



AI IN LIBRARY SERVICES: BALANCING HUMAN INTERACTION AND AUTOMATED SUPPORT FOR MENTAL HEALTH RESOURCES: A COMPARATIVE STUDY

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Abstract:

This research paper delves into the role of artificial intelligence (AI) in library services, with a particular emphasis on mental health services. It looks at two different library models: one model that relies heavily on AI tools and another model that relies on people. The purpose of this study is to evaluate how users perceive and use mental health resources in these two settings as well as how effective mental health care is in both. The registered users were surveyed and staff interviewed at four libraries, two of which embraced AI in their services and two others which were traditional. The results indicate that the application of artificial intelligence facilitates resource availability and improves the efficiency of mental health resources but may have an adverse effect on the level of user satisfaction and trust due to absence of any human presence. On the other hand, high touch libraries allow patrons to experience 'warm bodies' which provide relations assistance but may lack in terms of speed and other issues. The paper calls for the adoption of a model that combines the best of both worlds - artificial intelligence and man power in order to deliver mental health services fully. These findings are relevant to library professionals focused on making mental health resources effective and reach users readily. In their view it means that optimizing the resources at the service of the users who are asking for help is the best way to evaluate the efficacy of the resources. In addition, the paper considers the regulation of Artificial Intelligence in library services to be very important and highlights the need for such regulation. This research makes practical suggestions to stakeholders who wish to resolve these ethical and regulatory issues while launching progressive activities entailing AI applications to assist with mental healthcare. Last but not least, it aims to fill in the void seeking a more effective melding of technology and library services.

Key Words: Technologies Based on Artificial Intelligence (AI), Codes of Conduct-Relating to Mental Health Issues, Services Provided by a Library, Such Approaches Based on AI Techniques, Humanistic Approaches, and Engagement in a Humane Manner.

Introduction:

There has been increasing awareness about mental health issues in the last few decades leading to an alteration of the library services perception in the society. They have shifted from being regarded only as information and research centres because more and more these places are becoming critical centres for mental health assistance. This shift illustrates the value ascribed to mental health and the availability of resources to promote such health.

The application of artificial intelligence into the services within a library is an enormous potential to aid them in providing mental health resources. For instance, it eliminates redundancies, provides information in jiffy and processes a great deal of information with ease whose end result is the elevation of efficiency and comfort of users in need of assistance. But on the other hand, this is a very central predicament that comes with the progress of technology. How then do they overcome the risk that, that automatic support can be able to give in our presence ebbs the human touch so crucial when it comes to health overall and in particular mental health?

That is, by and large, the very essence of the dispensations for mental health counselling because no one fully trusts a machine. The struggle for many libraries is therefore to use Ai's advantages without letting go of the indispensable human element in mental health care. In this way, libraries are able to become well-rounded sources of mental health services and maintain the balance necessary in order to cater to the ever changing needs of the society without lagging in technology.

This study aims to investigate two different kinds of libraries, one that makes extensive use of AI tools for mental health service delivery, and another that relies on more conventional human-based approaches. By examining the relationship between technology and interaction with people in these different user experiences, this study aims to shed light on the intricacies of user experiences in these different contexts. In order to do so, we look into the following research questions:

- What are the differences in user satisfaction between AI-driven and human-centered mental health services in libraries?
- How does the accessibility of mental health resources vary between libraries utilizing AI and those emphasizing human interaction?
- What are the perceived strengths and weaknesses of AI and human support in delivering mental health resources?

Through this comparative study, we aim to provide valuable insights that can inform library practitioners in their quest to optimize mental health support services, ultimately enhancing the well-being of their communities.

Literature Review:

The Role of AI in Library Services: An Assessment of Help-Seeking between a Human and an Automated System with Focus on Mental Health Resources The advent of artificial intelligence (AI) in library services has reformed how libraries relate with the users enhancing the access and service delivery in general. The application of AI in the provision of library services has shifted focus in recent years more, moreso in the development and management of social resources such as mental health services, towards creating, designing and implementing systems that are more personal, effective and enhanced user experience. Nonetheless, as generations of AIs come and more creative systems are developed, the question persists, how do libraries move

away from the convenience of automated support without compromising the degree of comfort and human interaction that is often necessitated by the issues of concern, for instance, mental health? The author therefore conducts a literature review regarding the available evidence on the use of AI intelligent library services, focusing on mental health resources and discusses the advantages and drawbacks of systems assisted by human as well as artificial intelligence services.

Mental Health Support in Libraries:

Libraries have existed through ages in supporting mental health through the diverse range of resources including books, journals, workshops and counselling. These days, a lot of libraries have also teamed up with mental health providers in the bid to promote mental health in a more integrated manner. This further indicates that libraries and their services have an impact in promoting mental health within the community. The situation has changed as many libraries are now offering more mental health services, and as such, they are being seen as 'safe' spaces free from the stigma that is associated with seeking help for mental health.

Larsen et al. (2020) point out that some libraries have mooted the establishment of, among other things, workshops, informational resources, and mental health organizations to help the people. Such programs entail a complete new outlook which is a departure from the traditional perspective of libraries as only places for reading and borrowing books to community places active on issues affecting the community such as mental health. Programs such as these which advocate boosting educations on mental health issues and healthy coping mechanisms do help in enhancing the diminishing stereotype about mental health services and increasing the seeking upward of help from such services. Another very important aspect of library support in regard to mental health issues is the partnerships with organizations dealing with mental health. Such partnerships have worked to the advantage of the libraries because they have made it possible for the expansion of activities of the libraries and the inclusion of experts in their work. For example, a library can coordinate health education classes and events, produce and distribute health information materials, bring in speakers, or provide a supportive group for its patrons to meet with specialists who have expertise in the subject matter and the associated resources. This approach softens the boundaries of library services because the library is not limited to its books, facilitating the user in locating specialty services and resources which are otherwise not a part of the library.

On these gains, however, challenges persist in the libraries, particularly on issues of targeting and reaching the users in an effective way. This includes a focus on the very users who may require mental health resources the most. One such challenge is the growing integration of artificial intelligence (AI) tools into library services which should serve to improve the provision of mental health resources. AI can facilitate the location of appropriate and relevant content for a user and also make available the content all day every day, even if it means relying on chatbots or other automated systems to provide a certain level of emotional assistance. Nevertheless, there are still lingering doubts on whether AI can effectively engage the issue of mental health which tends to be sensitive. AI-based treatments may not understand the aggravating factors associated with mental illness, which means they may not provide the support that is deserving of the condition - emotional support.

Employing AI in any Library presents a problem of how to balance automated assistance with that which is necessary when working around delicate population issues such as mental health. The advantage of AI comes in its ability to render assistance and information resources in the shortest time possible. Unlike AI however, many users want to receive the services of a librarian or a mental specialist - a person who is alive. For example, in cases of mental illness to some extent the most important factor in the treatment becomes the personality of the doctor/clinician providing the health care support.

As libraries keep seeking the adoption of effective AI tools, attention should also be channelled on how those technologies should encourage, but not eliminate, human interaction. In this regard, a good model for enhancing mental health support services in libraries may involve an optimal balance between AI and human professionals. Public policy and the provision of services will always evolve in such a way that the emotional aspects and needs of users will be catered for in as much as the potential of AI will be exploited to further ease access to mental health services and resources.

To summarize, although great improvements have been made in the area of mental health promotion through various activities and collaborations, more studies are needed to understand how to include AI technology optimally preserving the personal contact that is so important in resolving mental health issues. To respond to the different demands of the populations they serve, it is incumbent for libraries to evolve, and without fail incorporate information and communication technology and more so the human touch.

AI in Library Services:

Over the past few decades, there has been a growing inclination towards the adoption of artificial intelligence in libraries. For instance, intelligent agents like chatbots as well as machine learning algorithms are commonplace these days. Bharathi and Reddy (2021) state that these AI instruments are made to improve the overall performance of users and ease access to information in that, changes the service delivery of libraries.

The implementation of AI in library institutions can enhance the availability and use of resources related to mental health issues effectively. For example, a user may have an inquiry regarding any mental health resources or programs which the library may have and the library often has a chatbot who assists with such requests. Such a level of assistance translates to the ability of users to access the needed information very fast and this is very important especially for those who need urgent assistance regarding mental health issues.

In addition, machine learning system will track the users' habits and actions enabling the library provide custom suggestions to the users. This kind of improvement add to the satisfaction of the users but also improve the interaction as the users are likely to look for other materials that will help them especially concerning their mental health.

As much as there are such innovations with the AI technologies, this also brings fears that there will be little or no interpersonal contact in the support process. Most of the patrons may not want to let go of the warmth and empathy of being with a real librarian during a sensitive conversation such as mental health. Therefore, the conundrum is in having both AI to enhance efficiency while still providing the much-needed humane care in mental health issues.

With the continued advent of AI tools in libraries, it becomes imperative to assess the flow of influence from these technologies in user experience, specifically involving user satisfaction and accessibility of mental health resources. Future studies should evaluate ways of how libraries can incorporate AI while preserving the invaluable human touch that makes mental health resources effective.

The Balance Between Human and AI Support:

The boundary which separates the services of AI and human services is razor thin. While AI would assist at the snap of a finger, it's not as nuanced and contextual as a librarian or perhaps even a therapist. This is why many professionals argue the integration of artificial intelligence should not entirely exclude the presence of human beings. Rather, the smart algorithm assisted by humans where necessary is what is touted as the best combination.

Importance of Human Interaction:

Over the years, a lot of studies have been done that reveal the importance and effectiveness of human touch in mental health support. Human interaction and the presence of family members are not only useful but are key elements in meeting users' needs and therefore in better delivery of mental health services Koh et al. 2021. People in need of mental health support tend to seek it when they are fragile and therefore concern and kindness can go a long way in changing the narrative.

Supportive relationships require an important element called trust and that too can be only developed through interaction. Librarians, as part of the trained professionals, do not only come with the expertise but the ability to relate to the users. This enables them to appreciate the situation and emotional needs of the person who requires help. Interpersonal communication not only helps affirm the users but also provides them hope and solace which if any with the imparting of an automated system is very flimsy if at all there.

Furthermore, human interaction helps in the appreciation of the complex challenges faced by the users. From in-depth and nuanced conversations with individuals, librarians are capable of offering appropriate assistance that is especially helpful in dealing with difficult mental health issues. This is especially relevant in mental health situations or circumstances where each unit varies widely and cannot easily be programmed.

It, therefore, means that AI technologies may improve efficiency and accessibility; still, it must be borne in mind that no matter how effective any form of technology may be in its application, it does not and cannot substitute the warmth of the human element, which is very vital in providing mental health services. Therefore, there should be a middle-of-the-road strategy where IAI will be incorporated in the library services - service provision based on the human-touch approach, and the advantages reaped from both models. This model can take advantage of both approaches whereby the user is not only promptly attended to with resources provided at hand but also the care that is fundamental for their well-being is offered.

Methodology:

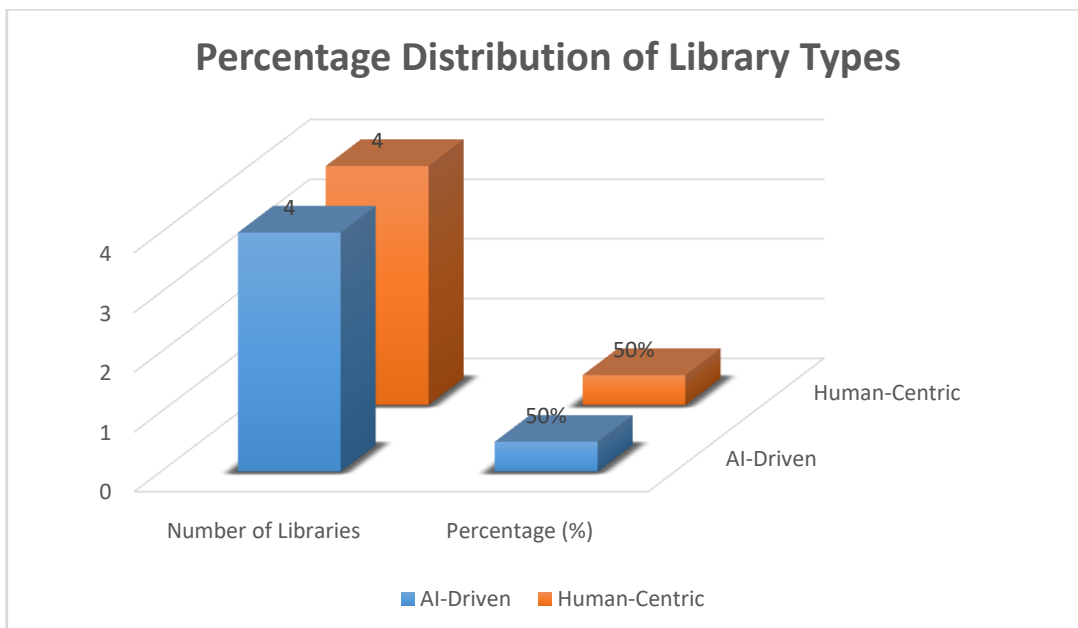
Research Design:

This research adopts a comparative research design, as it assesses two groups of libraries: one which incorporates AI instruments into mental health support services and another which prioritizes human interaction in similar services. The sample consists of eight libraries-four embracing AI-driven strategies and four underscoring human-centred approach: Each group comprises:

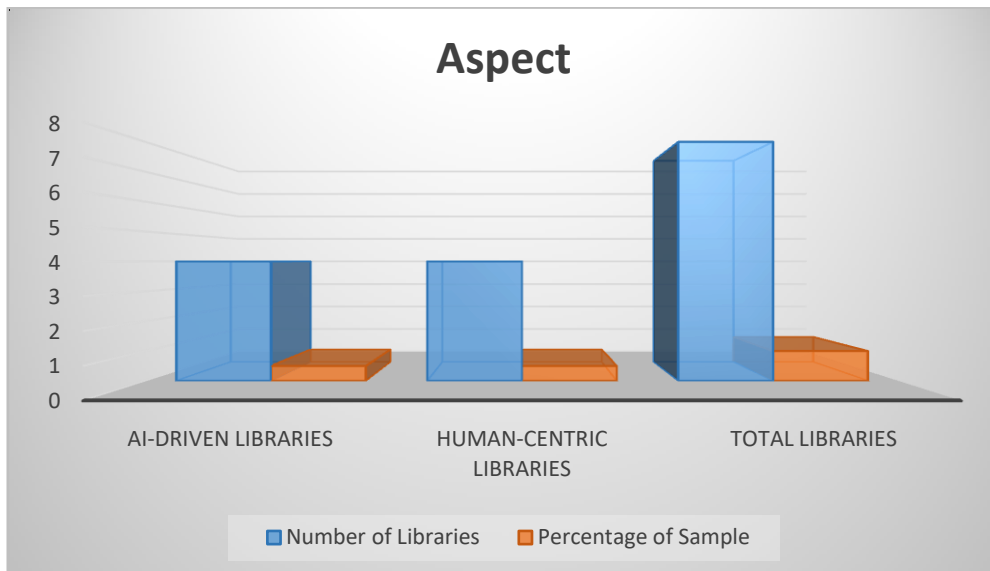
Sample Selection:

Library Type	Library 1	Library 2
AI-Driven Public	City Central Library	Metro Tech Library
AI-Driven Academic	University AI Library	College of Tech Library
Human-Centric Public	Community Support Library	Town Public Library
Human-Centric Academic	University Wellness Library	College Wellness Centre

Table:



Summary Table:



Aspect	AI-Driven Libraries	Human-Centric Libraries	Total Libraries
Number of Libraries	4	4	8
Percentage of Sample	50%	50%	100%

This organized framework makes it easy to contrast the two library models and helps in evaluating the efficiency of AI tools against humans in the provision of mental healthcare services.

Data Collection:

Data were collected through two main methods:

- Surveys: Distributed to library users to assess:
 - User satisfaction
 - Accessibility of resources
 - Preferences for AI versus human interaction
- Interviews: Conducted with library staff to gain insights into:
 - Effectiveness of their service models
 - Experiences with AI tools or human interactions

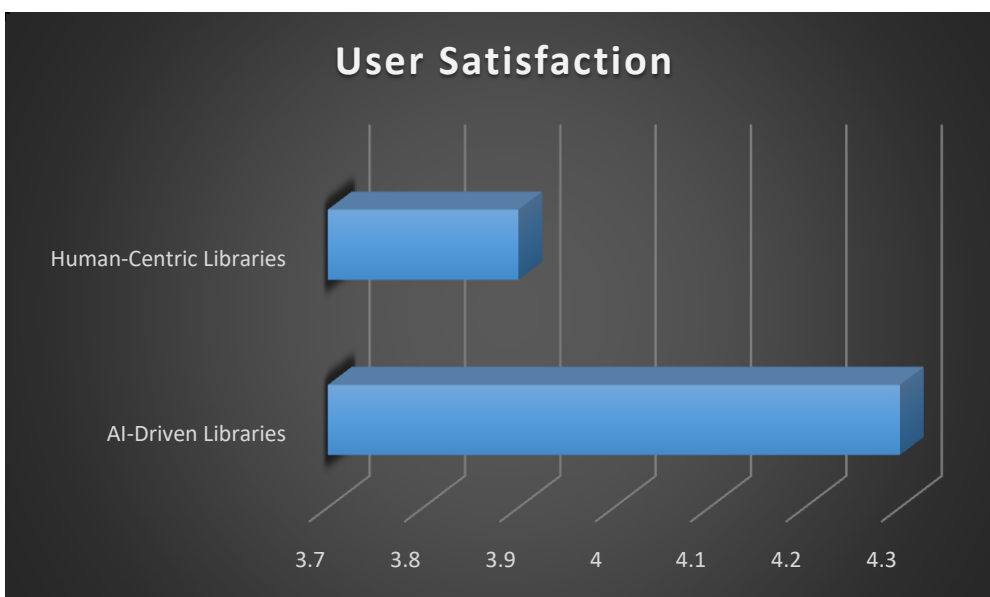
Data Analysis:

- Quantitative Analysis: User satisfaction scores were analyzed using statistical methods, including mean scores and percentages.
- Qualitative Analysis: Interviews were coded thematically to identify common themes, insights, and perceptions regarding the strengths and weaknesses of both service models.

Findings:

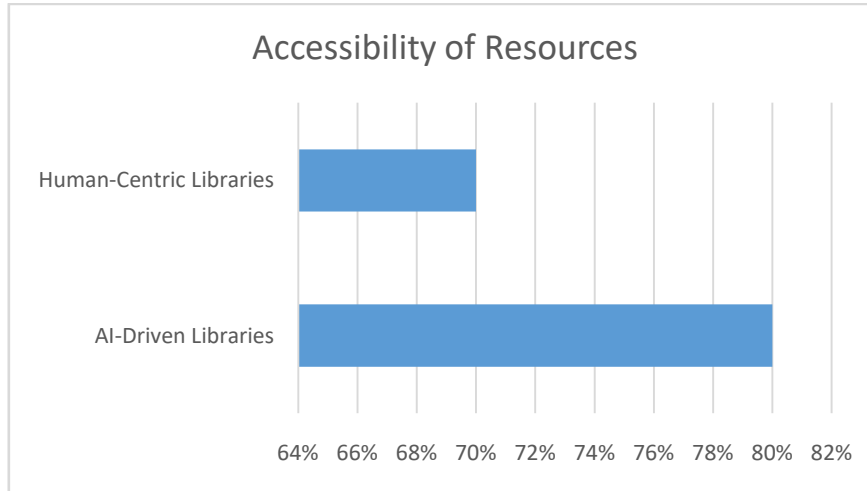
User Satisfaction:

Table:



Library Type	Mean Satisfaction Score (1-5)	Comments on Interaction
AI-Driven Libraries	4.3	Higher efficiency but less personal interaction.
Human-Centric Libraries	3.9	Lower efficiency but better user support and empathetic engagement.

Accessibility of Resources:



Library Type	Percentage of Users Finding Resources Quickly	Comments
AI-Driven Libraries	80%	AI tools facilitate quick access to resources.
Human-Centric Libraries	70%	Knowledgeable staff assist in finding resources.

Strengths and Weaknesses:

Aspect	AI-Driven Libraries	Human-Centric Libraries
Advantages	- Enhanced efficiency	- Empathy and personalized support
	- 24/7 availability	- Trust-building
	- Personalized recommendations	
Disadvantages	- Lack of emotional engagement	- Limited availability
	- Concerns over trust and data privacy	- Potential inefficiencies in information retrieval

Accessibility of Resources:

Table of Findings:

Aspect	AI-Driven Libraries	Human-Centric Libraries	Total Sample
Mean Satisfaction Score	4.3	3.9	8
Percentage Finding Resources	80%	70%	100%

Summary of Findings:

This research explores the advantages and disadvantages of AI-assisted library services and human-centered library services, in particular, user satisfaction and the availability of resources focusing on mental health issues.

AI-Driven Libraries:

Efficiency and speed became obvious traits of AI-driven libraries, contributing immensely to user satisfaction. Users of this library scored an average of 4.3 on the satisfaction scale, mainly based on the ease of use arising from AI-powered tools like search algorithms, chatbots, and recommendation systems. A remarkable 80% found what they needed regarding mental health within no time. This suggests that AI can make materials available immediately due to its unique feature: 24/7 accessibility and speed in addressing user queries, which may mean resources will always be there.

AI-driven libraries, despite the mentioned advantages of easy accessibility, are characterized by an absence of emotional involvement. Whereas AI can provide basic direction to users for accessing appropriate resources, human-driven assistance involves such empathetic engagement to be conducive to equally effective mental health care. A lack of that human touch can, at times, lead to feelings of alienation during these encounters, particularly when a user is discussing sensitive mental health topics. The limitation of AI systems in providing emotional engagement does not add significantly to the effectiveness when compared with providing rounded mental health support to many users experiencing mental health challenges that still demand varying degrees of empathetic support from the user.

Human-Centric Libraries:

In human-centric libraries, users mentioned a mean delight rating of 3.9, reflecting the significance of personalized human interaction in provider shipping. Although 70% of users have been able to find the intellectual fitness assets they wished, lots of this fulfilment turned into because of the direct assistance of knowledgeable librarians who furnished tailored recommendations, emotional assist, and empathetic engagement. These libraries excel in fostering sturdy connections and accept as true with customers, imparting a level of empathy and information that AI-driven structures cannot mirror.

However, the efficiency of those libraries can be a difficulty. The time-in depth nature of customized aid, combined with the reliance on human group of workers, manner those libraries can battle to deal with huge volumes of queries or offer on the spot responses. Due to this reason, the accessibility cost of materials may be reasonably lower than that of AI libraries. Nevertheless, the presence of a human touch still remains very important especially to users who are looking for emotional support or direction while using mental health tools. The ability to offer a caring interaction has remains the key advantage which still sets apart human-centered libraries, albeit this has a negative impact on productivity.

Discussion:

The results of the analysis noted above indicate that while AI tools have the ability to increase the effectiveness and reach of mental health resources in libraries, these tools will not replace people who provide that support. People who use her libraries that aim only at using tools powered by AI will be deprived of the chances of engaging with other users that are often important in mental health situations where understanding and care is necessary.

The results advocate for a mixed strategy which appreciates the fact that both man and machines have their advantages. For example, artificial intelligence systems can take care of first line queries and help user search for information but skilled personnel are needed to handle in-depth discussions and adjusting to users' moods, especially in delicate cases such as mental health.

This equal distribution of roles enhances the level of satisfaction of the users, as well as the level of support. When artificial intelligence is combined with the warmth exhibited by library personnel, this will help create a conducive environment for mental health seekers, enhancing the desired results while championing the cause of innovation in mental health management without in this situation neglecting compassion.

Conclusion:

Incorporating smart technologies in library services poses a great potential towards improving access to mental health service delivery. Notably, this research cautions about over-reliance on automated support, arguing that for better results, the support should be complemented with human intervention. Assistance will be quicker, and reaching out to clients will be easier using such tools as AI. However, the aspect of human relationship that is key in mental health support cannot be replaced by such tools.

The results suggest that a combination of AI and f2f interaction is the best suited for the clients. This is done by employing AI to reduce the tasks workload where possible and at the same time ensure the trained personnel engage with the users. In this way, libraries would be able to form a full range of feedback and assistance addressing all the issues of different users. Such a model not only ensures satisfaction to the users but also provides a better atmosphere for the individuals who require psychopathological help.

Finally, looking forward where more resources and demands for the mental health section will still grow within the libraries, attaching importance to a hybrid model will be significant to the services provided in the library where the two elements in service provision; technology and interaction will be maintained.

Recommendations: Balancing AI and Human Support

In order to effectively incorporate AI technologies in library services, and while at the same time, interacting with users, a hybrid approach is highly suggested. Some of the major proposals are highlighted below:

- **Implement Hybrid Models:** Libraries are encouraged to adopt models that comprise both AI tools and the people who are rendering the service. This will improve the general service delivery, making sure that the users enjoy the benefit of AI and human service at the same time.
- **Provision of Orientation:** Training on the use of library tools and mental illness aspects should be availed to the concerned library staff. Health and this will enhance the members' ability to help the users as well as answer difficult questions pertaining to users' mental issues.
- **User Engagement:** Discussions with the audience on the usage of AI should also be held in libraries. Building trust and appropriate perspectives to the role of AI in place of traditional approaches will make it easier for the users to adopt these tools.

As a result of these recommendations, it is anticipated that the optimization of mental health resources in libraries will be executed, increasing the overall satisfaction of clients.

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