cases by essentially highlighting dominant quotations that correspond to emerging themes based on the coded and analyzed transcripts and field notes.

Mental health program managers were asked about their views concerning the use of computers in the mental healthcare profession. Based on their responses, the emerging themes and dominant quotations that emerged are presented in the following table. Cases 11, 12 and 15 respectively expressed dominant positive views on the subject and were selected for thematic illustration based on their explanatory excerpts.

Table 8: Views concerning the use of computers in the mental healthcare profession

Emerging Themes	Dominant Quotations
Improves service provision	Case 11: *"Mental health professionals such as myself who make use of computers in the provision of community-based mental health services tend to improve our service delivery. This is because the computer helps in securing and assuring the obtention, storage and reporting of accurate details and information. I can therefore opine that computer use strongly improves service provision when it comes to mental healthcare"*
Digitalizes the process	Case 12: *"We are currently in the technology era where everything is digitalized and automated. Making use of computers in the mental healthcare profession enables the mental health professional to digitalise the process of community-based mental health service provision. This comes with enormous benefits such as the processing and storage of qualitative data for future retrieval and usage."*
Speeds up results	Case 15: *"I use computers in the provision of community-based mental healthcare because they enable me to run psychological tests for example and click on the results and get them in real time to follow on goal-setting and treatment planning in therapy. Computers hasten the entire process and speeds up results for me as a professional mental health worker both in the officed and during field visits."*

Source: Researcher's field interviews, 2025

Based on the respondents' views on the use of computers in the mental health profession, 13 out of 15 of the mental health program managers were of the opinion that the use of computers helps to improve the provision of community-based mental health services. Majority of the respondents, 12 out of the 15 of them, were of the opinion that computers help to digitalize the process of mental healthcare to meet the exigencies of today's globalized practice. Meanwhile, most of the respondents, 13 out of the 15 of them, held the view that computers, when implicated in mental health service provision speed up results by fast-tracking the process of service delivery. This is especially so when conducting psychological tests and using just one touch on the computer to analyze and secure accurate mental health diagnoses for treatment planning to ensue.

Mental health professionals were also asked about their experience with the use of computers in the provision of community-based mental health services. Based on their responses, the emerging themes and dominant quotations that emerged are presented in the following table. Cases 1, 4 and 8 respectively expressed dominant interesting views on the subject and were selected for thematic illustration based on their explanatory excerpts.

Table 9: Views concerning mental health professionals' experience with the use of computers in the provision of community-based mental health services

Emerging Themes	Dominant Quotations
Acts as a practical tool	Case 1: *"Every mental health practitioner working in contemporary mental healthcare practice needs a computer and accessories. It is no longer an option, but a necessity because the computer is a very practical tool that facilitates work in the office and afield. Whether you are busy at the office or engaged in field work, the computer is a handy tool to facilitate the execution of tasks. "*
Makes work to progress even when distance is a barrier	Case 4: *"Using the Computer makes work to progress even when distance is a barrier. Sometimes, a mental health professional can use a computer to process the information acquired from a patient who is miles away and still deliver potent results to the patient in real time. The possibilities are endless when we integrate computer usage into our daily work routines as mental health service providers."*
Usage enhances skills acquisition	Case 8: *"When I started working in mental healthcare, I could not even switch on a Desktop computer. But now, after working for some years in the field, I now own a laptop and I carry it everywhere. I can switch it on and even work on it with relative ease. Consequently, I think that computer usage enhances the acquisition of ICT skills which are highly needed for effective practice today in mental health."*

Source: Researcher's field interviews, 2025

Based on the respondents' views on their experiences with the use of computers in the provision of community-based mental health services, majority of them, 11 out of 15 of them, were of the opinion that the computer acts as a practical tool for mental health and other related activities given that it facilitates work at the office and afield. Ten (10) out of the 15 mental health program managers were of the opinion that computers make work to progress even when distance is a barrier by helping to process the information acquired from a patient who is miles away and still delivering potent results to the patient in real time. Meanwhile, most of the respondents, 13 out of the 15 of them, held the view that the usage of computers enhances skills acquisition because usage over time builds computer competencies which when combined with mental healthcare increases service provision.

Mental health program managers were also asked whether their use of computers improved the overall access, quality and effectiveness of community-based mental health services provided by their institutions. Based on their responses, the emerging themes and dominant quotations that emerged are presented in the following table. Cases 3, 5 and 11 respectively expressed dominant interesting views on the subject and were selected for thematic illustration based on their explanatory excerpts.

Table 10: Views on how computer use has improved overall access, quality and effectiveness of community-based mental health services provided

Emerging Themes	Dominant Quotations
Enhances access	Case 3: *"Computers have helped me to enhance access in that as a mental health professional, I can now use to computer to project training sessions during psychoeducation sessions and reach out to many more persons with vital information for example. I can also use the computer to print flyers, leaflets, complementary cards and brochures to hand out to vulnerable community members during field work and reach out to more potential patients."*
Improves quality	Case 5: *"Computer use has greatly improved on the quality of my work. The computer processes psychological test results for example in real time and provides me with accurate diagnoses which facilitates treatment planning. I also use the computer to accurately document session notes during counselling sessions and draft weekly, monthly and quarterly reports of mental health activities."*
Encourages effectiveness	Case 11: *"Using the computer helps in the scanning, printing, and dissemination of work materials and activities in a fast-paced working environment especially when you are working under pressure and trying to catch up with deadlines. I am therefore strongly convinced that the use of the internet encourages effectiveness and professionals lagging behind should get on board and start using the device for greater effectiveness."*

Source: Researcher's field interviews, 2025

Based on the respondents' views on how computer use has improved overall access, quality and effectiveness of community-based mental health services provided, majority of them, 12 out of 15 of them, were of the opinion that the use of computers enhances access given that psychoeducation presentations can be projected using computers and mental health information can be printed and photocopied to reach more clients. Thirteen (13) out of the 15 mental health program managers were of the opinion that computer usage improves quality especially in situations where a mental health professional uses the device to secure accurate diagnosis of psychological tests to facilitate treatment planning. Meanwhile, most of the respondents, 13 out of the 15 of them, held the view that the usage of computers encourages effectiveness given scanning, photocopying and printing of materials needed can get the mental health professional can help the mental health professionals to attain his/her goals especially when under pressure to deliver rapid results.

The explanatory excerpts of the interviewed cases present the computer as a very important ICT tool capable of alleviating work stress and giving a competitive advantage in task execution over professionals who do not use it. Against this backdrop, the telephone is seen as an effective tool that enhances the provision of community-based mental health services as supported by the cases who asserted that it improves overall access, quality and effectiveness of community-based mental health services offered by their organizations.

Analysis of the Observational Checklist

This section addresses the responses to the observational checklist based on the data gathered from the observation of 10 functional mental health practitioners at their place of work. Based on the observations made on the field, the findings on computers with respect to the provision of community-based mental health services are presented in Table 23 below:

Table 11: Observation responses on the use of computers and the provision of community-based mental health services

Criteria	Exceeds expectations in all respects	Meets expectations in all respects	Meets expectations in most respects	Meets expectations in some respects	Meets expectations in few or no respects	Collapsed		N
						Yes	No	
There are computer devices available such as desktops, laptops, tablets, etc. for work-related use.			2	1	7	2	8	10
The computer devices are owned or provided by the organization.				6	4	2	8	10
The computer devices have basic operating system and software applications.			5	1	4	5	5	10
These computer devices have accessories to enhance mental health services and work-related activities.			3	5	2	3	7	10
The computer devices are used for mental health services or related activities.	6		1	3		7	3	10
The use of computers enhances mental health and related activities in terms of access, quality and effectiveness.	7	2			1	9	1	10

Yes= Exceeds expectations in all respects, meets expectations in all respects and meets expectations in most respects; No= Meets expectations in some respects and meets expectations in few or no respects
Source: Researcher's field observation, 2025

Table 29 shows the distribution of the responses on computers and the provision of community-based mental health services based on the 10 mental health offices observed. The results revealed that there was inadequacy in computer availability as majority of the observed cases, 8 out of 10, did not possess computers desktops, laptops or tablets for work-related use. Most of the cases, 8 out of 10, used their personal computer gadgets for work-related purposes since the organisations they were working for did not provide them with computers for work-related use. Half of the cases, 5 out of 10, used computer devices that did not have basic operating system and

software applications. Most of the cases, 7 out of 10, lacked adequate computer accessories such as printers, photocopiers, scanners, projectors etc to enhance mental health services and work-related activities. However, it was observed that majority (7) of the cases make use of their computer devices for mental health services or related activities. The observation revealed that almost all of the cases, 9 out of 10, believe the use of computers improves mental health and related activities in terms of access, quality and effectiveness.

Hence based on the research question, findings show that 78.2% of the respondents accepted that computers affect the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon. This implies that the use of computers by mental health professionals enhances the provision of community-based mental health services in the two Regions of the country.

Verification of Hypothesis
Ho: There is no significant relationship between the use of computers and the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.

The hypothesis sought to verify whether there is a significant relationship between the use of computers and the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon. The results are presented in table 30 below:

Table 30: Correlation between the use of computers and the provision of community-based mental health services

Variable		The use of Computers	The provision of community-based mental health services
The use of Computers	Pearson Correlation	1	.654**
	p-value		.003
	N	275	275
The provision of community-based mental health services	Pearson Correlation	.654**	1
	p-value	.003	
	N	275	275

NB: Correlation is significant at the 0.05 level (2-tailed).

There is a significant relationship between the use of computers and the provision of community-based mental health services (r=.654, df=273, p=0.003, far <0.05). Based on the fact that the significance level of the hypothesis is above 0, the null hypothesis that there is no significant relationship between the use of computers and the provision of community-based mental health services was rejected while the alternative hypothesis that there is a significant relationship between the use of computers and the provision of community-based mental health services was retained. This provided supportive inferential evidence to conclude that there is a significant positive relationship between the use of computers and the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon. This means that a unit increase in the use of computers leads to a corresponding unit increase in the provision of community-based mental health services.

Hence, based on the results of Pearson correlation test conducted (r=.654, df=273, p=0.003, far <0.05), the conclusion is that there is a significant positive relationship between the use of computers and the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.

DISCUSSION
The Use of Computers and the Provision of Community-Based Mental Health Services
The study sought to investigate whether there is a significant correlation between the use of computers and the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon. The finding implies that there is a positive correlation between the use of computers and the provision of community-based mental health services. This means that the use of computers significantly enhances the provision of community-based mental health services.

This finding is in line with the Diffusion of Innovations (DOI) paradigm where Everette 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. Rogers' (1995) theory dwells on how, why and at what rate new ideas and technology spread through cultures, operating at individual or community level. The theory indicates that innovations are communicated through certain channels over time and within a particular social system such as mental health practitioners in Northwest and Southwest Cameroon. According to

this theory, individuals adopt innovations such as computer use with varying degrees of willingness. In line with Rogers' (1995) theory, 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 computers and other ICTs. This is because ICTs have been proven by literature (Silverstone, Berker, Hartmann, Punie & Ward, 2006) to enhance the provision of community-based mental health services.

This finding is also in consonance with Vinluan (2011) who reported that the most obvious way computers can be used is in information encoding, storage and retrieval for different purposes in the provision of community-based mental health services. Based on his study, computers have been proven to be beneficial in supporting mental health planning and assessment activities. He stated that the education of mental health experts can be enhanced through the use of laptops, desktops, and tablets (handheld computers) among others. Mental health specialists use computers for writing letters and reports, and keeping records. It is important for ICT proficiency should be a required skill for professional mental health providers. Computer use is a quick and sure means to carry out measurement and evaluation of mental health programmes. Computer-based tests are devoid of bias as they introduce acumen and acuity in the process of measurement and reporting for a valued conclusion. With the use of computer software programs, computer-administered interviews and rating scales were more comprehensive and reliable, and less biased than evaluations routinely conducted in clinical practice. This indicates that computers can be very useful when incorporated into the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon.

This is in agreement with the findings of Khazaal, Favrod, Sort, Borgeat and Bouchard (2018) which indicated that mental health practitioners and trainers are using a large variety of computer-related tools (CRT), including word processors, spread sheets, a variety of software programs, e-mail, chatrooms, listservs, databases, and other web-related tools to assist them in over half of job-related tasks today. Experts forecast CRT use by mental health professionals will significantly increase in the future, when these professionals are expected to utilize CRTs for at least 90% of their work-related tasks. The finding is also in congruence with Wagner, Hassanein and Head (2010) who argued that today computers make jobs that used to be complicated much simpler. For example, you can write a letter in a word processor, edit it anytime, spell check, print copies, and send it to someone across the world in a matter of seconds. All of these activities would have taken someone days, if not months, to do before. Also, these examples are just a small fraction of what computers can do. Summarily, effective use of the computer by mental health professionals in carrying out community mental health services will to a great extent go a long way to improve access, quality and effectiveness.

This finding is equally in line with Ben-Zeev (2017) who underscored that the world is witnessing technological breakthroughs that create exciting opportunities to improve the outcomes of people with mental illness. In just a few short years, enormous advances have been made in the ability of professionals to store, process, and access digital information in all fields, including entertainment, commerce, and health care. Computers are now within the reach of the vast majority of the world's population, including people with severe mental illness. However, it must be considered that our existing models of care are intrinsically linked with the limitations of the technologies we have had at our disposal. For example, most treatments require people to make their way to brick-and-mortar clinics, during office hours, to seek specialty services, even when their behavioral health challenges may serve as direct barriers to engagement in this type of care. Clinical assessments often rely on a retrospective record of an individual's mental health and functioning, even when recall bias is at play and when some individuals with mental health problems have significant deficits and variation in cognition and emotion, compromising their ability to provide accurate and representative reports of their experiences. Psychotherapy and rehabilitation approaches generally are built around the premise that people are willing and able to engage in one- or two-hour sessions, learn about and acquire major life skills in artificial clinical settings over months or years, and then apply them successfully in their daily lives in the real world. Even more than augmenting and extending existing resources and services, computer software and hardware may enable us to redefine the very nature of mental health care by building on research, intervention, and prevention approaches that emerge from novel technology–informed scientific paradigms and clinical frameworks. Computer-mediated mental health services focus on continuous and seamless data collection, delivery of services in the environments in which people negotiate their lives, and interventions that are administered in dosages, frequencies, and formats that better fit the capacities and characteristics of individual patients

rather than the office hours or staff composition of the nearest clinic. Based on the aforementioned, it can be seen that the parameters of mental health screening, monitoring, and treatment are fast changing, hand-in-glove with the opportunities created by breakthroughs in computer technology.

This finding is in agreement with Diez-Canseco, Toyama, Ipince, Perez-Leon, Cavero, Araya and Miranda (2018) who posited that many major medical and scientific advances occur in association with technology and there is no argument that computers, and indeed the Internet, are the greatest technological inventions of this era. Gold standard psychological therapy such as cognitive-Behavioural Therapy (CBT) can be delivered via computers, and research shows you need only minimal human interaction for it to be effective. This means people who may not be able to attend face-to-face therapy, or those may not want to due to perceived stigma, can still access quality treatment programs. Mental health tools can actually work better when they are mobile and accessible 24/7. You can now use computer softwares and applications to test yourself for mental illness, engage with a computer treatment program and obtain crisis counselling. Sophisticated bio-sensing technologies and Bluetooth can collect data, information and geographical location to provide a real-time view of behaviour and mood. These capabilities facilitate identification of 'at-risk' individuals and assist in referral and access to treatment. This is of particular use when preventing suicide. Computer technology enables us to create interactive treatment programs in a wide range of formats. For example, if we need to deliver a program to high school students, the latest research shows us that programs presented as online games are both attractive and effective. A specially created app called iBobbly uses artwork, stories and music to deliver quality mental health care to young people in the United States. Thus, when experiencing poor mental health, having access to a range of specialized medical knowledge and treatments, as well as the many personal stories available on computer apps and software programs, increases mental health literacy, reduces stigma and encourages help-seeking.

This finding is in line with Lee (2018) who defined a computer as a fixed or portable device with multiple functionality and a user interface; for instance, tracking devices, a voice communication device, technical devices that facilitate workflow, an electric medical record (EMR) including clinical information system (CIS), computerized physician order entry (CPOE), barcoding, Personal Digital Assistant (PDA), a smart card, smart Radio Frequency

Identification (RFID), wireless on wheels, kiosks, decision support, and cameras. The researcher asserted that computers can support preventive mental healthcare through Health awareness, Self-observation, Self-care, Behaviour Change, and Health Promotion. For example, computer applications and softwares such as SmartMentalTech can deliver preventive mental healthcare efficiently. It is important to note that computer- mediated mental healthcare is acquiring attention globally as a way to increase access to mental health services and deliver treatments in a cost-effective manner. Computer apps provide information and other support services to promote and provide mental health literacy and this technology has the capacity to transform the mental health system globally. Five types of computer-mediated community-based mental health interventions exist nowadays. These include Big Data; computerized interventions, resources, and applications; wearable computing and monitoring; robots; and gaming. The rapidly changing mental healthcare computer technologies are therefore likely to enable mental health professionals to improve community-based service provision through greater access and usage for clients.

This finding is also in agreement with Rodriguez-Villa, Rauseo-Ricupero, Camacho, Wisniewski, Keshavan, and Torous (2020) who affirmed that digital media and resources, smartphone/tablet applications (apps), DVDs, CD-ROMs, and computer software are becoming universal in our culture. The use of electronic media and information technologies in behavioral health treatment, recovery support, and prevention programs is rapidly gaining acceptance. Technology-based assessments and interventions are important therapeutic tools that clinicians can integrate into their work with clients. Technology allows alternative models of care to be offered to clients with specific needs that limit their ability to participate or interest in participating in more conventional interventions targeting mental health. Computer-assisted care can transcend geographic boundaries to reach many people otherwise unable to access services and is useful in a wide variety of settings, computer-based interventions offered in the home, community organizations, schools, emergency rooms, and healthcare providers' offices. Furthermore, computer-assisted care is often accessible on demand at the user's convenience, thus reducing barriers to accessing care. In addition to relevant staff development and training, this response needs to address the specific electronic resources applicable to each program, the contexts in which those resources will be most useful, the benefits and risks of using them, the methods for preparing clients

to accept and use these resources, and an organizational commitment to evaluating the effectiveness and utility of specific technologies. Since computers represent new means of communication; messages must be tailored to the technology and the issues at hand. The use of computers in community-based mental healthcare therefore requires consideration of a number of legal and ethical issues, such as confidentiality, scope of practice, state regulations, privacy, data security, consent management, and the potential for misuse.

This finding is also in conformity with Luxton, McCann, Bush, Mishkind and Reger (2011) who indicated that computer-based assessments and interventions are of use in a variety of ways, and they may also be clinically meaningful along an entire spectrum of mental health services, including screening, assessment, prevention, treatment, recovery management, and continuing care. The use of technology, such as a computer, in screening for and assessing individuals' mental health needs may allow for the efficient, standardized, and cost-effective collection of clinically relevant client information in diverse settings. This can be particularly important in healthcare settings where clinicians trained in mental health assessment procedures are not readily available and where opportunities to identify individuals who may benefit from mental health interventions are missed. Computer apps and softwares give clients access to screening, intervention, and oversight by trained mental health staff members in remote locations. Brief computerized screenings can identify individuals with varying levels and types of mental health needs and can identify the differing resources and services that may be helpful to them. These brief screenings may also be useful as a less intensive therapeutic option for individuals not willing to seek professional care actively at a given point in time. The use of technology also offers individuals the opportunity for personalized recovery monitoring and management and this may allow for new models of care in which individuals can take ownership of monitoring their own care and recovery.

This finding is in agreement with Connolly, Kuhn, Possemato and Torous (2021) who highlighted that interventions that incorporate computer based, self-directed interactive technology have been used to assess mental health, to provide services, and to promote health behaviours in persons with mental disorders such as eating substance use disorders. Computerized treatments for mental disorders have been most widely developed and extensively used for anxiety, traumatic stress, and depressive disorders.

Computer-based interventions to treat these disorders may, in part, reflect the manuals developed for cognitive–behavioral treatments of these disorders. Treatments that have been broken down into discrete procedures as part of the production of a treatment manual are easy to adapt for computer-based interventions. For example, computer programs have successfully implemented such mental health techniques as cognitive restructuring, relaxation training, systematic desensitization, and self-exposure. A computerized program for substance use disorders that is theoretically grounded in cognitive–behavioral therapy (the CBT4CBT program) can significantly enhance outcomes when provided as an adjunct to traditional treatment for substance use disorders, and other programs have effectively integrated motivational interviewing approaches that target alcohol and other substance use disorders. The use of computers may help increase mental health professionals' awareness of community-based resources for client referrals. Interactive computer games targeting various areas of mental health have also shown promise, including games that use virtual coaches. Comparisons of computer-delivered interventions with person-delivered interventions generally report comparable outcomes. Therefore, the use of computer-generated mental interventions needs to be embraced by more mental health practitioners as this will enhance access, quality and effectiveness of community-based mental health service provision.

CONCLUSIONS

Computers have proven to be necessary in the provision of community-based mental health services in the Northwest and Southwest Regions of Cameroon especially in the post-Covid era. It was recommended that authorities of mental health facilities and organizations that promote mental healthcare need to create an enabling environment for greater computer integration not only in administrative activities but also in other mental health services. This includes ensuring that all the mental health offices have appropriate computer infrastructure. This infrastructure includes computer equipment, electricity connection as well as internet connectivity. This would go a long way to reduce the challenges faced by mental health practitioners in efficient service delivery thereby improving the overall access, quality and effectiveness of community-based mental health services. In addition, training colleges and universities should incorporate and strengthen computer integration training in their mental health programs. They should also ensure that such training is based on equipping the mental health trainees with skills on actual integration of computer use in mental health practice in clinical, school,

hospital and other community settings. This would ensure that mental health trainees are adequately prepared to effectively compete with their counterparts worldwide upon completion of professional training and graduation.

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