



SOEN 6841 Project Report

Chatbot for Mental Health Support

Group 30

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1. Problem Identification

1.1 Problem Statement

Mental health issues are a growing concern globally, impacting individuals across all age groups. The integration of chatbots into mental health care, as highlighted by the use of iHelpr (The iHelpr chatbot provides guided self-assessment on the following topics: stress, anxiety, depression, sleep, and self-esteem), Woebot, and Wysa in a social enterprise setting, represents a significant opportunity. These digital tools can offer accessible, immediate, and personalized support for various mental health challenges, including stress, anxiety, depression, and self-esteem issues. The evolving landscape of mental health care, compounded by the accessibility and scalability challenges of traditional therapy, underscores the need for innovative solutions like mental health chatbots.

1.2 Stakeholder Analysis

Primary Stakeholders:

- **Individuals Experiencing Mental Health Issues:** Including a broad demographic, not limited to youth, seeking accessible and immediate support for conditions like anxiety, depression, and stress.
- **Mental Health Professionals:** Psychologists, therapists, and counselors looking for supplementary tools to enhance patient care.
- **Healthcare Institutions:** Hospitals and clinics that could integrate chatbots into their service offerings to provide preliminary support and assessment.
- **Employers:** Organizations aiming to support employee well-being and mental health in the workplace.
- **Technology Developers:** Teams involved in the development, maintenance, and improvement of mental health chatbots and digital interventions.

Interests and Concerns:

- Stakeholders universally prioritize the clinical effectiveness of mental health chatbots, emphasizing accessibility by transcending physical and financial barriers. Confidentiality is paramount, necessitating robust user data privacy. User-friendly design, engaging interfaces, and empathetic conversational quality are key for encouraging regular use. Integration with existing healthcare services is crucial for a holistic approach, recognized by professionals and healthcare institutions.

1.3 Relevance to Software Solution

The development of a mental health support chatbot is highly relevant as it addresses the critical need for accessible and immediate mental health care. By providing guided self-assessment, evidence-based recommendations, and a gateway to professional help if necessary, a chatbot can significantly enhance the mental health support landscape. The scope of the software solution includes leveraging AI to deliver personalized interactions, incorporating self-help tools and resources, and ensuring scalability to meet the diverse needs of a broad user base. The success of chatbots like iHelpr, Woebot and Wysa in providing mental health support within a workplace setting underscores the potential of such digital interventions in broader contexts.

2. Market Analysis

2.1 Target Audience Identification

Primary Audience: Individuals aged 18-50, who are tech-savvy and actively seek mental health support or wish to improve their mental well-being. This includes people with mild to moderate mental health issues, those under stress, or individuals looking for preventative mental health strategies [1].

Characteristics: This audience is characterized by a recognition of the importance of mental health, openness to using digital tools for health and wellness, and a preference for privacy and immediacy in accessing support services.

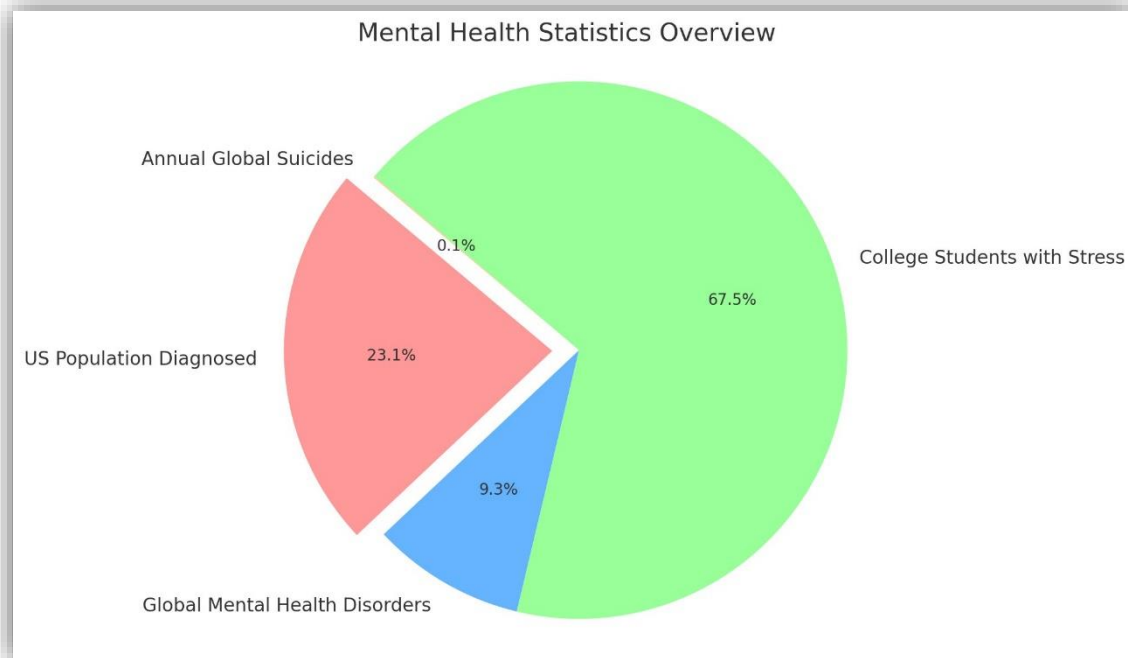


Figure 1 Mental Health Statistics

This pie chart visualizes a comparison of several mental health statistics to provide a broad overview of the impact and prevalence of mental health issues:

US Population Diagnosed (25%): This large slice of the pie represents the percentage of the U.S. population that has been diagnosed with a mental health disorder, such as PTSD, Bipolar Disorder, Social Anxiety, Schizophrenia, OCD, or Clinical Depression. It's a significant portion, highlighting how widespread mental health issues are within the United States.

Global Mental Health Disorders (10%): This segment shows the global perspective, representing the percentage of the world's population reported to have a mental health disorder. This comparison underscores that mental health issues are not just a national concern but a global one.

College Students with Stress (73%): This segment, while not directly comparable to the others due to its specific demographic focus, illustrates the high percentage of college students who report experiencing

moderate to severe psychological stress. It's indicative of the mental health challenges faced by young adults in academic environments.

Annual Global Suicides (~0.09%): This small slice represents the annual global suicides as a fraction of the global population (~7.9 billion), scaled to fit the chart. The statistic of over 700,000 people dying by suicide each year is a stark reminder of the severe consequences mental health issues can have. The size of this slice, relative to the whole, aims to contextualize this number within the global population, but it's important to note that each percentage point represents many lives lost.

2.2 Competitor Analysis

Identifying Competitors: Key players might include Talkspace, BetterHelp, Woebot, and other mental health apps that offer chat-based support or therapy services [2].

Talkspace offers a user-friendly and secure platform with encrypted communication stored in the cloud. It provides a variety of therapy programs including one-on-one sessions, group sessions, and self-guided programs, tailored to meet individual needs. The platform is noted for its affordability, with plans starting at \$49 a week, and a variety of payment plans to make therapy accessible without financial strain.

BetterHelp is compared with several alternatives, each catering to different needs [3]:

- **ReGain** focuses primarily on couples counseling and relationship issues, offering services at similar pricing to BetterHelp but with a specialized focus on relationship management.
- **Online-Therapy.com** is highlighted for its affordability, making it a suitable option for those new to therapy. It provides a range of services similar to BetterHelp but at a lower cost, with a 20% discount offered for the first month.
- **Pride Counseling** is tailored specifically for the LGBTQIA+ community, offering a safe and comfortable environment with therapists specializing in LGBTQIA+ issues, differentiating it from the broader focus of BetterHelp.
- **7 Cups of Tea** offers free anonymous counseling and mental health support with on-demand, live conversation with trained volunteers, as well as private messaging. This platform is particularly noted for its immediate, anonymous support from trained volunteers and a variety of mental health resources.

Each competitor has its unique selling points, catering to different segments of the mental health market. Talkspace's broad range of services and affordability make it a strong competitor in the digital therapy space. BetterHelp's alternatives, such as ReGain, Online-Therapy.com, Pride Counseling, and 7 Cups of Tea, offer specialized services catering to niche markets like couples therapy, affordable therapy options, LGBTQIA+ community support, and free anonymous counseling, respectively.

These competitors together create a diverse and competitive landscape, offering various options for individuals seeking mental health support, each with its strengths and focus areas.

Statistics of Competitors:

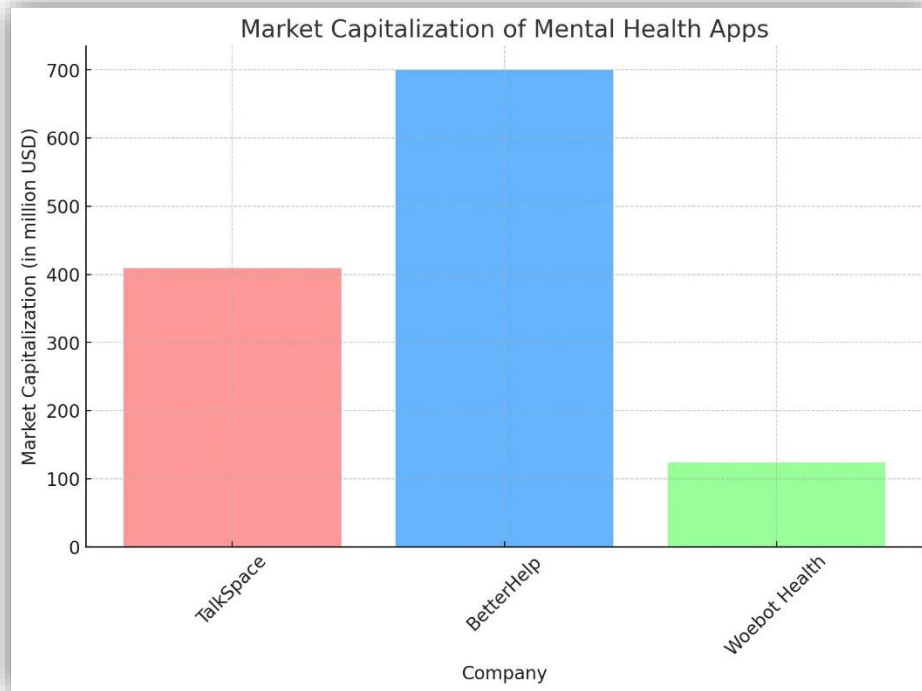


Figure 2 Market Share of Competitors

The bar chart provides a clear comparison of the market capitalization for each of the three mental health apps: **TalkSpace**, **BetterHelp**, and **Woebot Health**. Market capitalization is a measure of a company's total value as determined by the stock market, calculated by multiplying the company's shares outstanding by the current market price of one share. It's an important metric for assessing the size and financial strength of a company within its industry.

BetterHelp: The tallest bar, representing a market capitalization of \$700 million USD, indicates that BetterHelp is the most valuable of the three companies in terms of market capitalization. This suggests that investors and the market at large see BetterHelp as having significant assets, earnings potential, or both.

TalkSpace: The second tallest bar, with a market capitalization of \$409.38 million USD, shows that TalkSpace also holds a substantial market valuation, albeit smaller than BetterHelp. This reflects a strong but not leading position within the market of mental health apps.

Woebot Health: The shortest bar, representing a market capitalization of \$123.5 million USD, indicates that Woebot Health is the smallest among the three in terms of market value. While still significant, this lower market capitalization suggests that Woebot Health might be newer, smaller, or less established in the market compared to BetterHelp and TalkSpace.

The bar chart effectively illustrates the financial scale and market presence of each company, highlighting the differences in their market valuations. Such visual comparisons are useful for investors, analysts, and industry observers to understand the competitive landscape within the digital mental health sector.

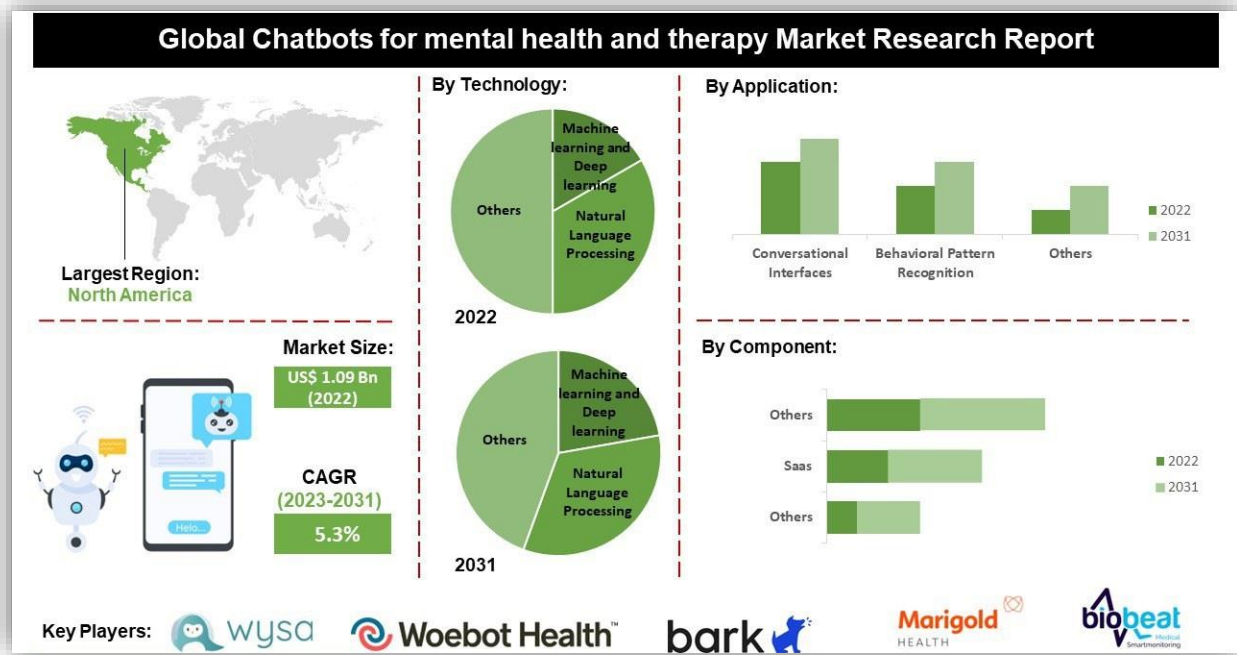


Figure 3 Global Chatbots for Mental Health and Therapy Market Research Report

The infographic titled "Global Chatbots for Mental Health and Therapy Market Research Report" provides a comprehensive overview of the market. It highlights North America as the leading region and details a market size of US\$ 1.09 billion in 2022, with a projected compound annual growth rate (CAGR) of 5.3% from 2023 to 2031[4]. The technology distribution is divided into "Machine learning and Deep learning", "Natural Language Processing", and "Others", with the former being the dominant technology. Applications of these technologies are shown to grow across "Conversational Interfaces", "Behavioral Pattern Recognition", and other categories, as are the components, which include "SaaS" and "Others". The infographic also showcases the key market players: Wysa, Woebot Health™, Bark, Marigold Health, and Biobeat, each represented by their logos. The design employs a green and red color scheme, suggesting growth and vitality, with visual icons for an intuitive understanding of the market dynamics [5].

2.3 SWOT Analysis:

Strengths:

Advanced Technology Use: The reliance on machine learning and deep learning indicates a strong capability to offer personalized experiences and adapt to users' needs [6].

Market Size and Growth: A significant market size with a steady growth projection (5.3% CAGR) indicates a robust and expanding industry.

Expertise in NLP: Expertise in Natural Language Processing allows for more human-like interactions, enhancing user engagement.

Key Players: Established key players such as **Wysa and Woebot Health** suggest a market with proven solutions and experienced operators.

Regional Dominance: North America's position as the largest region may provide a strong customer base and a hub for innovation.

Weaknesses:

Market Concentration: A focus on North America could mean underrepresentation or untapped potential in other regions.

Overreliance on Certain Technologies: Heavy reliance on machine learning and deep learning could limit diversity in technological approaches.

Potential for Market Saturation: A high number of competitors, indicated by the "Others" category, might lead to market saturation.

Opportunities:

Global Expansion: Expanding beyond the North American market could open new opportunities in untapped regions [7].

Technological Integration: Incorporating emerging technologies such as affective computing could enhance the chatbots' emotional intelligence.

Strategic Partnerships: Collaborations with healthcare providers, institutions, and insurance companies could increase market penetration.

Research and Development: Continued investment in R&D can lead to innovative features that address unmet needs in mental health therapy.

Threats:

Regulatory Challenges: Stringent regulations regarding data privacy and healthcare services could impact market growth.

Technological Disruptions: New technologies or platforms could displace current chatbot solutions.

Cultural and Language Barriers: The effectiveness of NLP across diverse languages and cultures is a challenge, and failure to adapt could limit market reach.

2.4 Business Values

Unique Selling Points:

Natural Language Processing (NLP) Capabilities: The chatbots' ability to understand and process human language with NLP suggests a more natural and engaging user experience, which can enhance user retention and satisfaction [8].

Market Leadership: Being the largest region, North America's prominence in the market may reflect a mature ecosystem, with companies likely offering robust, tested solutions with a track record of successful implementations.

Innovation and Growth: The projected CAGR indicates ongoing innovation and refinement of the chatbot technologies, suggesting that companies are continuously working to improve their offerings.

Diverse Applications: The expansion in both conversational interfaces and behavioral pattern recognition shows the chatbots' versatility, making them suitable for a range of mental health and therapy scenarios [9].

Value Proposition for Potential Users:

Accessibility: These chatbots can provide immediate support, breaking down barriers to mental health services due to location, cost, or availability of human therapists.

Privacy and Anonymity: Users may feel more comfortable discussing sensitive issues with a chatbot, which can offer a sense of confidentiality and reduce stigma.

Consistency of Care: Chatbots are available 24/7, providing consistent and uninterrupted support to users, which is crucial for those dealing with mental health issues [10].

Scalability: For healthcare providers, these chatbots represent a scalable solution to support a growing patient base without compromising the quality of care.

Data-Driven Insights: The incorporation of behavioral pattern recognition signifies the chatbots' ability to collect and analyze user data, which can be used to tailor interventions and provide insights to healthcare professionals.

Cost-Effectiveness: With a SaaS component, these chatbots offer a cost-effective solution for users and providers, eliminating the need for extensive upfront investments in infrastructure.

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