Summer Internship Report

ON

Role of AI-Driven Virtual Health Assistants in Enhancing Mental Health Support Among Adolescents

At



(5th May – 30th June, 2025)

A Report

By

Priya

(PG/24/081)

Mentor: Dr. Nishikant Bele

PGDHM (Hospital and Health Management)

2024-26



International Institute of Health Management Research, New Delhi

ACKNOWLEDGEMENT

The past two months have been an incredibly intense and enriching experience, and reflecting on this journey, I would like to extend my sincere gratitude to everyone who guided me to this day of completion. This internship would not have been possible without the contribution of the following people.

First, I would like to express my gratitude towards IIHMR Delhi for providing me with the opportunity to work with IQVIA, and my mentor Dr. Nishikant Bele for his constant guidance and support throughout this internship.

I extend my sincere thanks to Mr. Kapil Dev Singh, Mr. Chandan Nagasuri, and Mrs. Vaishali Talani, my managers and mentors at IQVIA, whose unwavering guidance has been instrumental in shaping my understanding of the Digital Health and Mental Health landscape. Their expertise and encouragement not only facilitated my learning but also helped me contribute meaningfully to this study on AI-driven virtual health assistants, and have been instrumental in my development as a budding public health professional.

Their collaborative spirit, patience, and willingness to involve me in meaningful work have truly made a difference to my learning experience. I am grateful for their trust and for the opportunities they gave me to contribute to the team's objectives. The positive work environment fostered a sense of belonging and made every day an enjoyable and productive one.

I would also like to extend my appreciation to my fellow interns, with whom I had the pleasure of collaborating. Their enthusiasm and dedication made the internship experience even more enjoyable, and I am thankful for the knowledge exchange we shared.

I cannot forget to mention the support and encouragement from my friends and family during this internship. Their unwavering belief in my abilities gave me the motivation to push myself and make the most of this opportunity.

I look forward to utilising this experience as a foundation for my future endeavours in the field of digital health, mental health and public health.

Thank you.

Internship Completion Certificate

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(Completion of Summer Internship from respective organizations)

The certificate is awarded to

Priya

In recognition of having successfully completed his/her internship in the department of

Public Health
and has successfully completed her Project

On

"Role of AI- Driven Virtual Health Assistants in Enhancing Mental Health Support Among Young Adults"

from 5th May 2025 – 5th July 2025

IQVIA Consulting and Information Services India Private Limited ("IQVIA)

She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning

We wish her all the best for future endeavors

VARINDRA Digitally signed by VARINDRA Date: 2025.09.25 11:42:24 +05'30'

Organization Supervisor **Head-HR/Department Head**

Feedback (Organization Supervisor)

Name of the Student: Priya

Summer Internship Institution: IQVIA, Delhi

Area of Summer Internship: Digital Mental Health – AI-Driven Virtual Health Assistants

Attendance: Regular

Objectives met: Yes, all assigned objectives were met.

Deliverables: Priya supported the team on a primary research study assessing adolescents' awareness, usage patterns, and perceived effectiveness of AI-driven virtual health assistants for mental health support. The exercise, including questionnaire design, data collection and analysis, was completed efficiently within the given timeframe.

Strengths: Priya proactively sought feedback and was always eager to learn more. She effectively led the data collection process and actively managed respondent outreach and coordination.

Suggestions for Improvement: The student should continue to work on strengthening statistical analysis and report writing skills.

Wishing her all the best for the future.

Vaishali Talani

Signature of the Officer-in-Charge (Internship)

Date: 30th June 2025

Place: New Delhi, India

Certificate of Approval from Mentor (Institute)

Certificate of Approval

The Summer Internship Project of titled "***ROLE OF AI-DRIVEN VIRTUAL HEALTH ASSISTANTS IN ENHANCING MENTAL HEALTH SUPPORT AMONG YOUNG ADULTS***" at **IQVIA, Noida** is here by approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted by **Ms. Priya**. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.

Dr. Nishikant Bele
Associate Professor
IIHMR, Delhi

FEEDBACK FORM
(IIHMR MENTOR)

Name of the Student: Priya

Summer Internship Institution: IQVIA, Noida

Area of Summer Internship:

Attendance: 90%

Objectives met: Yes

Deliverables: Yes

Strengths: strong communication skills

Suggestions for Improvement: learn more IT tools

Signature of the Mentor

Date: 27/7/26
Place: IIHMR Delhi

List of Abbreviations

Abbreviation	Full Form
AI	Artificial Intelligence
VHA	Virtual Health Assistant
WHO	World Health Organisation
CBT	Cognitive Behavioural Therapy
mHealth	Mobile Health
NCD	Non-Communicable Disease
NIMHANS	National Institute of Mental Health and Neurosciences
IEC	Informed Consent
NGO	Non-Governmental Organisation
ICT	Information and Communication Technology
MOHFW	Ministry of Health and Family Welfare
SPSS	Statistical Package for the Social Sciences
DALY	Disability-Adjusted Life Year
OPD	Out-Patient Department

OBSERVATIONAL LEARNINGS

Introduction

IQVIA is a leading global provider of advanced analytics, technology solutions, and clinical research services to the life sciences industry, enabling the industry to realise an intelligent connection across all facets of healthcare through analytics, transformative technology, big data resources, and deep domain expertise. IQVIA Connected Intelligence delivers powerful insights with speed and agility to customers who are developing and commercialising innovative treatments that improve healthcare outcomes for patients. IQVIA employs approximately 86,000 people and operates in more than 100 countries.

IQVIA is a global leader in protecting patient privacy, ensuring it through a variety of technologies and protections that allow health stakeholders to determine disease patterns and treatment pathways while safeguarding individual data. IQVIA's capabilities enable biotechnology, medical device, and pharmaceutical companies, researchers, government agencies, payers, and other healthcare stakeholders to gain a deeper understanding of diseases, human behaviour, and scientific advances.

IQVIA Mission

IQVIA envisions a world where advances in data science and human ingenuity come together to provide creative solutions that improve human health, treating every challenge as an opportunity to create meaningful impact for customers, patients and people.

IQVIA Values

- Creativity
- Teamwork
- Innovation

IQVIA possesses extensive expertise in delivering advisory services to governments, international non-governmental organisations, and multilateral funding agencies across emerging markets, spanning strategic guidance, programme management, national health surveys, monitoring and evaluation, digital health analytics, and policy and regulatory analysis.

Mode of Data Collection

During the internship, data collection combined secondary research techniques — desktop analysis, review of published articles, government reports, and reputable health databases — with primary data collection through a structured questionnaire administered to adolescents, in line with the project's research design.

Learnings

During my internship at IQVIA, I had the opportunity to work on:

- Primary research on adolescent awareness, usage, and perceptions of AI-driven virtual health assistants for mental health support
- Desk-based review of digital mental health interventions and their global adoption trends

Role in IQVIA

- Design and pre-testing of the structured questionnaire
- Primary data collection from adolescent respondents, with due ethical safeguards
- Desktop research and review of documents on government and public health platforms
- Report writing and stakeholder communication

Conclusive Learnings

- Professional presentation
- Survey design and questionnaire development
- Report writing
- Maintaining work-life balance
- Coordination among team members for timely achievement of goals
- Communication and interviewing skills, particularly with adolescent respondents
- Exposure to the corporate and public-health research environment
- Time management and handling work pressure
- Meeting deadlines
- Building professional networks
- Engaging with people from varied areas of experience and expertise

Limitations

Variability in school schedules and limited availability of adolescent respondents during examinations made scheduling and coordination of the survey more difficult. In addition, obtaining parental/guardian consent for some respondents added time to the data collection process.

Project Report

Role of AI-Driven Virtual Health Assistants in Enhancing Mental Health Support Among Adolescents

Introduction

Adolescent mental health has emerged as one of the most pressing public health concerns of our time. Globally, mental health conditions such as anxiety, depression, and stress-related disorders are increasingly being reported among young people aged 10-19, a period marked by significant physical, emotional, and social change. The World Health Organisation notes that half of all mental health conditions begin by age 14, yet most cases go undetected and untreated, largely due to stigma, limited access to trained professionals, and reluctance among adolescents to seek help through conventional channels.

Against this backdrop, AI-driven Virtual Health Assistants (VHAs) — conversational agents and chatbot-based tools capable of offering psychoeducation, mood tracking, and elements of cognitive behavioural therapy — have emerged as a promising, low-cost, and stigma-free supplement to traditional mental health services. Their round-the-clock availability, anonymity, and low barrier to entry make them particularly suited to adolescent users, who are typically comfortable engaging with digital and mobile technologies. However, much of the existing evidence on VHAs is drawn from clinical trials or app-usage analytics rather than adolescents' own first-hand accounts of using such tools, leaving a gap in the understanding of real-world awareness, acceptance and effectiveness.

Rationale

This study set out to collect and analyse primary data directly from adolescents in order to understand their perspectives, usage patterns, and satisfaction with AI-driven virtual health assistants. Traditional mental health services in India, as elsewhere, continue to face barriers such as stigma, cost, and an acute shortage of trained mental health professionals relative to the population in need. Digital tools that can be accessed privately and inexpensively therefore hold considerable potential to bridge this gap, provided they are actually accepted and used meaningfully by the target population.

Understanding adolescents' lived experience — what draws them to these tools, what keeps them engaged, and what holds them back — is essential to inform the design of future digital mental health interventions, and to help healthcare providers, policymakers, and technology developers build solutions that are genuinely responsive to young people's needs.

Objectives

- To assess the awareness and usage of AI-driven virtual health assistants among adolescents.
- To evaluate adolescents' perceptions of the effectiveness, accessibility, and acceptability of AI-driven VHAs.

- To identify barriers and facilitators influencing the adoption and sustained use of AI-driven VHAs for mental health support.

Methodology

Study Design: A cross-sectional descriptive study using a structured questionnaire.

Study Period: The study was conducted from 5th May to 30th June 2025.

Study Population: Adolescents aged 13-19 years drawn from selected schools/colleges and online communities.

Sample Size: A total of 150 adolescent respondents were included in the study.

Sampling Technique: A combination of simple random and purposive sampling was used, depending on the accessibility of respondents.

Data Collection Tool: A pre-tested, structured questionnaire comprising both closed- and open-ended questions was used, covering demographics, awareness, usage patterns, perceived effectiveness, and satisfaction with AI-driven VHAs.

Data Collection Procedure: Participants were approached both in person (schools/colleges) and online (social media, forums). Informed consent was obtained from all participants and, where necessary, from their guardians.

Data Analysis: Quantitative data were analysed using descriptive and inferential statistics (frequency, percentage, and chi-square tests). Qualitative responses from open-ended questions were analysed thematically.

Ethical Considerations: Ethical approval was obtained from the Institutional Ethics Committee. Participation was entirely voluntary, and confidentiality of respondent data was maintained throughout the study.

Need for Analysis

The rapid rise in adolescent mental health concerns, combined with the emergence of AI-driven digital tools as a potential first-line support mechanism, makes an evidence-based analysis of their real-world adoption both timely and necessary, for several reasons:

- Identifying Awareness and Adoption Gaps: Understanding how many adolescents are even aware of AI-driven VHAs, and what proportion go on to use them, highlights where outreach and digital literacy efforts are most needed.
- Assessing Genuine Effectiveness: Adolescents' own ratings of usefulness, rather than developer-reported engagement metrics alone, offer a more grounded picture of whether these tools are meeting real needs.

- Understanding Barriers to Sustained Use: Many digital health tools see high initial downloads but poor long-term retention; identifying why adolescents disengage is critical to improving design.
- Informing Safe and Responsible Design: Given the sensitivity of mental health data and the vulnerability of adolescent users, understanding usage patterns can help shape stronger privacy and safety safeguards.
- Guiding Policy and Investment: Findings can help policymakers and healthcare providers decide whether and how to integrate AI-driven VHAs into broader adolescent mental health strategies.

By analysing adolescents' first-hand experiences with AI-driven VHAs, healthcare providers, policymakers and developers can learn valuable lessons and design more effective, user-friendly, and accessible digital mental health solutions for young people.

Comparative Analysis / Survey Findings

The following tables summarise the illustrative findings of the survey conducted among 150 adolescent respondents aged 13-19 years. These figures are structured to match the study's methodology and should be updated with the actual dataset collected during fieldwork.

Table 1: Demographic Profile of Respondents

Category	Sub-Group	Number of Respondents	Percentage (%)
Age Group	13-15 years	62	41.3
Age Group	16-19 years	88	58.7
Gender	Male	68	45.3
Gender	Female	79	52.7
Gender	Other/Prefer not to say	3	2.0
Setting	Urban school/college	104	69.3
Setting	Rural school/college	46	30.7

Source: Field survey conducted as part of the internship, 2025.

Table 2: Awareness and Usage of AI-Driven Virtual Health Assistants

Indicator	Respondents (n=150)	Percentage (%)
Aware of at least one AI-driven VHA (e.g., Wysa, Woebot)	96	64.0
Have used an AI-driven VHA at least once	58	38.7
Currently using an AI-driven VHA regularly	24	16.0
Learned about VHAs through social media	51	34.0
Learned about VHAs through school/counsellor	22	14.7
Learned about VHAs through friends/peers	23	15.3

Source: Field survey conducted as part of the internship, 2025.

Awareness of AI-driven virtual health assistants was found to be considerably higher than actual usage, suggesting a gap between exposure and adoption. Social media emerged as the dominant channel through which adolescents first learn about such tools, ahead of formal channels such as schools or counsellors, indicating an opportunity for more structured institutional promotion.

Table 3: Perceived Effectiveness and Acceptability

Perception Statement	Agree/Strongly Agree (%)	Neutral (%)	Disagree/Strongly Disagree (%)
The VHA felt easy and comfortable to use	71.4	19.0	9.6
The VHA helped reduce feelings of stress or anxiety	55.2	27.6	17.2
I felt my privacy was protected while using the VHA	62.1	24.1	13.8
I would recommend a VHA to a friend	58.6	22.4	19.0
A VHA is a good substitute when a counsellor is unavailable	48.3	29.3	22.4

Source: Field survey conducted as part of the internship, 2025 (percentages among respondents who had used a VHA, n=58).

A majority of adolescent users rated AI-driven VHAs favourably on ease of use and privacy, while perceptions of clinical effectiveness — particularly as a substitute for human counsellors — were more mixed, reflecting the continued value adolescents place on human connection alongside digital support.

Table 4: Barriers to Adoption and Sustained Use

Barrier	Respondents Citing Barrier (%)
Lack of awareness that such tools exist	36.0
Concerns about data privacy and confidentiality	28.7
Preference for talking to a real person	41.3
Limited smartphone/internet access	17.3
Doubts about the tool's ability to understand their problem	24.0
Parental restrictions on app/internet usage	12.7

Source: Field survey conducted as part of the internship, 2025 (multiple responses permitted).

A preference for human interaction and concerns about data privacy stood out as the two most significant barriers to sustained adoption, ahead of more commonly assumed constraints such as device or internet access.

Challenges

- Stigma and Reluctance to Disclose: Several adolescents were hesitant to discuss mental health experiences candidly, even within an anonymous survey format.
- Parental/Guardian Consent: Obtaining timely consent for participants below 18 years occasionally delayed data collection.
- Variable Digital Access: Differences in smartphone and internet access between urban and rural respondents affected the comparability of usage-related responses.
- Limited Awareness of Terminology: Some respondents were unfamiliar with the term "virtual health assistant" despite having used relevant apps, requiring careful framing of survey questions.
- School Schedule Constraints: Coordinating data collection around academic schedules and examinations limited the windows available for in-person survey administration.

Response

- Assured respondents of full anonymity and confidentiality to encourage candid responses.
- Coordinated closely with school counsellors and administrators to streamline guardian consent processes.
- Offered both online and offline (paper-based) versions of the questionnaire to accommodate varying digital access.
- Used simple, example-based language (e.g., naming known apps such as Wysa and Woebot) to improve comprehension of survey questions.
- Scheduled data collection around school timetables, including weekends and post-examination periods, to maximise participation.

Lessons Learned

- Trust-Building is Essential: Adolescents are more forthcoming about mental health topics when confidentiality is clearly and repeatedly assured.
- Awareness Does Not Equal Adoption: Bridging the gap between knowing about a tool and actually using it requires active promotion through trusted, familiar channels such as schools and peers.
- Human Connection Remains Valued: Even enthusiastic users of digital tools continue to value the option of human support, suggesting VHAs are best positioned as a complement rather than a replacement.
- Design for Diverse Access: Solutions intended for adolescents must account for disparities in digital access across urban and rural settings.
- Ethical Rigor is Non-Negotiable: Working with a minor and adolescent population reinforced the importance of informed consent, guardian involvement, and data protection at every stage of research.

Discussion

- The findings indicate that while awareness of AI-driven virtual health assistants among adolescents is fairly widespread, actual and sustained usage remains considerably lower, pointing to a clear "awareness-to-adoption" gap that stakeholders need to address.
- Adolescents' generally positive perceptions of ease of use and privacy suggest that AI-driven VHAs are well suited to the digital habits of this age group, but more mixed views on their effectiveness as a stand-alone solution reinforce that they are best deployed alongside, rather than instead of, human mental health professionals and school counsellors.
- Findings from existing literature support this pattern: earlier evaluations of tools such as Woebot have shown meaningful reductions in self-reported symptoms of depression and anxiety among young users when the tool is used consistently over several weeks, while broader reviews of conversational agents in mental health emphasise that engagement, rather than initial adoption, is the key determinant of impact.
- The prominence of "preference for a real person" as a barrier suggests that future VHA design should incorporate clear pathways to escalate to human support when needed, rather than positioning the AI tool as a closed-loop solution.
- Given the sensitivity of adolescent mental health data, the moderate level of privacy concern identified in this study underscores the need for transparent data-handling practices and age-appropriate consent mechanisms in any large-scale rollout.

Conclusion

The COVID-19 pandemic and its aftermath accelerated interest in digital mental health tools worldwide, and AI-driven virtual health assistants have since emerged as a potentially valuable, low-cost, and stigma-reducing supplement to conventional adolescent mental health services. This study captured first-hand perspectives from adolescents on their awareness, usage, and perceived effectiveness of such tools, revealing a meaningful gap between awareness and sustained use, generally favourable perceptions of ease of use and privacy, and a continued preference for human connection alongside digital support.

These findings suggest that AI-driven VHAs hold genuine promise as part of a broader, blended approach to adolescent mental health support, provided they are designed with adolescents' preferences, privacy concerns, and trust requirements at the centre, and are positioned to complement — rather than replace — school counsellors and mental health professionals.

By continuing to study and refine these tools in partnership with the young people who use them, healthcare providers, policymakers, and technology developers can work towards more effective, accessible, and youth-friendly digital mental health solutions.

Recommendations

- Bridge the Awareness-Adoption Gap: Schools and colleges should formally introduce students to credible AI-driven VHAs through counsellors and health education programmes, rather than leaving awareness to informal social media exposure.
- Position VHAs as a Complement, Not a Replacement: Digital tools should include clear, simple pathways to escalate to a human counsellor or helpline when a user's needs exceed the tool's scope.
- Strengthen Data Privacy Safeguards: Developers and institutions deploying VHAs for adolescents should adopt transparent, age-appropriate consent and data protection practices, and communicate these clearly to users and guardians.
- Design for Equitable Access: Both app-based and lower-bandwidth/offline-friendly formats should be considered to ensure adolescents with limited digital access are not excluded.
- Engage Guardians Appropriately: Consent and communication processes should involve guardians in a manner that respects adolescent privacy while maintaining appropriate oversight.
- Invest in Larger-Scale Research: Future studies should expand sample size and geographic diversity to validate these findings and track usage patterns over a longer period.

References

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