

How Online Psychotherapy Platforms Facilitate Accessibility to Mental Health Services in Cairo; The Case of Shezlong Mental Therapy Platform

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Abstract

Mental disorders are considered as one of the biggest causes of disabilities that are common in several countries. Egypt lacks societal awareness of mental illness and mental health maintenance that could be attributed to the cultural and religious influence on the society which certainly affects the accessibility to mental care. Whether due to financial barriers, social barriers or privacy issues the concept of mental health and mental wellbeing is not fully developed in Egypt. With the technology advancements we're experiencing today Telemedicine is becoming a popular way of practicing medicine and delivering medical services specially in mental health. Shezlong is one of the most popular online platforms offering mental health services to those in need, utilizing the power and convenience of the technology to overcome the barriers of access specially in Egypt. The utilized theoretical framework comprised 10 dimensions acting either as barriers or facilitators to accessibility to mental healthcare. The research design is descriptive with the correlational and inferential statistics type of instrumentation. The data will be collected via a structured questionnaire. The correlation and regression analysis revealed that "Acceptability, Affordability, Ability to seek, Availability and Accommodation, Ability to pay, Appropriateness, Ability to engage and Ability to reach" are the main barriers that influence the Egyptian patients to accessibility to mental services. The results suggest that the higher the levels of these specific dimensions, the higher degree of accessibility will be experienced by the patient.

Keywords: Online psychotherapy, mental disorders, Accessibility, Mental health services, Shezlong, Egypt

1. Introduction

Mental and neurocognitive disorders are considered major causes of disabilities that are common in both high and low-resourced countries (Odejimi, Tadros, & Sabry, 2020). Contrary to popular belief, mental illnesses are rather common in Egypt, with anxiety and depression having a comparatively high prevalence among the general population. Due to the influence of culture and religion on society, Egypt still lacks societal awareness regarding mental illness and maintaining mental health. This highlights the need to address the issue of accessibility to mental health services. The lack of awareness and accessibility regarding mental health in Egypt is a hindrance, whether it is because of financial barriers, social barriers, stigma, or discrimination.

For a better understanding, the research contextual analysis was through using the Nine Elements Model (Elsafty A. , The 9 Elements Model developed by Dr Ashraf Elsafty, 2018, 2019, 2020, 2021, 2022, 2023). "The 9 Elements Model" states that there are nine elements should be covered to determine the business anatomy of any model encompassing the organization(s) and all related stakeholders, including distributors, customers, suppliers, competitors, government agencies, and so on (Elsafty, El Sayad, & Shaaban, 2020; Elsafty, Elbouseery, & Shaarawy, 2020; Elsafty & Elzeftawy, 2021; Elsafty & Oraby, 2022; Elsafty & Mahmoud, 2022; Elsafty & Mansour, 2023; Elsafty & Ramadan,2023)

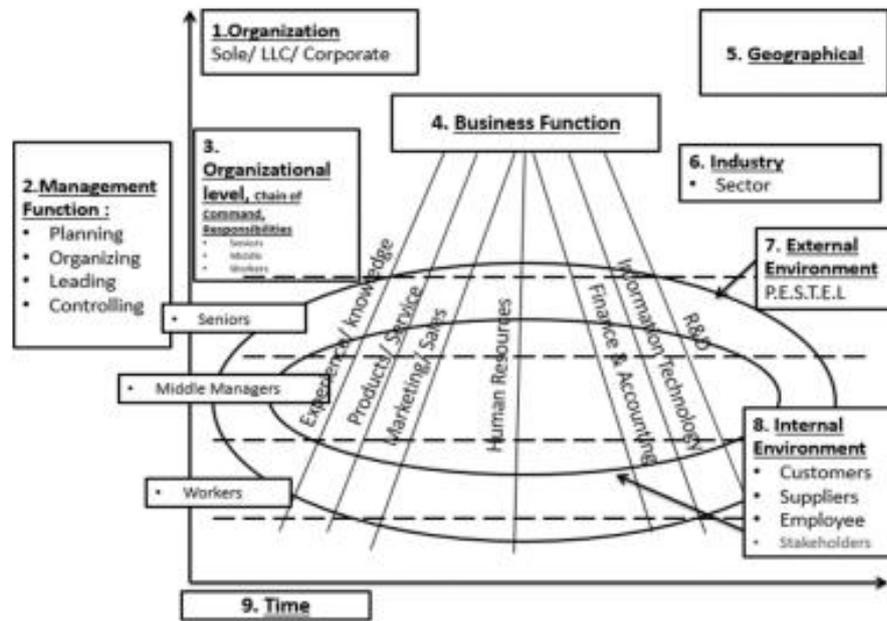


Figure 1. Business Anatomy: The 9 Elements Model Proposed by Elsafty (2018)

Starting with the geographical location and taking a look at the mental health status in Egypt, A country-wide survey by Egypt's Ministry of Health in 2018 showed that 25% of Egyptians suffer from mental health issues. A random sampling of 22,000 families in Egypt indicated a high prevalence of depression and anxiety conditions. Anxiety accounting for almost 44% and depression for about 31% of Egyptians (Allcock, 2022). Women were found to have higher odds of mental disorders over 2 times than men. Another risk factor indicated was the location of the individuals in underprivileged areas -outside Cairo and Alexandria- along with the educational, marital, and social status. This indicates that Egypt lacks the adequate societal awareness for the mental disorders and mental health maintenance, justifying the need for more focus and expansion of mental health services.

Presently, the current barriers that may prevent the patients who are aware and willing to undergo mental therapy from receiving the needed support are resembled in some factors such as accessibility and affordability of course beside the stigma and general misconceptions as stated by Rita Kallini, an Egyptian-Canadian clinical psychologist (Ahmed, 2021). The costs of the conventional therapy methods are relatively inconvenient to certain people and these costs are not represented only in the price, the cost of time, effort and distance also play a role. However, it is not just affordability concerns that prevent people from getting help. Misconceptions and culture hinderance as well are reasons for the customers to refrain from the face-to-face mental therapy in order to avoid stigma and to seek more privacy as certain mental disorders still face discrimination, and tolerance still has a long way to go. One of the main things impeding mental therapy in Egypt is the accessibility issue. Since hospitals provide the majority of mental health services, there is a lack of focus on integrating mental health into primary car (Jenkins, Heshmat, Loza, Siekkonen, & Sorour , 2010). This might be relevant due to that the majority of the available resources are allocated to a few large centralized psychiatric hospitals with no accessibility to most of the patients.

Many of the organizations present in Egypt involved in offering support are not-for-profit services or NGOs and offer whatever help they can to people in need. A few independent organizations have also taken it upon themselves to help people find more affordable therapy options. In this paper and according to the nine elements model, the organization we will focus on is an online therapy platform named "shezlong". Shezlong began as a startup in 2015 that started as a partnership between a software engineer -Ahmed Abu Elhaz- and a psychiatrist -Mohamed Elshamy- aiming to create a platform that digitalizes the psychological therapy for those in need of mental or psychological support. The main purpose was to fight the cultural hindrance and healing those struggling with their own mind and with social stigma (Shezlong, Egypt's online therapy startup, closes a 150K investment, 2016). This novel treatment modality has exploited several benefits in order to overcome the obstacles and provide psychological support to those in need. The platform was first established in Egypt and began to provide its services online through connecting users with various professional and certified Therapists. This connection is achieved via anonymous and affordable online video conference therapy sessions (Elhaz, 2022).

Telemedicine industry is considered as very popular way of practicing medicine and delivering medical services remotely

using technology depending on a telecommunications infrastructure (Thomas, 2023). The concept of E-psychotherapy is a relatively new one that was developed over the last few years as a result of the fast technology change and transformation that can be defined in various ways. One of the most comprehensive definitions for e-Psychotherapy that it is a licensed mental health services that is offered through email, video conferencing, virtual reality technology, chat technology or any combination of these (Azy Barak, 2009).

Focusing more on the technological factors as they serve as an important enabler for this telemedicine industry, Reports have shown that through 2021, Egypt have experienced a surge in the adoption of mobile phones and the utilization of e-services specially through the COVID-19. there was almost 53.5% internet penetration projected in 2019 (Badran, 2019). Egypt specifically is witnessing a phase of development in health sector according to the sustainable development vision 2030 as it plans for the involvement of mobile healthcare applications into the healthcare system in the upcoming period (Foundation for Digital Egypt, A Soaring Progress, 2023). A large segment of the entrepreneurial businesses nowadays is directed towards technology-based products and services, especially in the healthcare sector. The Egyptian government together with the ministry of health and population and the Ministry of Communication and Information Technology (MCIT) keep focusing on developing the e-Health programs to provide better health services and ensure better access to all Egyptians (Farid, 2019). This reveals the tendency of people towards maintaining and monitoring of the wellbeing and health through the utilization of technology whether they are having a problem of accessibility to the traditional healthcare services or not.

Shezlong platform functions as the first and largest online psychotherapy platform that aims to give people convenient and private access to professional counseling (Shezlong, 2019). The main aim at first was to target the Arabic speaking customers, however after the first year Shezlong expanded its services to cover MENA region, UK, and Australia with the possibility of conducting the sessions with 7 different languages (Tiec, 2019). Shezlong is contracted with over than 500 Consultant and therapist coming from over 20 different countries and the provided services vary between psychiatry sessions, therapy sessions or counseling sessions. All the platform business functions are majorly dependent on technology and the IT infrastructure. "The Company uses about 25 technology products and services including HTML5, Google Analytics, and jQuery, according to G2 Stack and the website is actively using 61 technologies according to BuiltWith which includes Viewport Meta, iPhone / Mobile Compatible, and SPF" (Shezlong, 2019).

Through the stakeholder analysis, Elhaz, (2022) demonstrated that the concept of E-therapy was very alluring to many customers, especially as they were not targeting the traditional customer or the segment exploiting the conventional psychotherapy methods (Elhaz, 2022). From the beginning they were targeting the segment of customers that are afraid of stigma, cultural obstacles and also those who are not capable of paying the high prices offered by the conventional method. They focused on the affordability of the sessions through providing diversified options of therapists in every subspecialty to be paid by session with a very reasonable price range. Proximity was also one of the main factors that added up to the segmentation, as they were targeting customers who find it hard to comply with the sessions due to the distance of the conventional clinics. Their peak was best exhibited through the COVID-19 time as with the lockdown and the stress from the pandemic everybody needed some help and everybody needed someone to talk to which made it a golden time for the platform (Elhaz, 2022). Shezlong used the growth opportunity to introduce two new products "Texting-Base Therapy" that aims to provide people with relaxation techniques such as deep breathing and positive self-talk that they need especially under the Covid-19 situation and the anxiety as well as "Corporate Wellness programs" to help employees manage stress and anxiety resulting from the pandemic crisis.

Through the foretasted elaboration and the analyzation of the nine elements, its concluded that accessibility to mental healthcare to those in need could be impeded by several factors which may give the opportunity to online mental support services to enhance this problem. This is best conceptualized through the following.

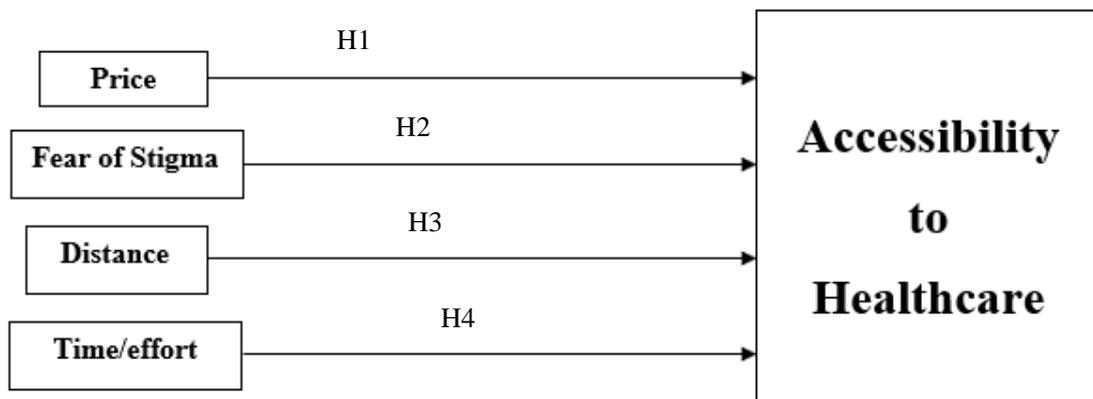


Figure 2. Conceptual Model

2. Literature Review

According to the World Health Organization (WHO), mental health is “a state of wellbeing in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (WHO, *Mental health: Strengthening our response.*, 2022). The wellbeing of mental health is perceived as the emotional, behavioral, social, and psychological wellbeing of the individual. However, any disorder of any of the components of the mental health will cause what so-called mental illness or mental disorder. According to Diagnostic and Statistical Manual of Mental Disorders, Mental disorders and Mental illnesses are health conditions involving changes in emotion, thinking or behavior (or a combination of these) (Ihuoma Njoku, 2022). There are multiple forms of mental illnesses from mild with no or little interference to daily life to severe ones with immediate need for care. Nevertheless, they have one thing in common, that they all are diagnosable, treatable, and preventable when there is appropriate access to mental support.

Many people with mental health conditions could return to full functioning, however accessibility to mental healthcare has been a challenge worldwide (Cox, 2022). There are various barriers to accessibility that could contribute to the problem context whether they were social, financial, or personal barriers. The presence of the conventional mental services for people in need doesn't surely mean that they are not encountering difficulties through the process of utilisation. In a study by Gulliford, et al. (2007) it was presumed that the service availability is a limited measure for accessibility (Gulliford, et al., 2007). Donabedian (1972) observation also agreed upon the same idea and stated that “the proof of access is use of service, not simply the presence of a facility” (Donabedian, 1972). Meaning that it doesn't matter how many clinics or hospitals offering the service of psychotherapy and mental wellness as long as there are a number of barriers to be considered before and during receiving the service.

Telehealth services are contemplated to solve these barriers of accessibility. The main aim of the digitalization of health services is to make the therapy more accessible as confirmed by Bunyi, Ringland, & Schueller (2021) through their study that describes why accessibility to healthcare matters and how the health apps solve this problem (Bunyi, Ringland, & Schueller, 2021). The same concept applies to mental health and psychotherapy. The realm of mental health has changed tremendously and rapidly as a result of the technology evolution. These vast changes have created an alternative to the conventional methods of psychotherapy (Amichai-Hamburger, Klomek, & Friedman, *The future of online therapy*, 2014). The online psychotherapy concept is defined as “a licensed mental health care professional providing mental health services via email, video conferencing, virtual reality technology, chat technology or any combination of these over the internet” (Manhal-Baugus, 2001). These online mental services utilize the power and convenience of technology to provide more channels to mental care and to overcome the barriers of access. A lot of scientific studies have postulated that internet-delivered mental therapy are efficient and cost-effective for several mental issues (Griffiths, Farrer, & Chris, 2010). As These internet based services provide much flexibility regarding time and methods and even under the anonymous matters for some patients in need (Azy Barak, 2009). As the main focus of these online mental health services as demonstrated by Bunyi, Ringland, & Schueller (2021) is to make the service reachable for diverse and underserved populations taking into account the minorities, rural populations and people with physical and sensory disabilities for the aim of bridging the gap between the mental healthcare and those who cannot access and receive it (Bunyi, Ringland, & Schueller, 2021).

The existence and the development of the tele-mental health services was not meant to compete or to replace the

traditional face-to-face therapy methods (Christensen & Hickie , 2010). The main aim for these online services is to increase and facilitate access to those in need and to ensure more convenience and support. Several theories and models have been found discussing the adoption and utilization of technology to examine the acceptance of the concept. The first model is by Davis (1989) known as the Technology Acceptance Model (TAM). Davis (1989) hypothesized “that ‘perceived usefulness’ and ‘perceived ease of use’ are the main factors that determine user acceptance (Davis, 1989). The same idea was presented by Venkatesh, Morris, Davis, & Davis (2003) with further evolution to the theoretical framework to include more variables. In the Unified Theory of Acceptance and Use of Technologies (UTAUT) model, the authors postulated that the independent variables that have an effect on the use of technology behavior can be grouped into four: ‘performance expectancy’, ‘effort expectancy’, ‘social influence’ and ‘facilitating conditions’ (Venkatesh, Morris, Davis, & Davis, 2003). These theories focus on the utilization of the technology based services however, this research is mostly focused on the consequences of this utilization and whether it will lead eventually to improved accessibility to mental health services.

The problem of poor access to care to those with mental and psychological issues is a multifactorial problem. Penchansky & Thomas (1981) described the access to healthcare services as “ a degree of fit” relation between the customers and the providers of the services and this relation could easily be influenced by different factors such as the affordability, the acceptability and the accomodation of these services (Penchansky & Thomas, 1981). Gulliford, et al. (2007) then depicted and explained those factors differently, through classifying them as barriers to accessibility: Personal Barriers, Organisational barriers and Financial barriers (Gulliford, et al., 2007). These barriers are foreseen as reasons to refrain people from reaching the appropriate care needed. Penchansky & Thomas (1981) and Levesque J., Harris M.F.& Russell G. (2013) both shared similar opinions about factors affecting accessibility to healthcare even though it was elaborated differently. Penchansky & Thomas (1981) focused on the five dimensions of accessibility from the supply-side which is the features and characteristics from the healthcare side that may act as facilitators or barriers to accesibility (Penchansky & Thomas, 1981).

Figure 3 below shows the conceptual model assessing the accessibility to health care services prevailing to customer satisfaction from the supply side from Penchansky & Thomas, (1981) point of view.

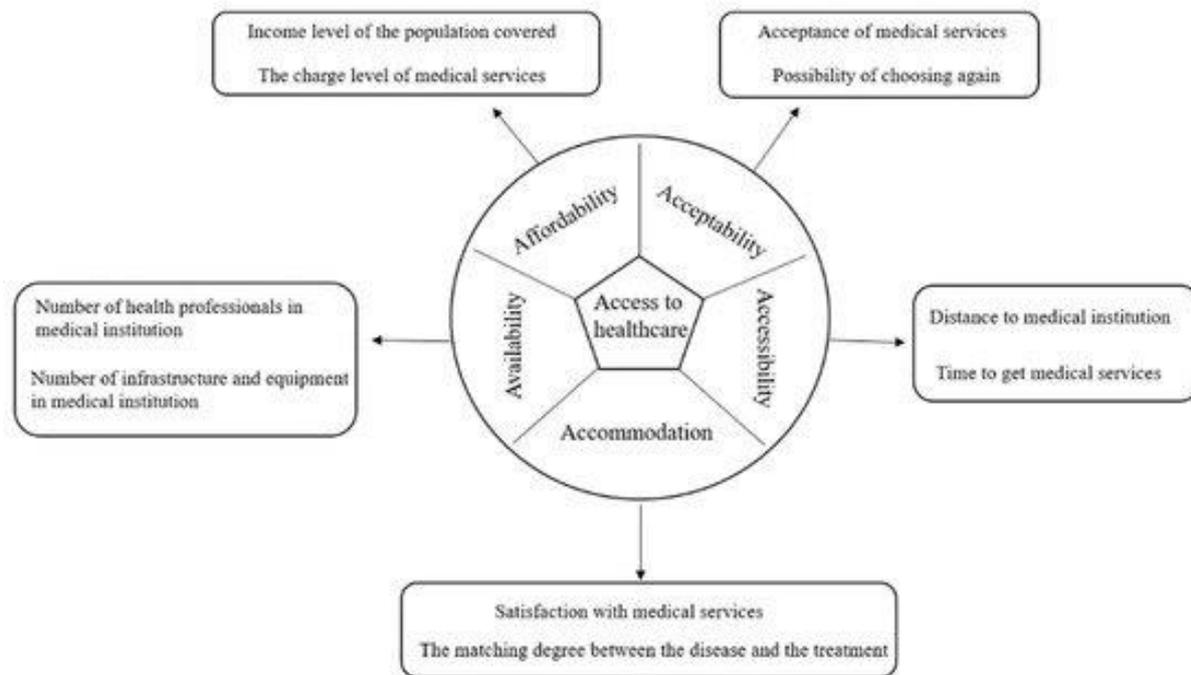


Figure 3. Definition of access and relationship to customer satisfaction by Penchansky & Thomas, (1981)

Here, access is viewed as a general concept that outlines the relations between the patient and the health care. Penchansky & Thomas, (1981) defined the five dimensions of accessibility as follows: Availability: the adequacy of the supply of the healthcare providers and facilities in relation to the need, accessibility: the relationship between the location of the supply and location of the patients or clients taking into consideration the travel time and the transportation resources needed, accommodation: the relationship between the way the supply resources are offered (including appointment systems, hours of operation, walk-in facilities, telephone services) and the clients' ability to accommodate and accept them to, while affordability: the relationship between the prices of services and providers' and the clients ability to pay and finally the

acceptability is defined as the cultural and social factors determining the attitudes of the clients to accept the aspects of the service and seek care (Penchansky & Thomas, 1981).

Levesque J., Harris M.F., & Russell G., (2013) adopted a more sophisticated theoretical frame than that of Penchansky & Thomas, (1981) to be as shown in figure 4 below:

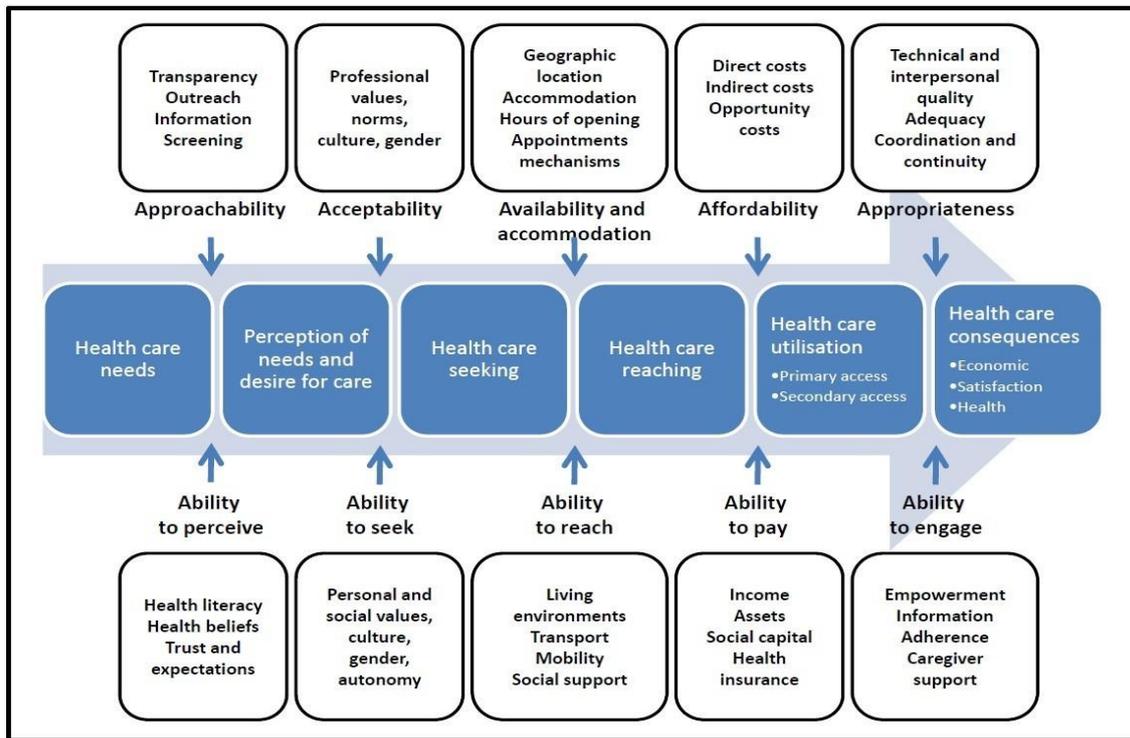


Figure 4. Conceptual framework of access to health care by Levesque J., Harris M.F., & Russell G., (2013)

Levesque J., Harris M.F. & Russell G. (2013) decided to adopt a broader scope of access as they perceived access as “the interface between potential users and health care resources, and would be influenced by characteristics of those who supply as well as those who utilise the services” (Levesque J., Harris M.F., & Russell G., 2013). That’s why the authors conceptualised five dimensions of accessibility from both the supply side -the healthcare providers- and the demand side -the patients side-. As represented in the upper part of the figure, the five dimensions of service accessibility are: Approachability, Acceptability, Availability and accommodation, Affordability and Appropriateness, while in the lower part of the figure above, the five corresponding abilities pertaining to the patients side are: Ability to perceive, ability to seek, ability to reach, ability to pay and ability to engage (Levesque J., Harris M.F., & Russell G., 2013). Levesque J., Harris M.F., & Russell G., (2013) defined access to healthcare as the opportunity to reach and attain the healthcare service to those in need (Levesque J., Harris M.F., & Russell G., 2013). Meaning that access is a result of the interaction between the characteristics of the patients’ or the clients’ and the service providers. According to this theoretical framework of access, Approachability is defined as the reachability of the existing services to those in need in relation to familiarity of the service and the provided information regarding available treatments and activities contributes to making the services more approachable. Crossponding to this dimension is the ability to perceive notion which relates to the patient’s knowledge, health beliefs and treatment literacy (Levesque J., Harris M.F., & Russell G., 2013). Acceptability is defined as the social and cultural factors that could influence the acceptance of such service. This dimension is interrelated with the judged appropriateness of the ability of the patient to seek care (Levesque J., Harris M.F., & Russell G., 2013). The third dimension is the availability and accommodation which relates to the capacity of being able to reach the healthcare service providers physically and in timely manner, whether it is related to the distribution of the service, the working hours, the transportation or the waiting time. The ability to reach is complementary notion to the availability and accommodation dimension as it relates to the person’s mobility and ability to physically reach the healthcare facility (eg. Handicapped) (Levesque J., Harris M.F., & Russell G., 2013). Affordability is defined as the dimension related to the price and the expenses of the provided service that will result in a income loss while the ability to pay is described as “the economic capacity” of people to pay for such services without huge expenditures (Levesque J., Harris M.F., & Russell G., 2013). Lastly, the fifth dimension is the appropriateness which relates to the adequacy and the quality of the service provided to those in need taking in consideration the treatment effectiveness. The ability to engage is the notion corresponding to the appropriateness which relates to the fact that patient is able to participate and communicate with the

service provider (Levesque J., Harris M.F., & Russell G., 2013). Therefore according to the the previous elaboration, Access could be viewed as “the possibility to identify healthcare needs, to seek healthcare services, to reach the healthcare resources, to obtain or use health care services, and to actually be offered services appropriate to the needs for care” (Levesque J., Harris M.F., & Russell G., 2013).

This framework was adopted in 31 identified literature, all discussing the concept of accessibility whether in a priori or a posteriori approach. However, such a broad scope of the concept is not always easily adopted in the scientific literature (Levesque J., Harris M.F., & Russell G., 2013). From all the studies adopting Levesque J., Harris M.F., & Russell G., (2013) theoretical framework, only 11 studies used it as it is and explored both dimensions (Cu, Meister, Lefebvre, & Ridde, 2021). Several studies decided to rely only on partial use of the theoretical framework. Of 31 identified literature 13 focused totally on the five dimensions discussing the supply side of the healthcare systems, while 7 focused on the patients’ abilities or the corresponding five dimensions (Cu, Meister, Lefebvre, & Ridde, 2021). The identified literature used multiple tools to collect data on healthcare accessibility in both qualitative and quantitative manner to cover various therapeutic areas. From these tools all questions used in the discussing the variables of the theoretical framework was collected and will be used as a guide in the data collection of this research context

3. Methodology

After reviewing different models from the literature, It was decided that this research will be built on the the conceptual framework of access to healthcare by Levesque J., Harris M.F., & Russell G., (2013) since it is the closest model to the case under study. Taking into consideration the addition of the five abilities corresponding to the five dimensions of accessibility since the conceptual model in the problem context focused only on the supply side. The aim of our conceptual model is to judge whether the presence of the online mental services will have an impact on facilitating the accessibility to mental healthcare.

From the observation of the previously mentioned conceptual model, Levesque J., Harris M.F., & Russell G., (2013) theorized the relation between the five dimensions of healthcare and its corresponding five abilities pertaining to the patients with the accessibility to health care services with no measurements of the relation. This model and the literature adopting it was performed on traditional healthcare services thus we are going to adopt the same model in order to observe and apply the relation on the online mental services. Through this application we are going to focus on ten variables as independent variables as explained below

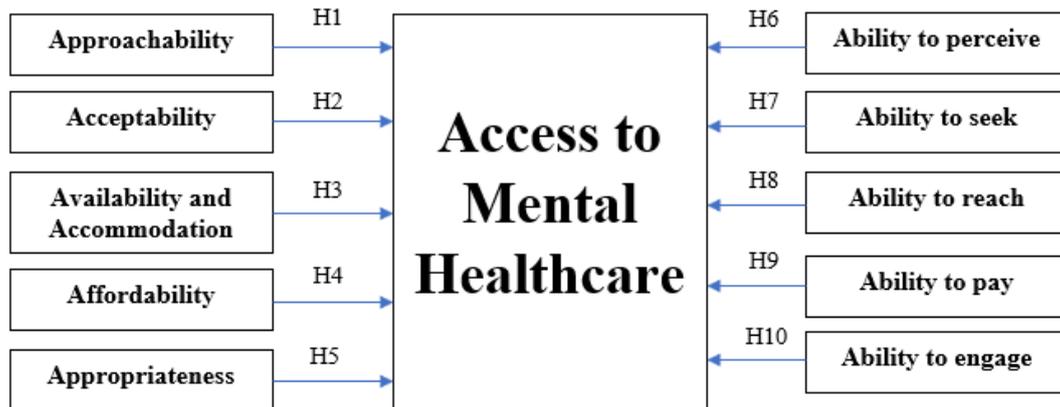


Figure 5. Theoretical framework adapted from (Levesque J., Harris M.F., & Russell G., 2013)

3.1 Variables

Dependent Variable:

Accessibility to mental healthcare: The ability and willingness of the customer/patient to reach the needed care and support through the online mental health services.

Independent Variables:

I1: Approachability: the reachability, familiarity and the availability of information regarding available treatments and activities of the online mental services in compare to the traditional mental services

I2: Acceptability: The social and cultural factors that could influence the acceptance of the online mental services in compare to the traditional mental services, referring to the fear of stigma and the avoidance embarrassment surrounding the mental illness.

I3: Availability and accommodation: The way the online mental services are organized and offered to clients (including appointment systems, hours of operation, transportation, flexibility), referring to the reduced hassle factor resulting from the distance to and from the service providers in compare with the traditional mental services.

I4: Affordability: The price and indirect expenses (eg. Travel costs) of the online mental services resulting from income expenditures in compare to the prices with the traditional mental services.

I5: Appropriateness: The adequacy and the quality of the service offered by the online mental services in addition to the effectiveness of the treatment and activities in compare to the traditional mental services.

I6: Ability to percieve: The person's knowledge and health beliefs surrounding the mental health and illness in addition to the awareness of the online mental services concept

I7: Ability to seek: The person's personal autonomy and willingness to seek care in case of the presence of online mental services in compare to traditional mental services

I8: Ability to reach: The person's ability of mobility and flexibility to reach the online mental services in compare to traditional mental services (eg.restricted mobility, handicapped)

I9: Ability to pay: the economic capacity for people to spend resources -without catastrophic expenditure- to pay for the online mental services in compare to traditional mental services

I10: Ability to engage: The ability of person's to communicate, participate and engage in the treatment which relates to the commitment to the completion of the sessions in the online mental service in compare to the traditional services

3.2 Research Questions

Major Question:

MjRQ1: Does the online mental therapy platforms improve **the accessibility to mental healthcare services?**

Minor Questions:

MinRQ1: Does **approachability** have an effect on improving **the accessibility of mental health services?**

MinRQ2: Does **acceptability** have an effect on improving **the accessibility of mental health services?**

MinRQ3: Does **availability and accommodation** have an effect on improving **the accessibility of mental health services?**

MinRQ4: Does **affordability** have an effect on improving **the accessibility of mental health services?**

MinRQ5: Does **appropriateness** have an effect on improving **the accessibility of mental health services?**

MinRQ6: Does **the ability to perceive** have an effect on improving **the accessibility of mental health services?**

MinRQ7: Does **the ability to seek** have an effect on improving **the accessibility of mental health services?**

MinRQ8: Does **the ability to reach** have an effect on improving **the accessibility of mental health services?**

MinRQ9: Does **the ability to pay** have an effect on improving **the accessibility of mental health services?**

MinRQ10: Does **the ability to engage** have an effect on improving **the accessibility of mental health services?**

3.3 Hypothetical Statements

H1₀: There is no relationship between **approachability** and improving the accessibility of mental health services.

H1_a: There is a positive relationship between **approachability** and improving the accessibility of mental health services.

H2₀: There is no relationship between **acceptability** and improving the accessibility of mental health services.

H2_a: There is a positive relationship between **acceptability** and improving the accessibility of mental health services.

H3₀: There is no relationship between **availability and accommodation** and the improving accessibility of mental health services.

H3₁: There is a positive relationship between **availability and accommodation** and improving the accessibility of mental health services.

H4₀: There is no relationship between **affordability** and the improving accessibility of mental health services.

H4₁: There is a positive relationship between **affordability** and improving the accessibility of mental health services.

H5₀: There is no relationship between **appropriateness** and improving the accessibility of mental health services.

H5₁: There is a positive relationship between **appropriateness** and improving the accessibility of mental health

services.

H6₀: There is no relationship between **ability to perceive** and improving the accessibility of mental health services.

H6₁: There is a positive relationship between the **ability to perceive** and improving the accessibility of mental health services.

H7₀: There is no relationship between the **ability to seek** and improving the accessibility of mental health services.

H7₁: There is a positive relationship between the **ability to seek** and improving the accessibility of mental health services.

H8₀: There is no relationship between the **ability to reach** and improving the accessibility of mental health services.

H8₁: There is a positive relationship between the **ability to reach** and improving the accessibility of mental health services.

H9₀: There is no relationship between the **ability to pay** and improving the accessibility of mental health services.

H9₁: There is a positive relationship between the **ability to pay** and improving the accessibility of mental health services.

H10₀: There is no relationship between the **ability to engage** and improving the accessibility of mental health services.

H10₁: There is a positive relationship between the **ability to engage** and improving the accessibility of mental health services.

3.4 Research Design

This research is quantitative research following the design of an exploratory and descriptive purpose for the aim of finding the relations and the direction of correlations between the independent variables and the dependent variable for the applied research. The selection of this research design was dependent on the literature review manner, as the retrieved literature was mainly discussing the relation present or not.

The research will use descriptive statistics, correlational and inferential statistics as types of investigation in order to define the relation, the direction and the amount if possible. The used theoretical model postulated that approachability, acceptability, availability and accommodation, affordability and appropriateness are the five dimensions of access of healthcare services with a corresponding five abilities of people in need of care have a relation with the accessibility to healthcare without stating the direction or the amount. This research will use the type of investigation with a non-contrived concept through a 0% amount of control (Minimal control).

The investigation and data collection will be conducted through a questionnaire survey in a field study that will collect the data once in a cross-sectional manner.

4. Data Collection and Analysis

The interview will be conducted using an online survey using Google Forms that was distributed over social media. The questions included were open-ended questions in order to collect and analyze the respondents' answers. Questions from prior literature adopting the same model were used as a guide.

Table 1. Data collection questions version 1

Question	Scale	Variable
Name Email City Gender Age	Short Answer	profiling
In general, how would you rate your overall mental or emotional health?	Excellent Good Fair poor	Approachability
Do you have experience with going to mental therapy/consultation?	Yes, I have a regular doctor Yes, I tried multiple ones No, but I want to No, never	
Is there a mental health center, or clinic you know, or you're willing to go to for mental therapy/ consultation?	Yes, I have particular one in mind Yes, Multiple ones No, but searching Not at all	
Do you know about online platforms	Not at all	

offering mental therapy or mental care services?	Slightly Some Very much	
Do you think you need mental support or consultation?	Not at all Slightly Very much Extremely	To perceive
How much do you know about mental illness and mental disorders? (Anxiety, Depression, etc..)	Not much Fair Some Very much	
Have you ever experienced any mental problems? (Anxiety, depression, panic attacks)	Not at all Slightly Very much Extremely	
Would you trust these mental therapy platforms in terms of information or treatments if provided by qualified psychologists and psychiatrists?	Not at all Slightly Very much Extremely	
Have you heard of "shezlong" website?	Not at all No but I want to know more Yes, but never tried it Yes, tried it before	
In your experience, how much do education and mental health literacy affect a person's perception of going to mental healthcare services?	None Slightly Neutral Very much Extremely	
Have you ever tried any online service providing consultations or mental therapy?	No, never No, but willing to Yes, one time Yes, multiple times	To seek
Would the culture affect your decision to pursue mental support if needed? (Stigma or fear of society)	Not at all Slightly Very much Extremely	
Would your decision to pursue mental support/consultation be easier if the service is provided online?	Not at all Slightly Neutral Very much Extremely	
(Reflect on cultural, and social factors) To what extent do you think that culture and society can influence people's decision to go to mental therapy? (In terms of stigma, public image, or fear of society)	Not at all Slightly Neutral Very much Extremely	Acceptability
From your point of view, would "stigma" and "fear of society" act as barriers to accessing mental health care?	Not at all Slightly Neutral Very much Extremely	
(Reflect on availability and accommodation) To what extent do you think that the place and distance can influence your decision to go to mental therapy? (In terms of effort and time)	Not at all Slightly Neutral Very much Extremely	Availability and Accommodation
If you plan to go mental therapy or consultation, How long does it take you to get to your session?	More than 1 hour 1 hour or less 15 to 20 mins Less than 5 mins I prefer online	
How do you rate the usual waiting time for an appointment with your psychiatrist/ psychologist?	Could be hours. Less than 1 hour Few minutes No waiting time.	

	Never tried	
Did you experience any mental care services not being available in the area you live (either not existent or shortage of availability)?	Not at all Slightly Neutral Very much Extremely	
(In terms of distance, time, and transportation) In case you need mental therapy/support would you prefer physical or online?	Physical online	To reach
From your point of view, would access to mental therapy be easier if it was provided online?	Not at all Slightly Neutral Very much Extremely	
How much do you think you can pay as a cost of mental care services? (Per Session)?	Short answer	To pay
Are there times when you refrained from seeking mental support or consultation by a doctor because of the costs?	Not at all Slightly Neutral Very much Extremely	
Do you think that the prices of mental therapy oppose a barrier to accessing those services?	Not at all Slightly Neutral Very much Extremely	Affordability
Are there times when you find it difficult to get mental health care services because of the additional costs it involves (babysitting, transportation, etc.)?	Not at all Slightly Neutral Very much Extremely	
How satisfied are you with the facilities offering mental health Services in your community?	Not at all Slightly Neutral Very much Extremely	Appropriateness
From your point of view, Would the session provided online differ from the physical one (in terms of quality and Privacy)?	Same Better Worse Not sure	
How engaging do you think the online platforms offering mental therapy would be?	Not at all Slightly Neutral Very much Extremely	To engage
According to your experience/expectations, How satisfying would the session provided online be?	Not Satisfying at all Slightly satisfying Neutral Satisfying Very satisfying	
Do You think the presence of online platforms offering mental therapy and consultation services would decrease the barriers to mental health care access?	Not at all Slightly Neutral Very much Extremely	
To what extent do you agree or disagree with the statement: The presence of online platforms offering mental support/ consultation will improve accessibility of those in need to the appropriate mental care	Strongly disagree. Disagree Neutral Agree Strongly Agree	Accessibility (dependent variable)

Table 2. Data collection questions version 2

Question	Scale	Variable
Name Email City Gender Age	Short Answer	profiling
You would trust online mental therapy platforms in terms of information or treatments if provided by qualified psychologists and psychiatrists	Strongly disagree. Disagree Agree Strongly agree	To perceive
Education and mental health literacy affect a person's perception of going to mental healthcare services	Strongly disagree. Disagree Agree Strongly agree	
You think you need to go to mental therapy/consultation	Strongly disagree. Disagree Agree Strongly agree	
You experienced mental and emotional problems before (in terms of anxiety, depression, etc..)	Strongly disagree. Disagree Agree Strongly agree	
You experienced going to a mental therapist/Counselor before	Strongly disagree. Disagree Agree Strongly agree	
How would you rate your overall mental and emotional health	Poor Fair Good Excellent	Approachability
How would you rate your knowledge about mental health diseases and/or disorders like (anxiety, depression, etc..)	Poor Fair Good Excellent	
You have a certain mental health center, or clinic you know, or you're willing to go to for mental therapy/ consultation	Strongly disagree. Disagree Agree Strongly agree	
You have enough information about online platforms offering mental support and mental health services	Strongly disagree. Disagree Agree Strongly agree	
How would you rate the "availability of information" and the "awareness" towards mental health in your society	Poor Fair Good Excellent	
Culture and society can influence people's decision to go to mental therapy	Strongly disagree. Disagree Agree Strongly agree	Acceptability
People tend to be culturally insensitive (judge or stigmatize) those with mental health disorders	Strongly disagree. Disagree Agree Strongly agree	
"Stigma and fear of society" can act as cultural barriers to accessing mental health care	Strongly disagree. Disagree Agree Strongly agree	
Most people consider mental illness as a sign of weakness (either in religion or personality)	Strongly disagree. Disagree Agree Strongly agree	
Your decision to go to mental therapy/consultation would be affected by what people may think	Strongly disagree. Disagree Agree	To seek

	Strongly agree	
Reflecting on the cultural and social factor Your decision to go to mental therapy/consultation would be easier if the service is offered online	Strongly disagree. Disagree Agree Strongly agree	
Culture is one of the reasons that can hold you back from using mental care services	Strongly disagree. Disagree Agree Strongly agree	
The place and distance play important role in your decision to go to mental therapy	Strongly disagree. Disagree Agree Strongly agree	Availability and accommodation
Distance can act as a barrier to accessing mental health care services	Strongly disagree. Disagree Agree Strongly agree	
How would rate the availability of mental healthcare services (either not existent or shortage of availability)	Poor Fair Good Excellent	
"To avoid hassle factor of transportation, distance and effort" You would prefer sessions provided online than physical	Strongly disagree. Disagree Agree Strongly agree	
Reaching mental health services would be easier if it is provided online	Strongly disagree. Disagree Agree Strongly agree	To reach
People in need can reach mental health care services easily and in a timely manner without any delays that can put their lives at risk in your society	Strongly disagree. Disagree Agree Strongly agree	
Financial barriers can affect people's decision to pursue mental health services	Strongly disagree. Disagree Agree Strongly agree	Affordability
Online platforms offering mental health services tend to be more affordable than physical ones	Strongly disagree. Disagree Agree Strongly agree	
Additional costs like (transportation, babysitting, parking slots) can make it more difficult to pursue mental support/consultation	Strongly disagree. Disagree Agree Strongly agree	
How would you rate the costs of the mental health care service	Poor Fair Good Excellent	
There were times when you refrained from seeking mental support/consultation by a certain doctor because of the costs	Strongly disagree. Disagree Agree Strongly agree	To pay
Prices oppose a barrier to accessing mental health care services	Strongly disagree. Disagree Agree Strongly agree	
How would you rate your overall satisfaction with the facilities offering mental health services in your community?	Poor Fair Good Excellent	Appropriateness
Mental therapy/ consultation sessions provided online would be delivered in a good way by qualified health service providers	Strongly disagree. Disagree Agree Strongly agree	
Mental therapy/ consultation sessions	Strongly disagree.	

provided online would be as good as physical ones in terms of quality and better in terms of privacy	Disagree Agree Strongly agree	
Online sessions will provide information sufficiently and answer all your questions	Strongly disagree. Disagree Agree Strongly agree	To engage
Mental health services offered online would be as engaging as physical ones	Strongly disagree. Disagree Agree Strongly agree	
The presence of online platforms offering mental therapy and consultation services would decrease the barriers to mental health care access	Strongly disagree. Disagree Agree Strongly agree	Accessibility (Dependent variable)
The presence of online platforms offering mental support/ consultation will improve accessibility of those in need to the appropriate mental care	Strongly disagree. Disagree Agree Strongly agree	

5. Results

This research presents a descriptive analysis of the survey questions issued on the variables using Levesque et al. theoretical framework. The research relies on a non-probability sampling technique since it is an exploratory study, assuming that the sample chosen to respond to the study questionnaire is representative of the population. By the end of the data collection period, a total of 60 adults participated in the survey comprising a 58.3% of females and 41.7% of males. For the total age groups, the most respondents were from the age of 18-24 with a percentage of 58.3%.

Table 3. Characteristics of study sample and respondents

Total Sample		
Gender	N	%
Men	25	41.7
Women	35	58.3
Total	60	100
Age Group		
Age Group	N	%
18-24	35	58.3
25-34	16	26.7
35-45	8	13.3
55+	1	1.7
Total	60	100

This research used Levesque et al. conceptual framework which evaluated accessibility as a dependent variable influenced by other 10 independent variables. The survey was built on a range of 2 to 5 questions for each variable. The reliability test cited an acceptable value of 0.60 for Cronbach alpha to all variables with a minimum value of 0.483 for the variable (appropriateness) and a maximum value of 0.658 for the variable (acceptability).

Table 4. Reliability statistical analysis

Variable	Cronbach Alpha	Number of items
Ability to perceive	0.567	3
Approachability	0.516	2
Acceptability	0.655	3
Ability to seek	0.626	2
Availability and Accommodation	0.626	2
Ability to reach	0.646	2
Affordability	0.512	2
Ability to pay	0.653	2
Appropriateness	0.483	2
Ability to engage	0.581	2

The data obtained found that all variables were reliable and consistent except for one variable (Appropriateness) which was found to have a Cronbach alpha value of 0.483 lower than 0.50. Consequently, the research has culminated that the data collected was legitimate for one sample t-test, correlation, and regression tests.

According to the table below, the analysis of the one sample t-test showed that the population used in the data collection agrees upon the designated value of all the variables except for one variable (Approachability) with statistical significance.

Table 5. One Sample t-test analysis

Variable	One sample		t-test	
	Mean	Standard deviation	T-test	P-value
Ability to perceive	3.655	0.823	6.168	Sig.
Approachability	2.550	0.941	3.700	Sig.
Acceptability	4.477	0.515	22.235	Sig.
Ability to seek	3.567	1.064	4.1272	Sig.
Availability and Accommodation	4.216	0.709	13.286	Sig.
Ability to reach	3.858	0.935	7.113	Sig.
Affordability	4.358	0.625	16.835	Sig.
Ability to pay	3.900	1.012	6.890	Sig.
Appropriateness	3.833	0.816	7.905	Sig.
Ability to engage	3.575	0.947	4.703	Sig.
Accessibility	4.250	0.634	15.260	Sig.

Accordingly, to test the relationship between the independent variables and the dependent variable (Accessibility to mental healthcare) a correlation analysis was performed between the study variables using correlation test.

Table 6. Correlations statistical analysis

	Accessibility	
	Correlation	P-Value
Ability to Perceive	-0.0324	0.805
Approachability	-0.1134	0.388
Acceptability	0.1383	0.292
Ability to seek	0.389**	0.002
Availability and accommodation	0.311*	0.016
Ability to reach	0.539**	0.000
Affordability	0.005	0.968
Ability to pay	0.317*	0.014
Appropriateness	0.458**	0.000
Ability to engage	0.539**	0.000

**Correlation is significant at the 0.01 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

According to the above table addressing the relation between variables, it was shown that two variables Approachability (APP) and Ability perceive (PER) had a negative correlation with the dependent variable accessibility to mental health care services (ACCE) with no statistical significance since the p-value is > 0.05. Meanwhile, the rest of the variables showed positive correlation with the dependent variable. Elaborating that only the variables; Ability to seek (SEE), Availability and accommodation (AVA), Ability to reach (REA), Ability to pay (PAY), Appropriateness (APPR) AND Ability to engage (ENG) showed statistically significant positive correlation with the dependent variable (ACCE). While the variables Acceptability (ACC) and Affordability (AFF) showed a positive correlation without statistical significance.

For further evaluation of the strength of the abovementioned relationships between variables, a regression analysis was made.

Variable	Coefficient		t-test		R	R ²	F-test	
	B	S.E	t	P-value			F	P-value
Ability to perceive (PER)	-0.025	0.101	-0.247	0.806	0.032 ^a	0.001	0.061	0.806 ^b
Approachability (APP)	-0.076	0.088	-0.870	0.388	0.113 ^a	0.013	0.756	0.388 ^b
Acceptability (ACC)	0.171	0.160	1.064	0.292	0.138 ^a	0.019	1.132	0.292 ^b
Ability to seek (SEE)	0.232	0.072	3.219	0.002	0.389 ^a	0.152	10.363	0.002 ^b
Availability and accommodation (AVA)	0.278	0.112	2.490	0.016	0.311 ^a	0.097	6.198	0.016 ^b
Ability to reach (REA)	0.366	0.075	4.879	0.000	0.539 ^a	0.291	23.807	0.000 ^b
Affordability (AFF)	0.005	0.133	0.041	0.968	0.005 ^a	0.000	0.002	0.968 ^b
Ability to pay (PAY)	0.199	0.078	2.544	0.014	0.317 ^a	0.100	6.472	0.014 ^b
Appropriateness	0.356	0.091	3.924	0.000	0.458 ^a	0.210	15.400	0.000 ^b

(APPR)								
Ability to engage (ENG)	0.361	0.074	4.880	0.000	0.539 ^a	0.291	23.812	0.000 ^b

The regression analysis concurred with the correlation analysis, exhibiting that the two independent variables; ability to perceive (PER) and Approachability (APP) has a negative relationship with the dependent variable with no statistical significance to that relationship. However, the rest of the independent variables; Acceptability (ACC), Ability to seek (SEE), availability and accommodation (AVA), Ability to reach (REA), Affordability (AFF), Ability to pay (PAY), Appropriateness (APPR) And Ability to engage (ENG) has a positive relationship with the dependent variable. Using (Patten & Newhart, 2017) as a reference for the aim of quantifying the relationship among the variables, It was stated that the correlation coefficient (R) demonstrates the strength as; if $R < 0.3$ = weak correlation, $R = 0.3$ to 0.5 = Moderate correlation and $R > 0.5$ = Strong correlation. Accordingly, and starting with the first two independent variables, approachability (APP) and ability to perceive (PER) had a weak negative relationship with the dependent variable accessibility to mental healthcare services (ACCE) with R value < 0.3 , while Acceptability (ACC) and Affordability (AFF) had a weak positive relationship with the dependent variable with no statistical significance to either one of them. Meanwhile the following variables: Ability to seek (SEE), Availability and accommodation (AVA), Ability to pay (PAY), Appropriateness (APPR) showed a statistically significant moderate positive relationship with $R > 0.3$. whereas Ability to engage (ENG) and Ability to reach (REA) had a statistically significant strong positive relationship with the dependent variable with R value > 0.5 .

To have a better understanding of the study findings, a full review of the studies that utilized Levesque theoretical framework in the development of its data collection tool/s or in organizing and analyzing collected data was performed. A total of 31 studies were found between studies that used the framework either in priori or posteriori manner. A qualitative study by Afshar, (2019) discussing the access to healthcare for refugees' children in Netherlands using Levesque, Harris, and Russell's (2013) access to health care framework agreed upon the same concept of this paper. Afshar, (2019) identified multiple factors as barriers to proper access to health care for those in need focusing on five dimensions of the framework. He highlighted that availability and accommodation; acceptability and approachability were the main factors influencing the connection of the refugees with healthcare services physically and in a timely manner. The same idea was supported in another qualitative study by Miteniece, Pavlo, Shengelia, Rechel, & Groot, (2018) that was furtherly reinforced by another qualitative study by Miteniece, et al., (2018). On the other hand a qualitative study by Henry, Beruf, & Fischer, (2019) that utilized the corresponding five dimensions of the theoretical framework argued that factors reflecting the aspects "ability to seek" and "ability to pay" were the most problematic factors when discussing barriers to access facing pregnant Arabic-Speaking Refugee Women and Mothers in Germany which also agrees with the findings with this research that both factors have a positive correlation with the dependent variable.

Moving on to the quantitative studies, A study by Packness, Halling, Simonsen, Waldorff, & Hastrup, (2018) elaborated that 30.1% of respondents reported that expenses composed the main barrier to accessibility to healthcare services, which is reflected as "affordability" and "ability to pay" in this research. The second most common barrier was stigma or "acceptability", followed by Knowledge or how to find help. While transportation or "Availability and accommodation" and "ability to reach" as defined by the framework was the least prevalent in general. This shows a partial harmony with the findings of our research with some disparities giving the differences in the study settings and the study population characteristics.

6. Research Findings and Recommendations

The purpose of this study was to determine whether the availability of online platforms providing mental health support and consultation services will assist in removing the obstacles that prevent those in need from accessing mental health care services in Cairo. There are a variety of reasons why the idea of mental therapy is still not widely accepted in all communities, all of which were addressed by the aforementioned fields. In the context of the research, the argument was centered on determining the relationship between ten distinct independent variables that could either facilitate or act as barriers to the accessibility of mental health care services. The primary research findings indicated that eight independent variables positively impacted the accessibility of patients. The review of studies using the theoretical model proposed by Levesque et al., 2013 yielded similar results. Even though this theoretical framework was applied repeatedly to contextual problems that were similar to this one, no research paper was found that applied the same technique of analysis or processing the topic of mental healthcare services in the same instances. The results of the statistical analysis offered insightful information about mental health therapy from an Egyptian perspective. Although the acceptability of the mental wellness idea in Egypt was the main driver of the research, the correlation and regression analysis revealed that "Acceptability, Affordability, Ability to seek, Availability and Accommodation, Ability to pay, Appropriateness, Ability to engage and Ability to reach" act as the main barriers that influence or hinder the Egyptian

patients from accessibility to mental services.

This takes us to some recommendations that could help increase accessibility to mental healthcare that are based on this prior research context and the previously mentioned points:

- **Spreading the concept of acceptability:** Open communication, the use of social media or other platforms for mental health discussions, increasing social awareness and a greater understanding of and acceptance of mental health issues by society will all help to reduce social stigma and discrimination.
- **Managing the affordability and ability of customers to pay:** The perception of mental therapy as a luxury option is influenced by the current economic crisis and inflation in Egypt which is affecting the prices of therapy means. However, this perception can be lessened by the availability of multiple platforms that provide mental support services, particularly online, which allows customers to view a variety of psychiatrists and psychologists at varying price points to better suit their needs. Enhancing those platforms by adding more credible physicians to their roster or allowing online therapy in real-world settings will therefore boost supply and contribute to price reductions.
- **Encouraging the ability to seek mental support:** Education is crucial for mental health, particularly in academic institutions where it will combat the stigma associated with mental illnesses and promote acceptance of psychotherapy. Furthermore Growing wellness programs and initiatives in schools and colleges will teach young people the value of mental health, how to communicate with others when they're stressed, and how to seek out mental support whenever they need it.
- **Availability and Accommodation:** The presence of online therapy platforms can help overcome obstacles like distance, traffic, and waiting times because it will reduce a lot of customers' perceived hassle factor. This will make the service accessible from anywhere at any time, which will give the patient and the therapist more flexibility and more frequent contact.
- **Boosting the appropriateness of the service and the ability of customers to engage:** the marketing of the idea that the overall quality of the mental therapy service will not be any less in the online platforms than the conventional ones would set an example to the customer experience that will encourage people who are more interested in privacy and secrecy to pursue such platforms. Also spreading the awareness of the presence of such platforms through marketing campaigns and on ground activities will contribute to increased knowledge to such an option that in the end will increase access to mental services to those in need.

In conclusion, the access to health care services is viewed in this research as a result of the interaction between determinants and services, the higher a patient may evaluate the above determinants, the more likely they would have more accessibility and by focusing on ways to lower these barriers, the percentage of mental burden could decrease remarkably in the future.

7. Further Research

Further research with a wider scope needs to be done to include other online platforms like talkspace, better-help and O7 all of which provide psychotherapy but with different approaches. The utilization of other platforms that apply the same concept but with different methodology will be a very fertile environment to meticulously examine the different segments that will pursue this approach which will help explore the actual determinants and barriers on a whole different level. Additionally, more variables that appeared during the data collection and literature search phases need to be explored more thoroughly. Variables like ethical consideration, patients' characteristics and levels of compliance that might affect patients' choices to pursue online or physical mental therapy. The use of interviews can be employed as a means of data collection in further research instead of questionnaires in order to collect data more thoroughly and comprehensively.

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Authors contributions

Ashraf Elsafty¹ full study supervision, methodology development, full writeups editing, revising data nalaysis and interpretation, research head of the full project and paper development.

Mai Shawky² full study implementation, writing and paper development on all sections, including contextual analysis, literature review, data collection analysis and interpretation.

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