Implementation of Chatbots in Mental Healthcare: A Human Factor Perspective

Addressing Global Mental Health Challenges with AI

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About Me

- Master student in University of Twente, majoring in Business Information Technology

- Currently working on researching the influence of lexical alignment in text-based negotiation chatbots about negotiation results and user perceptions for my thesis
Introduction

The significant increase in chatbot implementation

The rising popularity of chatbots in healthcare
Current Role of Healthcare Chatbots

Current healthcare chatbots serve as supplementary tools rather than replacing medical professionals.

**Technique Issues**
- Majority rely on decision trees, limiting user inputs.
- Reliability of responses is a concern.
- Lack depth and clarity in dialogues, causing confusion.

**Practical Issues**
- Integrating chatbots into clinical practice is challenging.
Mental Health Challenges

- 1 in 8 individuals worldwide suffers from mental disorders
- 15% of the Netherlands population admits to psychological issues.

Can chatbot implementation in mental health address this situation?
Stakeholder Analysis

Identification of Stakeholders

National Level
- Governments
  - Develop mental health system

Organizational level
- Insurance companies
  - Therapy costs
- Universities
  - Firsthand data for research purposes.

Individual level
- Patients
  - Physical illness
- Therapists
  - Managing own health
  - Job opportunities
- Patient's family members
  - Burnout
  - Negative emotion
Stakeholder Analysis

Mapping of Stakeholders

- Governments
  - Considerable influence but limited interest
- Therapists
  - Significant influence and limited interest
- Insurance companies
  - Limited influence and interest
- Universities
  - Considerable influence
- Patients and Patient’s family members
  - Considerable interest but limited influence
# Shaping Forces Analysis

## Demanding of Potential Patients (Students)

<table>
<thead>
<tr>
<th>Culture Barrier</th>
<th>Students facing emotional challenges during education abroad.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Barrier</td>
<td>Students facing language challenges during education abroad.</td>
</tr>
<tr>
<td>Shameful Feeling</td>
<td>Hesitate to seek help because of shameful feelings</td>
</tr>
</tbody>
</table>
# Shaping Forces Analysis

## Drawbacks of Current Therapy System

<table>
<thead>
<tr>
<th>Drawback</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduling Barrier</td>
<td>• Difficulty in finding compatible therapists.</td>
</tr>
<tr>
<td>Unaffordable Cost</td>
<td>• High costs</td>
</tr>
<tr>
<td>Shortage of Theropists</td>
<td>• Shortage of qualified therapists and social workers</td>
</tr>
</tbody>
</table>

## Burst of Technologies

- **Machine Learning & Natural Language Process**
  - Rapid advancements in AI and chatbot capabilities.
Challenges and Future Work

• Challenges
  ◦ Data security
  ◦ Patients Trustworthiness

• Future Work
  ◦ Large Language Models (LLMs)
  ◦ Explainable AI.
Thank You For Your Listening