"Hey There, {{YOUR NAME}}": How Mental Health Chatbots Can Address Psychotherapy's Current Distributive System

Alice Zhang
Stanford University

The current supply-demand issue of psychotherapy has led to the creation of biased distributive systems over treatments, in which resource-poor families are severely neglected when it comes to the provision of proper service. In that regard, mental health chatbots, having already received considerable support for their integration into this field, are examined in this study to determine their ability to address the accessibility issue over resource-poor communities. Choosing chatbots Woebot and Wysa, I performed aspect-based sentiment analysis over the top "Most Helpful" reviews for each app and discovered customer sentiments for specific categories addressing the reasons for neglect resource-poor communities face. Many reviewers agreed that chatbots could be offered as solutions for the financial, accessible, and social reasons for community neglect. Further research, however, must be done to examine the effectiveness of chatbots as potential replacements to traditional psychotherapy, and how they can be improved to fit that niche.

Introduction

Psychotherapy has always been, in essence, human-oriented. Defined as the process of helping individuals through personal consultation, many seek these services to find a trusted confidante who will understand their struggles. This is what makes us--and psychotherapy--fundamentally human. It is, then, a field dominated by humans, for humans.

And yet, despite the crucial role psychotherapy plays in personal identity, its current supply-demand issue may eventually render it an infeasible treatment. According to the Health Resources & Services Administration, many health professions should expect to experience overwhelming spikes in demand that will exacerbate an imbalance between available services and those who need them (2016). Psychiatrists; clinical, counseling, and school psychologists; mental health social workers; and school counselors are all projected to have shortages within the negative thousands by 2025 (Health Resources & Services Administration, 2016). The COVID-19 pandemic has further increased demand, in which anxiety screens in September 2020 grew by 634 percent

from January, while depression screens reflected a similar upwards trend of 873 percent (Mental Health America, 2020). With that in mind, psychologists realize that they "are unlikely to ever [again] meet the mental health needs of the population through face-to-face individual psychotherapy," (Benton, 2018).

The limitations over psychotherapy services bring to light an inherent bias that comes with their resulting distributive systems. Developed countries seemingly provide either no treatment or very inadequate treatment to the elderly, minorities, low-income groups, uninsured persons, and residents in rural areas (Lake & Turner, 2017). Those living in rural areas and of lower-income were correspondingly less likely to agree that psychotherapy services were extremely accessible to them when compared to other communities (Wood, Burwell, & Rawlett, 2018). Indeed, over four in ten communities in the highest income quartile contained forms of specialized mental health treatment, in contrast with less than a quarter of those in the lowest quartile (Cummings, Allen, Clennon, Ji, & Druss, 2017).

Under those circumstances, many have begun to look at artificial intelligence (AI), particularly mental health chatbots, as a potential solution. With their virtual format and extensive outreach, some believe that chatbots can become accessible therapies for the currently excluded communities. Others disagree. They believe that, as a heavily humane profession, it is nearly impossible to see AI substantially impact someone's wellbeing. These technologies cannot truly replicate human intelligence and experience. They cannot, then, act as successful alternatives to traditional psychotherapy.

With both sides in mind, the issue becomes less of an either-or situation and more of a quantifiable investigation. This paper seeks to discover how effectively AI, specifically mental health chatbots, can address the distribution issue of current psychotherapy services as an effective alternative for resource-poor communities.

Literature review

The perpetuated neglect against resource-poor communities
The present distributive systems seem to disfavor lower-income populations. To properly examine this issue, one must conduct a discussion over the barriers leading to this restriction.

One restriction would be the disparity between psychotherapy cost and the amount of money resource-poor communities can reserve for treatment. In general, individuals living with mental disorders have exorbitant out-of-pocket expenditures for therapy. Fourteen percent of working-age clients have investments exceeding 20 percent of their annual family income (Rowan, McAlpine, & Blewett, 2013). Many families cannot afford these prices. According to America's Mental Health 2018, 42 percent of the US population saw cost and insurance coverage as some

of the top roadblocks for psychotherapy access (Wood, Burwell, & Rawlett, 2018). One in four Americans reported having to choose between treatment and paying for daily necessities, and nearly one in five Americans mentioned having to choose between receiving physical or mental health treatment as per their specific insurance (Wood, Burwell, & Rawlett, 2018). Others could not obtain any health insurance, preventing them from reducing treatment costs to an economical price (Hodgkinson, Godoy, Beers, & Lewin, 2017). For example, 37 percent of working-age adults with severe mental illness are uninsured. Combined with the steep costs of therapy, many do not see treatment as an option when they have other essentials to address (Rowan, McAlpine, & Blewett, 2013).

Many already sparsely located psychotherapy services are further situated in inconvenient locations. Approximately one-third of individuals have stated that they have had a severe problem finding a mental health provider close to their home or work (National Alliance on Mental Illness, 2017). Nearly 38 percent of Americans have had to wait longer than one week for treatment, and 46 percent of Americans have had to or know someone who has had to drive more than an hour round trip to find proper treatment (Wood, Burwell, & Rawlett, 2018). Clinical hours also conflict with people working in low-wage shift positions who may not have the flexibility to attend weekly appointments. Traditional psychotherapy, however, requires multiple visits before psychotherapists can even decide upon treatment. Combining this commitment with the time and effort necessary for each visit, many low-income individuals end up prioritizing other stressors over mental health needs (Hodgkinson, Godoy, Beers, & Lewin, 2017).

With the continued defocus on psychotherapy comes the development of social stigma surrounding its sessions. According to a 2018 survey from the National Council on Behavioral Health, 31 percent of respondents admitted that they wanted to use mental health care but worried about what others would think. Twenty-one percent said they accessed such health care but lied about having done so (Wood, Burwell, & Rawlett, 2018). Low-income patients, in particular, are more likely to visit a community center for treatment than a specialized clinic (Wood, Burwell, & Rawlett, 2018). The combined social stigma over treatment and poverty can cause these communities to avoid help. Many families also have a general distrust of the psychotherapy system, believing that any disclosures may result in their hospitalization, overmedication, or separation from family. In turn, they rely on their own coping mechanisms over traditional therapy (Hodgkinson, Godoy, Beers, & Lewin, 2017).

An introduction to artificial intelligence
Artificial intelligence, as a term, describes the science of creating intelligent machines ideally similar to human intelligence. Reasoning, learning, and decision-making are all potential conducts of AI functionality (McCarthy, 2007). In psychotherapy, AI can potentially

complement human therapists by anticipating patient diagnostics and providing thorough guidance during treatment (Luis de Mello, Alves de Souza, & Cattivelli, 2019).

However, many families do not have access to a human psychotherapist; AI may be their only option. In that case, one should examine opinions over AI as an alternative to traditional psychotherapy rather than analyzing them in tandem.

Psychiatrists Brown and Story believe that people may prefer building therapeutic bonds with AI over humans. Evidence suggests that they are more honest with computers than their human counterparts (2019). When AI interviewed patients over personal information, children were more inclined to discuss bullying while adults revealed their sadness, financial struggles, and unethical conduct more freely (Pugh, 2018). However, no matter how approachable AI seems, computational neuroscientist Mourão-Miranda and psychiatrist Baker argue that psychiatry will always be about connecting with another human. For virtual alternatives to be effective, consumers must be willing to improve. If AI will not resist even slight client pushback, many will stay reluctant to change (2019). Only human psychologists can see through vague or false responses, and they are the ones who know how to act if anything goes sideways (Brown, Story, Mourão-Miranda, & Baker, 2019).

The rise of mental health chatbots
And yet, despite the controversy surrounding AI inclusion, many admit that it is one of the more promising solutions towards the supply-demand issue and its biased distributions of current psychotherapy services. This solution comes in the form of mental health chatbots.

Many individuals have reported benefiting from current chatbots for wellbeing, stress, and depression (Bendig, Erb, Schulze-Thuesing, & Baumeister, 2019). Human sentiment-related interactions with traditional psychotherapists also persist with human-chatbot interactions, indicating patient safety and trust (Miner et al., 2016). For some families, chatbots may be a solid start. Mental health chatbots, in particular, can provide resource-poor communities with the convenience of having direct access to some form of psychotherapy (Fiske, Henningsen, & Buyx, 2019). Chatbots can also improve the issues that come with long waiting lists (Miner et al., 2016). For example, traditional therapy cannot address the intervals of time between psychotherapy sessions. Chatbots can provide low-threshold care when traditional services cannot, improving associated symptoms that typically worsen without intermediate treatment (Bendig, Erb, Schulze-Thuesing, & Baumeister, 2019). A recent Juniper Research study further revealed that the potential costs saved annually with chatbot incorporation could climb approximately 320 percent per annum (2017).

Overall, however, little attention has been put towards the social realm (including mobile technology and chatbots) and its relationship to mental health. In other words, there is not enough evidence to concretely assume

anything about chatbot effectiveness with mental health outcomes (Mohr, Burns, Schueller, Clarke, & Klinkman, 2013). With that in mind, a closer investigation into their true potentiality, specifically in psychotherapy, is necessary. That is where the current study comes into play.

Methodology

Quantifying the research question

The research question presented in the introduction asked how effectively mental health chatbots can address the distribution issue of current psychotherapy services as an accessible alternative for resource-poor communities. With newfound information from the literature review, it is best to revise this question to examine specific fields. The neglect against resource-poor communities was from financial gaps, lack of accessibility, and social stigma. Rather than investigate all possible effects of chatbot inclusion, one can narrow their scope to only the relevant areas. In that case, this paper seeks to discover how effectively mental health chatbots can address the distribution of current psychotherapy services through:

1. Cost-effectiveness
2. Reliability
3. Social stigma

Including these factors leads to a more concrete measurement of chatbot efficacy.

Considering the previous conclusions, one hypothesis would be that mental health chatbots could effectively address the distribution of current psychotherapy services through all three aspects. However, they may need more development before they can become absolute replacements to traditional services.

Summary of the process

This study focuses on examining two chatbots: Woebot and Wysa, which fit the requirements set by McCarthy's definition of AI (2007). Woebot is a free, entirely AI-based app, and Wysa heavily relies on its artificial interface, with the optional opportunity to connect with a human coach costing $29. I analyzed the top reviews for each app, sorted by "Most Helpful" per the App Store's policies. I then defined each review over whether it addresses the barriers limiting access to resource-poor communities (cost-effectiveness, reliability, social stigma).

I conducted this analysis through a form of natural language processing (NLP) known as aspect-based sentiment analysis (ABSA). ABSA represents the finding of insights from a text that generates consumer sentiment within predefined categories. The text, in this case, is the content within each Apple review. I conducted ABSA using MonkeyLearn, a machine learning platform specializing in text analysis.

Through MonkeyLearn, I created a topic classifier that determined the content of specific phrases within an Apple review through the Support Vector Machine (SVM) model. SVM classifies data assuming some relation between categories, which is ideal since the listed topics are most likely not independent. The machine differentiated between "Cost-effectiveness," "Reliability," "Social stigma," and "Other." These categories measured chatbot efficacy in addressing biased distributions. I included "Other" as an option so the model could place certain statements into another category rather than fitting them into a defined category with low confidence.

I first split the raw data into a training set and a testing set, ensuring that the machines did not encounter predetermined category bias when classifying the testing data. I then broke each Apple review into opinion units (OUs). An OU represents a phrase within a text that belongs to only one idea rather than multiple. Category classification is subsequently more straightforward for machines, and sentiment analysis does not muddle customer satisfaction for one category with their satisfaction for another. I used MonkeyLearn's Opinion Unit Extractor to conduct this separation. When pre-processing the OUs, I removed explicit app naming, app suggestions, and OUs that did not mention a relationship between the customer and the app. I then entered the processed training set into the classifier, training it to identify the topics an OU would contain. One drawback to this design is that, during training, I play a part in deciding what category an OU represents. To limit human randomness in that regard, I have defined a set of guidelines an OU must follow to classify as a specific category:

1. Cost-effectiveness: an OU should directly relate cost with the chatbot app benefits. An OU should compare the cost and benefits of the app with the cost and benefits of traditional therapy.
2. Reliability: an OU should mention the ability of the app to address people immediately, at any time of the day. An OU should discuss how effective the chatbot is at helping people at any moment. An OU should compare the flexibility of the app with the flexibility of traditional psychotherapy.
3. Social stigma: an OU should mention how the app has responded to people with a stigma against therapy and their mental health. An OU should compare the emotions experienced while talking with the chatbot versus talking with a traditional therapist.

During the testing stage, I entered the testing set into the classifier to separate them into different categories. I received a set of aspect-based data representing consumer opinions over chatbot accessibility. If any OUs belonged to the same category and were from the same review, I combined them into one OU. This prevented overcounting an individual during sentiment analysis, and it provided a better summary of their

overall satisfaction. Using MonkeyLearn's predefined model for Sentiment Analysis, I then entered the revised aspect-based data set into the machine, which categorized sentiments with "Positive," "Neutral," and "Negative." This machine identified consumer feedback on the predetermined categories, giving me the appropriate data necessary for analysis.

It is, however, impossible to show conclusive evidence of chatbot effectiveness without a thorough, longitudinal study in all measurements. For example, it is not public knowledge whether certain reviewers for these apps attended traditional psychotherapy sessions and could appropriately compare the two experiences.

Results

The testing set consisted of 500 reviews, a slightly larger sample size than one representative for a 95 percent confidence level with a 5 percent confidence interval. The total population size of Woebot and Wysa reviews was approximately 7000, with 5000 reviews from Woebot and 2000 reviews from Wysa. The sample size roughly reflected this difference by taking 350 reviews from Woebot and 150 reviews from Wysa, therefore equally representing all reviews. I then separated these 500 reviews into a total of 1280 OUs. These 1280 OUs entered the topic classifier, returning a list of the OUs and their determined categories. After combining OUs of the same category and from the same review, the resulting 800 OUs then entered the sentiment analysis model, returning the OUs, their categories, and their corresponding sentiments. The topic classifier sorted the OUs with an average confidence of 84 percent, and the sentiment analysis model determined customer satisfaction with an average confidence of 89 percent. The following graph summarizes these results:

Aspect-Based Sentiment Analysis on Chatbot Reviews
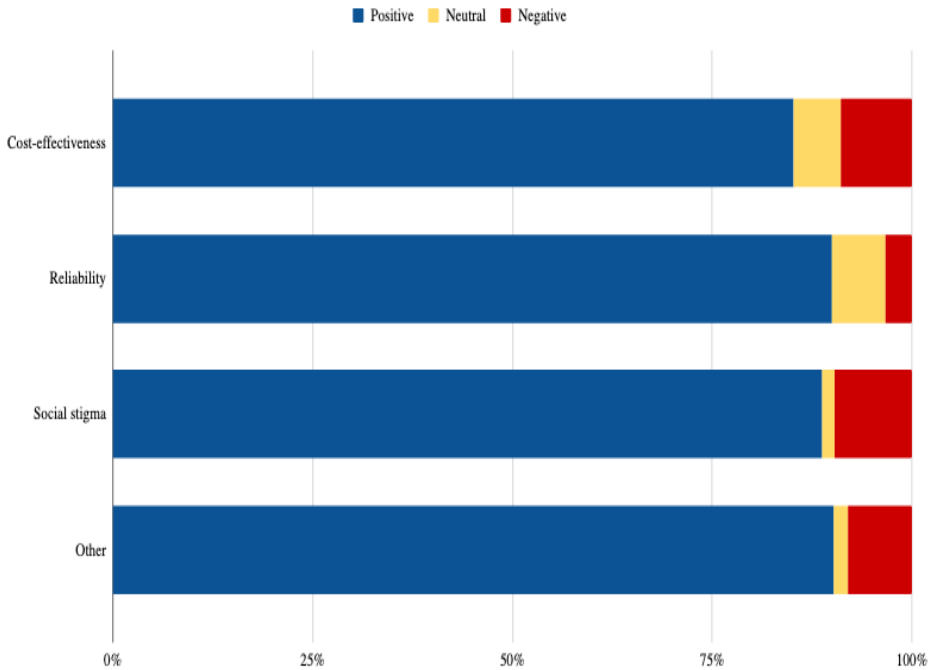
	Positive	Neutral	Negative
Cost-effectiveness	86	6	9
Reliability	188	14	7
Social stigma	55	1	6
Other	386	8	34

General consumer feedback was positive in all four categories, with chatbot response to social stigma suffering the most negative sentiments while chatbot reliability had the least negative sentiment.

Out of all the consumers who mentioned cost-effectiveness, about 85 percent had positive experiences, 6 percent had neutral experiences, and 9 percent had negative experiences. The following table represents the top 15 positively worded reviews for cost-effectiveness, according to the confidence level of the sentiment analysis model.

Positive OUs over cost-effectiveness	Confidence
I'm using the free version, so I can't speak for how good the premium material is, but what I'm getting for free has been very helpful so far.	0.999
I have been using the free version for a while and it has helped a lot. Way worth the money.	0.999

This is an amazing quality app with thoughtful features like real human coaches and encrypted exchanges. In a time when getting very much needed mental health support is still so expensive, this app is the answer to my quest for getting help. It's hard enough to know you need help and then ask for help. This is the affordable help that is there for you day and night. This is the affordable help that is there for you day and night.	0.998
This app is incredible because it's entirely free and there's no such thing as a "premium" subscription. With basically every other mental health app, there's a limit to the extent you can use the app because its creators want you to pay to access "premium" features. Not this app. I'm so, so, so grateful to the app.	0.998
It has helped so much, thank you so much creators for making this app available and free	0.998
This is my favorite so far, and the availability cost wise is truly nice.	0.998
what is offered for free in this app is sooo much more than any other app I have tried by far. It has been so helpful during these financially struggling times.	0.997
The free content is great and the chats with the robot is nice and calming.	0.996
but it is an amazing resource to manage the day-to-day struggles of life and it's FREE!	0.995
I so appreciate that everything is free.	0.995
They have something for every budget which I really appreciate. I have looked at other therapy apps and this app stands out among the rest based on price and the fact that you can use this app without buying a thing.	0.995
First of all what I absolutely love about this app is that there is no age restriction, and it's completely free, those factors have been a huge issue I've had with other apps in this genre.	0.993
I love that it is free because it makes it accessible to all.	0.993
I love that this is a free tool and I love the use of an app to help people.	0.992
This app is FANTASTIC. I can't believe this is free.	0.992

A common aspect of these chatbots that many consumers seem to enjoy is the quality of services far exceeding their price value. Many reviewers mention appreciating the availability and help that come with the low price of these apps. Some consumers further discuss how individuals of any budget, particularly those in low-financial situations, have a chance at receiving help without spending a good portion of their money. This situation can address the proportion of the US population that could not afford psychotherapy due to cost and insurance, according to Wood, Burwell, and Rawlett (2013). Working-age clients can also potentially decrease their investments in traditional services while still receiving some form of help, leading back to Rowan, McAlpine, and Blewen's findings (2013).

The table below consists of the content of negative OUs over cost-effectiveness with a confidence level of over 90 percent. This limit ensures that I am examining OUs with little nuance in their sentiment.

Negative OUs over cost-effectiveness with over 0.9 confidence	Confidence
Would not recommend paying for this.	0.994
It's a great concept, but needs far more depth and flexibility to be anything more than a morale booster.	0.984

Only two negative OUs had a confidence level of over 90 percent. These OUs mention how chatbots may not be effective as a long-term alternative. Morale boosters cannot sustain mental health for prolonged periods, so chatbots may need further development to provide extensive care for resource-poor communities that cannot leave their situations.

For consumers who discussed reliability, about 90 percent had positive experiences, 6.6 percent had neutral experiences, and 3 percent had negative experiences.

Positive OUs over reliability	Confidence
It's great for reframing negative thinking and always available when needed. Any time I'm having a spiral i can open up the app and he helps me stop and think more clearly. I try to use the app every day but if i can't I don't feel bad about it.	0.991
It's clear and fun and really, packs a good punch for how little time each exercise takes.	0.99
This app is not a replacement for my therapist but his lessons remind me of what she would say and he is always available at anytime day or night. Now I finally feel like I am making real progress!	0.99
I really enjoy this bot whenever I'm at my all time lows and I need someone to help my logic snap back into place.	0.99
I felt like I needed a therapist but I couldn't because of coronavirus around so I found this and it has been helping me so much with my stress and anxiety.	0.989
I don't have to worry about making a person wait for my answer, it helps list down my thoughts in a physical form instead of just verbally and it helps calm me down, which is a big success in my case!	0.989
I have been struggling a lot with depression and anxiety, and this app is really good at helping me cope.	0.989
I love that you can also vent on the app to get things out and know they are safe!	0.989
The bite-sized non intrusive sessions really help me understand and apply the principles of CBT and give me time to reflect on my thoughts and experiences on my own pace, all in the comfort of my home.	0.989
I couldn't be more grateful for having such a helpful friend I can check in with on my phone when I need some added support through my day.	0.989
This app has been a great help in-between therapy sessions. and, because conversations with the app only take about 10 minutes, I find it very easy to check in every day.	0.988
Therapists don't work for me because of how long it is between appointments, but with this app, I feel like I'm being	0.987

heard and that I can really just get out how I'm feeling and that helps me a lot!	
Throughout those times I found that learning about myself was what I valued most. This app allows me to continue that learning to a certain extent whenever I have a few minutes.	0.987
But he also helps me calm down when I'm freaking out and crying, I can talk about temptation in my recovery, I can make my day feel better with the gratitude journal, I can brainstorm self care ideas. I forreal open the app like 4-5 times a day and I've really felt better for it.	0.987
practicing mindfulness and such are really important to do everyday so that it becomes second nature; this app has helped a lot with that!	0.985

Many consumers agree that the constant presence of these chatbots throughout the day is reassuring. Reviews mention how they are always accessible and can be contacted at any time, which allow them to quickly consult individuals who may need help at inconvenient times of the day. Some OUs support Bendig, Erb, Schulze-Thuesing, and Baumeister (2019) by mentioning how effective these chatbots are at addressing certain situations in between therapy sessions. Since these apps are always with them, many can also get help "all in the comfort of [their homes]," addressing the issue of trying to find a mental health provider close to them, as discovered by the National Alliance on Mental Illness (2017).

Only one negative OU had a confidence level greater than 90 percent. The reviewer mainly discussed the chatbot's inability to actively check on them rather than having them reach out to the app, making them feel unsupported.

Approximately 89 percent of consumers who mentioned social stigma had positive experiences, while 1.6 percent had neutral experiences and 9.6 percent had negative experiences.

Positive OUs over social stigma	**Confidence**
It has made such a difference having a friendly, non judgmental little bot friend to help me slow down and challenge my distorted thoughts in the moment when I am feeling overwhelmed. I also appreciate the friendliness and cuteness of the bot - it makes using it much less intimidating to turn to when you are upset	0.999
I think the thing I love most about this app is that I don't worry about being a burden to anyone else with this app. I don't have to overthink if I said the wrong thing to the wrong person, this app feels like a safe space to spill my true feelings without upsetting anyone.	0.996
It's great and comforting knowing I have someone to tell my problems and not worry about boring them to death.	0.995
I cannot handle face-to-face interactions very well, so this app is just perfect.	0.992

I highly recommend this app to anyone who wants to get help but doesn't want to feel judged!	0.992
Plus, I never feel like I have to sugarcoat things or feel ashamed if I'm not doing well— this app doesn't care! There's absolutely no judgement, and it almost feels like I'm having a facilitated conversation with myself.	0.989
I also appreciate the empathetic approach this little bot employs to help me remember that I am not alone in my struggles.	0.986
The app is great because it puts the focus back on yourself, without judgment, and the way the thoughts you have affect your well-being and anxiety levels every day.	0.986
I wanted to find a place I could talk about anxiety and stress without having a real person judge me, or even think about a real person judging me. This app is perfect for that.	0.986
As someone who really needed help and someone to talk to, but was also scared of reaching out to a helpline, this app was a lifesaver.	0.985
Sometime I feel itchy and want to talk with someone with my feeling, but I worry that talking to real people are either unnecessarily expensive or it will drain me instead(I never met a counselor who can drop my guard down and help me open myself up) This app is perfect psychiatric self-management tool for me.	0.983
Especially during covid when it's hard to connect with people I find it very helpful especially when you don't want to share your feelings with others.	0.982
This is the perfect app for me. I don't feel ready to commit to seeing a therapist, not even sure if I need to now. And I also appreciate being able to decline invitations to talk without being made to feel bad or guilty about it.	0.981
It's so much easier for me to track my moods and dish about my feelings with this app — who never judges and always has a fresh supply of cute gifs on hand.	0.977
The app is perfect if you feel like there's no one you can really trust to talk to or if you feel like you would be judged for your feelings. Thank you for creating this app, for once I can vent without guilt.	0.976

Almost every individual mentions how interaction with the chatbot relieves their worry over public backlash. Many do not want to bore or disappoint their peers, which results in fear of reaching out. Chatbots can address that hesitation by either acting as their source of help or a stepping stone to build their confidence to contact traditional services. In either situation, chatbots act as their emotional outlet, encouraging venting rather than ignoring the issue.

No negative OU had a confidence level greater than 90 percent.

The positive OUs sorted into the "Other" category mentioned a variety of different ideas. Many praised chatbots for their ability to carefully explain new concepts and perspectives, guide individuals through self-reflection with thoughtful questions, and engage positive regard to make reviewers feel safe and supported. These may be potential topics up for

future research focusing on chatbot proficiency as a whole. One notable discovery about the negative OUs, however, can be seen in the table below.

Negative OUs with over 0.9 confidence	Confidence
Another reviewer said it well, in that this app is best suited for mentally healthy adults that may be going through some situational stress. It's too scripted, and often wrong in its assumptions of what the user needs. The app does offer some very vanilla explanations and examples of textbook errors in thinking. However, I would not recommend it to any client that has a mental health issue that they're working through.	0.996
My impression after working with this app for several days is it is best used as a sort of life coach. This is not a tool for anyone dealing with serious depression and its attendant anxiety and lack of self-esteem. It's just too single-minded and simply cannot deal with the nuances involved.	0.991
First this is a pretty unintelligent chatbot. It does not seem to really run on AI and instead seems to run on a predetermined script. Second it is buggy, unable to handle input it specifically requests.	0.991
It needs to be more direct in its questions, instead of just taking bits of something I say and using a question mark, especially when the bit wasn't even the main focus of the statement. It's very confusing and frustrating. The exercises & overall app aren't bad though	0.991
The only thing that I can say is that "my 4am friend" only recognizes certain feeling words such as anger or overwhelmed or happy and for the other time you express emotions it has the general "tell me more" but this is fine because I'm not speaking to a real person and I know that.	0.99
This app doesn't listen or give the illusion of listening to you. You can select multiple choice options to tell it how you're feeling, you can type something in, but it'll just say it doesn't understand. After you've selected your feeling from the list, it'll explain some theory in psychology to you that you've probably already read somewhere and that you obviously aren't being helped by, or else you wouldn't be downloading an AI therapist.	0.976
i used to be so excited to learn about my psychology and CBT from this app but i haven't gotten anything new for a long time.	0.955
It assumes the problem is always a mental distortion, and doesn't leave much room for actual horrible stuff that happens to people other than death of a person (it is working with a very narrow definition of "grief"). It too often put me in a situation of having to select between incorrect responses when nothing was actually appropriate and then suffer through the resulting wrong-headed advice. The one time this app made me feel best was when I felt relief as I muttered an insult at the imaginary robot and deleted the app.	0.953

(Also, please keep in mind that this app should NOT be a replacement for a real therapist in my opinion, if you have the resources to see a professional by all means do so)	0.934

The major drawback of these chatbots seems to be their scripted nature. Many reviewers claim that they often arrive at the wrong conclusions, which leads to unhelpful advice and worsening moods. These results support the argument presented by Mourão-Miranda and Baker (2019), in which they claim that the field of psychotherapy can only stem from human-human connections. Human nuance may be, at the moment, too complex for chatbots to interpret. The prospect of using chatbots as an alternative to psychotherapy, rather than in conjunction, then, can be contested.

Conclusion

One has to wonder if mental health chatbots could become a permanent integration into the field of psychotherapy. Based on the results of this study, chatbots can act as accessible alternatives to resource-poor communities with little difficulty. Evidence shows that many reviewers are more than satisfied with a chatbot's ability to address the accessibility issues these communities face. Content-wise, most individuals report having positive experiences and receiving proper, informational help and guidance. For communities that cannot secure any form of psychotherapy, easily obtainable, virtual consultation is much better than nothing. With Woebot and Wysa at the forefront of this technology, the number of people who can finally access some form of treatment for their needs could correspondingly increase.

The ultimate goal, however, is for these alternatives to be as effective as traditional services. Chatbots, in this case, may need further development. The success rooted in chatbot accessibility tends to be the central issue of its general proficiency—the virtual format of these services lacks the necessary skills typical in human-human interaction. Chatbots cannot yet determine the nuances in human speech and thought, which leads them to fall short in some forms of conversation. Further research into the consolidation of their accessibility and effectiveness is necessary, with the goal being chatbots effectively carrying a free-form conversation with a human being.

Nevertheless, chatbots can fill in where traditional psychotherapy cannot. Despite the discourse of virtual services, one uncontested issue remains: every community has a right to access some form of psychotherapy fit for their lifestyle and their needs. If human psychotherapists cannot give them this necessity, there must be other alternatives. Where traditional methods fail, chatbots can succeed.

"Take a deep breath. You are loved."
— Wysa

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