



INTERNATIONAL JOURNAL OF
MODERN EDUCATION
(IJMOE)
www.ijmoe.com



APPLICATION OF ARTIFICIAL INTELLIGENCE IN ADOLESCENT MENTAL HEALTH SUPPORT: A QUALITATIVE STUDY IN CHINESE MIDDLE SCHOOLS

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Article Info:

Article history:

Received date: 30.09.2025

Revised date: 10.10.2025

Accepted date: 16.11.2025

Published date: 02.12.2025

To cite this document:

Liu, X., & Lee, K. C. (2025). Application Of Artificial Intelligence in Adolescent Mental Health Support: A Qualitative Study in Chinese Middle Schools. *International Journal of Modern Education*, 7 (28), 184-200.

DOI: 10.35631/IJMOE.728015

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Abstract:

This study explores the anticipated role of Artificial Intelligence (AI) in supporting adolescent mental health in Chinese secondary schools. Traditional school-based counseling is often hindered by limited resources and stigma. AI tools, including chatbots, emotion recognition, and virtual counseling platforms, may offer scalable alternatives. This study will use a qualitative design, this research plan to collect data from students, teachers, and parents across three provinces through interviews, questionnaires, and observations. It is anticipated that AI tools will enhance early risk detection, emotional expression, and accessibility to psychological support. It is expected that students will value the privacy of chatbots, while teachers and parents may recognize AI's potential in behavioral monitoring and guidance. However, possible concerns around ethics, trust, and cultural acceptance are also predicted. The study aims to explore whether emotional AI will be particularly effective in contexts where human counseling is limited. Recommendations are expected to include strategies for integrating AI into school systems with ethical safeguards and local adaptability.

Keywords:

Artificial Intelligence (AI), Adolescent Mental Health, School-Based Intervention, Emotional AI, AI-Supported Psychological Services

Introduction

Background

Due to increasing academic pressure, strained family relationships, rapid social and cultural changes, and the impact of the digital environment, adolescent mental health issues have become an important public health issue that China needs to address. In recent years, a large number of studies have shown that the incidence and prevalence of psychological problems such as anxiety, depression, and behavioral disorders among Chinese adolescents are on the rise. The high-pressure education system, coupled with parental expectations and limited channels for emotional expression, exacerbate these problems. According to the World Health Organization (WHO, 2021), approximately 14% of adolescents (aged 10-19) worldwide suffer from some form of mental disorder, a proportion that reflects the huge psychological risks faced by the adolescent population. However, due to the lack of social cognition, the scarcity of mental health resources, and cultural stigma, adolescent mental problems have not received sufficient attention and systematic treatment in most developing countries (Kieling et al., 2011). Although both government and non-governmental organizations have begun to work to improve students' well-being, schools still lack the capacity to provide adequate mental health services.

Problem Statement

Despite the increasing psychological awareness among the people and the growing national attention to mental health, China's mental health service system is still in its early stages and faces many challenges in terms of structural construction and actual implementation.

Many Chinese middle schools still lack professional psychological counselors, especially in rural or resource-poor areas. The structural imbalance between supply and demand of mental health services has not been alleviated. On the one hand, the total amount of professional resources for psychological services is insufficient, especially the extremely uneven distribution between urban and rural areas and between regions; on the other hand, the incidence of mental illness continues to rise, the demand for services is growing, but the channels for obtaining high-quality services are very limited. There are also defects at the institutional level: the service system has not yet formed a unified standard, and the access standards are unclear, resulting in uneven service quality, which seriously affects the credibility and effectiveness of the service (Zhao, 2023)

Students are often hesitant because of concerns about privacy and stigma. Even if traditional face-to-face counseling is available, it may not be timely or difficult to promote. Influenced by traditional cultural concepts such as "family disgrace should not be made public", mental health issues are still considered "taboo" in the eyes of many people, and people generally have psychological barriers such as being ashamed to speak up and avoiding medical treatment. Many people would rather choose to conceal their psychological distress than seek professional help, which not only delays the treatment time, but also aggravates the severity of the problem (Psychology Weekly, 2020).

At the same time, government officials generally lack a systematic understanding of social psychological services. Most civil servants do not have a background in psychology or social work, nor have they received professional mental health training. Therefore, they often find it difficult to effectively design or promote mental health service projects at work, and are prone

to negative attitudes and slow actions, which greatly weakens the promotion and effectiveness of psychological services at the grassroots level (Psychology Weekly, 2020).

In addition, from the perspective of the academic community, theoretical research on social psychological services in China is still in the exploratory stage. In recent years, although many relevant academic forums have been held, many domestic and foreign experts and scholars have been invited to participate in discussions, and a large number of research results have been produced, a unified theoretical system has not yet been formed. This dispersion at the theoretical level has hindered the process of transforming academic achievements into practice, resulting in the reality of "more research and less implementation" in the field of psychological services in China (Zhao, 2023).

It can be seen that the above challenges have created a huge service gap, resulting in many adolescents' mental health needs not being met.

The Role of Artificial Intelligence in Mental Health

With the rapid maturation of AI, tools such as conversational agents, affective computing, and predictive analytics are increasingly positioned as scalable complements to school psychological services. Recent systematic reviews and meta-analyses report that AI-supported and chatbot-delivered interventions can reduce access barriers, for example, stigma, availability and wait times. And show positive effects on psychological distress and related outcomes, while also supporting engagement through on-demand, private interactions. (Li et al., 2025; Ni & Jia, 2025; H. Li, Zhang, Lee, Kraut, & Mohr, 2023; He et al., 2023; Whitehead, Robinson, Arabiat, Jenkins, & Morelius, 2023) It can be said that AI-supported interventions have shown good prospects in reducing barriers to accessing mental health tools and enhancing their participation.

Early pilot applications of AI in education and healthcare are slowly emerging in China. However, the ethical, cultural, and contextual applicability of these tools—especially among adolescent users—requires systematic research.

Research Objectives

This research aimed to fulfill the needs of the following objectives :

1. To assess the mental health challenges faced by Chinese adolescents.
2. To explore the role of artificial intelligence tools in supporting youth mental health.
3. To explore the cultural, ethical, and implementation challenges of implementing AI-based mental health support in the Chinese educational context .

Research Questions

The research questions for this study are as follows :

1. How do Chinese middle school students experience and perceive the key mental health challenges they face in their daily school and home environments?
2. How do students, educators, and parents view the potential of AI tools for mental health support?

3. Why do certain cultural, ethical, and logistical factors facilitate or hinder the adoption of AI-based mental health support in Chinese schools, and how do these factors influence implementation strategies?

Research Significance

The results of this study are expected to inform policymakers, educators, and developers about the potential of artificial intelligence to supplement traditional mental health services in schools. It may also help adolescents deepen their understanding of mental health and recognize it as equally important as physical health. Recent international guidance and school-based trials indicate that strengthening mental health literacy within education settings can elevate students' knowledge and attitudes toward mental health (World Health Organization, 2022; Zeidabadi, Khodayarian, Sadeghi, & Jambarsang, 2025; Sun, Wang, & Zhang, 2025). By focusing on cultural sensitivity, ethical safeguards, and stakeholder perspectives, this study may help design more inclusive, acceptable, and effective AI-supported psychological interventions. This study aims to explore the expected contributions and challenges of integrating artificial intelligence technology into the mental health support system for adolescents in Chinese middle schools. Given the lack of empirical research, this study will outline the expected benefits, ethical considerations, and user perceptions based on a literature review and theoretical inferences.

Operational Definitions

- **Mental health:** Health includes physical health, mental health, moral health and social health. True health is the mutual adaptation and coordination of these four aspects (Sun, 2022). According to the World Health Organization's 2022 report, "mental health is a state of mental well-being that enables people to cope with the stresses of life, to realize their abilities, to learn well and work well, and to contribute to their communities" (Reed, 2024). Based on this, mental health in this study is defined identically—as the capacity for resilience, functioning, and societal contribution within the school context.
- **Artificial Intelligence (AI) :** For this study, AI refers to machine-based systems capable of tasks traditionally requiring human intelligence—such as natural language understanding, emotion recognition, or personalized interaction—building upon classical definitions by Russell and Norvig (2021) and Thakkar, Gupta, and De Sousa (2024), integrated with current uses in adaptive educational tools.
- **Adolescent :** The World Health Organization defines "adolescents" as individuals aged 10 to 19 years (World Health Organization: WHO, 2019), and UNICEF aligns with that definition as individuals transitioning between childhood and adulthood (UNICEF, n.d.). In this study, "adolescents" refers specifically to Chinese secondary school students, typically aged 12–18.
- **School mental health support :** WHO and UNICEF (2021) define school mental health support as promotion, prevention, and intervention services delivered within schools to enhance students' psychological well-being. Based on the definitions by WHO and UNICEF (2021), in this research, the researchers will define school mental health support as any psychological service, including prevention, early identification, counseling, and referral, provided in a school setting to support adolescent well-being.
- **AI-based tools :** Grobelnik, Perset, and Russell (2024) define AI systems as a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions

that can influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment. Based on the definitions by Grobelnik, Perset, and Russell (2024), in this research, the researchers will define AI-based tools as technology platforms, including chatbots, emotion recognition, and behavioral analytics, designed to identify, respond to, or manage emotions or psychological conditions in school contexts.

Scope Of The Study

This study is conceptual and prospective in nature, grounded in literature analysis and theoretical inferences rather than empirical investigation. Its primary focus is to explore how artificial intelligence can be responsibly and effectively integrated into Chinese middle schools to support adolescent mental health. Within this scope, the study examines potential applications of AI to supplement traditional mental health services, emphasizing cultural sensitivity, ethical safeguards, and stakeholder perspectives. The research does not present empirical findings but instead proposes a methodological framework informed by existing scholarship and contextual understanding. The outcomes discussed are therefore anticipated results, which will require further empirical validation in future studies.

Literature Review

Impact On Mental Health

After reading and analyzing a lot of literature, the researcher found that one of the biggest impacts of mental health on us is that it affects our physical health. Our body and mind are inseparable, so it is not surprising that mental health problems affect the body. Once physical health is in trouble, the difficulties that follow will be countless. Mental health problems may be accompanied by physical symptoms. For example, depression may be accompanied by headaches, fatigue and digestive problems, and anxiety may cause stomach discomfort. Other symptoms include insomnia, irritability, and difficulty concentrating, etc. (Physical Health and Mental Health, 2022) .

Anwar (2021) also pointed out that cultivating mental health can not only improve our daily lives, but also help us control or at least fight some physical health problems that are directly related to mental health conditions. For example, heart disease and stress are related, so managing stress may have a positive impact on heart disease and promote a healthy lifestyle. Another example is that stomach problems are related to mood, and a bad mood such as anxiety will have a negative impact on the stomach, thereby affecting digestion and other body functions.

Mental health is often more important. With a healthy mentality, we have the confidence to overcome everything, and external defects will be a hindrance to us. Mental health can help us better understand ourselves, accept our own mentality and consciousness; regulate and control our emotions to keep them happy and calm; withstand setbacks; correctly understand the surrounding environment, adapt to the environment and change the environment in time; when getting along with others, we have the spirit of being gregarious, sympathetic, loving and helping others, so as to obtain good interpersonal relationships; have a healthy lifestyle and living habits; have a positive attitude towards life, moral values, values and good behavioral norms. Only with a healthy mentality can we smoothly and easily solve the problems in study and life, so as to better adapt to the new environment. We must constantly maintain and improve our physical and mental health to make life healthy and colorful.

In general, mental health has more or less impact on our body, life, study, interpersonal relationships, etc.

Current Status Of Mental Health Among Chinese Adolescents

The mental health of Chinese teenagers is facing increasing pressure. An article published in the Weekly Report of the Chinese Center for Disease Control and Prevention states that the prevalence of mental health disorders among Chinese children and teenagers is 17.5%, and it is on the rise (Wang, Wang, Zhang, Yang, & Yang, 2023). A lot of middle school students reported experiencing psychological distress symptoms. The factors causing these effects include academic competition, parental expectations, overuse of digital devices, and limited entertainment and emotional support systems.

The Confucian tradition of advocating academic excellence, combined with the one-child family structure, often puts tremendous pressure on adolescents to meet high expectations. Family factors, including emotionally absent or overinvolved parents, can exacerbate stress. In addition, the stigma of mental health in Chinese society also prevents many adolescents from seeking professional help. Peer support is often insufficient, and social media can both alleviate and exacerbate psychological distress.

Despite growing awareness, systemic limitations hinder effective intervention. A significant portion of schools, especially those in rural areas, lack qualified school psychologists. Even when counselors are available, their workload and training may be insufficient to address complex adolescent issues. Existing interventions are often limited to reactive crisis response rather than preventive or developmental mental health education.

Application Of Artificial Intelligence In the Field of Mental Health

Artificial intelligence (AI) technologies are increasingly being used in psychological support systems, offering the potential for scalability, personalization, and timely intervention. These tools include:

- such as Wysa and Woebot deliver cognitive behavioral therapy (CBT) techniques through conversation, providing compassionate responses and personalized coping strategies;
- Emotion recognition systems that analyze facial expressions, voice intonation, and language patterns to assess emotional states and detect distress in real time;
- Behavioral analytics platforms that monitor online behavior and social media interactions to flag potential signs of isolation, bullying, or depressive tendencies.

Research suggests that AI mental health tools can help reduce stigma by providing anonymous support and encouraging emotional expression without fear of judgment (Fitzpatrick et al., 2017; Inkster et al., 2018). Research by Abd-alrazaq et al. (2020) showed the dialogue agent has demonstrated a certain degree of effectiveness in alleviating the anxiety and depression symptoms of adolescents.

In China, Microsoft's XiaoIce is a well-known AI companion designed under an emotional computing framework to build empathy and sustained user interaction (Zhou, Gao, Li, & Shum, 2020). Reports also highlight XiaoIce's role in alleviating loneliness among urban users seeking emotional support (Chen, 2021).

However, challenges remain. There is limited empirical research on the acceptance of AI in the field of mental health among Chinese adolescents. Questions remain about data privacy, informed consent, and transparency of algorithmic decision-making. The lack of regulation and professional oversight in the development of AI tools raises ethical concerns.

Problems And Challenges of Existing Strategies

With the development of the times, mental health education has indeed been gradually valued, but it has only been valued in recent years. School mental health education started late, and many schools' mental health courses and psychological counseling activities often only stay on the surface. School teachers lack mental health knowledge and are not able to identify mental illnesses. They have not really achieved scientific and professional guidance for every student's mind. For example, in the current mental health education of primary and secondary school students, the most likely issue to attract people's attention is the rebellious psychology of students. Students will hate the imposed discipline of parents or teachers, and they hope that adults will educate them according to their own wishes. However, many teachers will use traditional education methods to educate students more harshly, which will not only fail to improve the problem, but also make students have more off-track psychological dynamics.

At present, relevant research points out that schools can carry out mental health education for adolescent students in accordance with the policy of mental health education. The report points out that schools should actively educate students to maintain mental health. Schools should offer special mental health education courses and allow teachers to infiltrate mental health education into subject teaching. Class meetings can also be used to help students learn psychological science. Schools can also provide psychological counseling and treatment for individual students by setting up hotline mailboxes and psychological service rooms. At the same time, some scholars pointed out that strengthening mental health education in primary and secondary schools and improving students' psychological quality require the joint efforts of all aspects of society to fundamentally prevent and reduce the occurrence of bad psychological problems among adolescents. However, these measures are not detailed and specific enough to be implemented in substance. These countermeasures are too general. For example, if a school offers a mental health education course, how to formulate the syllabus for this course? How can teachers understand the mental health education course through training? These all require more detailed discussions, and even the cooperation and unity of the education department.

In addition, so far, Wan (2022)'s research still points out that there is a bias in school education and psychological courses are not taken seriously. At present, China's middle school entrance examination and college entrance examination still dominate the fate of most students, so academic performance has become a top priority. In his study, some respondents said that now teachers pay attention to grades, schools pay attention to grades, and students have to be busy with grades. It can be seen that under the current circumstances, some teachers, schools, students themselves and even education departments still do not attach importance to the importance of mental health. In other words, under the current circumstances, even if mental health is taken seriously, it is difficult to truly implement mental health education, because the scores will ultimately determine whether students can enter a good university or a good company. In this case, I think finding countermeasures should not only target schools, teachers, families and students themselves, but also formulate countermeasures based on national conditions. Only in combination with national conditions can the formulated countermeasures be implemented smoothly.

The same is true for parents. Many parents will strengthen their children's mental health education in their subjective consciousness, but unintentionally, parents are still prone to negative behavior. Parents' attitude and character cultivation will affect students' mental health to a certain extent (ThePaper, 2023) , and as adult parents, their personalities have long been fixed and it is difficult to change them in a short period of time. For example, if a father's previous education method has always believed in the attitude of " a filial son is born under the stick " , then it is believed that in a short period of time, it will be difficult for this father to control his emotions, give up educating his children by scolding or even beating them, and choose to have more emotional exchanges with his children.

As we mentioned before, the current mental health services in China are not perfect enough, and there are still many people who cannot get good mental health help. The cost of psychological counseling is currently high. Generally speaking, visitors need to maintain a consultation frequency of at least once a week during the consultation period, and the overall cost burden is high. Many patients or potential patients will be discouraged by this, leading to more serious mental health problems. At the same time, there is a lack of demonstration of the effectiveness of psychological counseling therapy, and there is a lack of authoritative standards for service charges. The development of psychological counseling business in China is not well regulated, the operating model of psychological counseling institutions is too commercialized, and most institutions have not set up an effective service effect-oriented mechanism (Zhao, 2023) .

As of the end of 2017 , there were 33,400 practicing (assistant) psychiatrists in China , and the number of psychotherapists, medical social workers, and psychological counselors is also increasing year by year, but compared with the huge population base, this number is not optimistic (Z. Li & Liu, 2023) . Not to mention the mental health education resources on campus. The lack of mental health education resources also makes it difficult for contemporary teenagers to get good mental health education. Mental health education requires the support of certain educational resources, including appropriate teaching materials, materials and human resources. However, many schools are somewhat lacking in this regard, resulting in the inability to carry out mental health education in a comprehensive and in-depth manner. Especially in some cities with relatively backward economic conditions, this problem will be more prominent. At the same time, mental health education is a highly professional task that requires teachers to have relevant knowledge and skills. However, many teachers currently have limited professional literacy in mental health education and lack effective teaching strategies and methods. This may lead to deviations in the psychological health work such as mental health assessment in grassroots schools, and there is still much room for improvement in the professionalism of school psychological education staff.

In order to further implement the prevention and treatment of adolescent depression, the Ministry of Education has clearly included depression screening in student health examinations, established student mental health files, assessed students' mental health conditions, and paid special attention to students with abnormal assessment results (Z. Li & Liu, 2023) . However, the challenges that followed also emerged, namely how to conduct mental health assessments on students in an appropriate manner, how to effectively use the assessment results after the assessment, and how to provide students with adequate counseling and treatment services. These are still the problems to be solved in the implementation of various specific tasks. Although mental health has received attention from the country, it is more important to do the work in a detailed manner.

In today's society with rapid economic development, people have higher and higher material requirements, but ignore the spiritual needs. When it comes to health issues, people only keep the health standards on the surface of the body, but ignore the psychological health issues (ThePaper, 2023) . This makes most parents not deeply aware of the importance of mental health issues. Not only do they not pay attention to their own mental state, they also don't pay attention to their children's mental health issues. This has led to many children's mental health levels being off track. They often use the wrong three views to look at the world, and deal with problems with a negative attitude. They are full of negative energy and pessimism.

Gaps In the Existing Literature

Despite the promise of AI mental health tools, some gaps remain:

- Currently, there is a lack of empirical research on the effectiveness and acceptability of using artificial intelligence tools among Chinese middle school students.
- The impact of culture on trust, communication styles, and emotional expression is not well integrated into most AI designs.
- The ethical framework for the application of AI in educational settings, including consent mechanisms and data governance, remains incomplete.
- There is limited literature on how parents and teachers interpret the role of AI tools in adolescent psychological development.

This study addresses these gaps by presenting a culturally grounded, stakeholder-informed qualitative investigation that anticipates the implementation challenges and benefits of AI in school mental health supports.

Theoretical Framework

This study draws on three key frameworks. The first is the **Technology Acceptance Model (TAM)**, originally proposed by Fred Davis in 1989, which explains how users accept and use technology based on perceived usefulness and perceived ease of use. In this study, TAM helps explain how students, teachers, and parents view the role of AI tools in mental health, particularly regarding their functionality, accessibility, and emotional safety.

The second is **Bronfenbrenner's Ecological Systems Theory** (1979), which situates adolescent development within a complex system of interconnected environments: microsystems (family, school), mesosystems (the relationships between these environments), exosystems (indirect influences), and macrosystems (cultural values and policies). This theory supports the analysis of how AI interventions interact with individual, institutional, and social factors in the Chinese school context.

The third is **Cognitive Behavioral Theory (CBT)**, which underlies many AI chatbots and emotional support tools. CBT posits that emotional well-being is influenced by thought patterns and behaviors, which can be adjusted through guided reflection and feedback. AI applications that deliver CBT-based conversations aim to replicate some aspects of human counseling, potentially providing scalable emotional support.

Collectively, these frameworks provide a comprehensive perspective for analyzing how AI tools are perceived, accepted, and embedded into adolescent mental health support systems in Chinese middle schools.

Methodology

Study Design

This study adopted a qualitative research design to explore stakeholders' views on AI-based mental health support in Chinese middle schools. Given the conceptual nature of the study, data were collected through semi-structured interviews, open-ended questionnaires, non-intrusive observations, and literature analysis. The research focused on understanding the expected roles, benefits, and challenges of implementing AI technology in the educational mental health system.

Study Location and Participants

This study is expected to engage in conversations with secondary school students, teachers, and parents from three provinces in China (Beijing, Shandong, and Guangdong). These three provinces were selected for their educational backgrounds and regional diversity. Purposive sampling will be used to identify participants with diverse experiences and perspectives. It is expected that approximately 10-15 students, 10 teachers, and 10 parents will be included in each province, for a total of approximately 90 participants.

Data Collection Methods

The data collection methods were planned :

- **Semi-structured interviews** : Interviews will be conducted with teachers and parents to explore their perceptions of the potential, risks, and acceptability of AI-based interventions in school settings.
- **Open-ended questionnaire** : distributed to students to assess their knowledge and attitudes towards AI tools such as chatbots and emotion recognition.
- **Observational Field Notes** : Conducted during school visits to understand current psychological support systems and identify opportunities for AI integration.
- **Literature analysis** : Literature analysis is the theoretical pillar of this study. The researchers will systematically review and analyze relevant domestic and foreign literature to construct the theoretical framework of this study and form a comparative perspective with empirical data (Boote & Beile, 2005). Literature sources include but are not limited to academic journals, government documents, World Health Organization reports, etc. Through literature analysis, we can not only clarify the achievements and shortcomings of existing research, but also help to incorporate the results of this study into a wider international discussion.

All tools will be designed to elicit culturally and contextually sensitive responses and will be pilot tested to ensure clarity and appropriateness.

Data Analysis Procedure

The data will be analyzed using thematic analysis, following the six-step approach proposed by Braun and Clarke (2006): familiarization, coding, theme development, review, definition, and reporting. The analysis will be inductive and iterative, allowing themes to emerge from the data. NVivo software can be used to assist in organizing and coding qualitative data.

Ethical Considerations

The researchers will obtain ethical approval from their universities. Informed consent and approval will be obtained from all participants, and confidentiality will be ensured through anonymous responses. Data will be stored securely and all participants will participate voluntarily. Given the sensitivity of the topic, the interview protocol will avoid disturbing content and provide consulting resources when needed. At the same time, considering that the research subjects include minors, the researchers will specifically comply with the regulations on child research ethics. When soliciting the participation of minors, the researchers will not only provide them with concise and easy-to-understand information materials, but will also obtain written consent from their guardians (Alderson & Morrow, 2020). All underage participants will freely decide whether to participate in an environment without coercion and pressure.

Credibility

To enhance the credibility of the study, several strategies will be used:

- **Credibility** : achieved through triangulation of data sources (students, teachers, parents) and methods (interviews, questionnaires, observations, literature analysis).
- **Transferability** : A detailed description of the context and participants will allow for the applicability of the assessment in similar educational settings.
- **Accountability** : An audit trail of study procedures will be maintained to ensure transparency.
- **Confirmability** : Reflective journaling and peer debriefing will help mitigate researcher bias.

This approach aims to gain insights into how AI can be responsibly integrated into adolescent mental health support efforts in Chinese middle schools.

Expected Results and Discussion

The Expected Role of Artificial Intelligence in Mental Health Support

AI tools are expected to play an important role in complementing adolescent mental health services in Chinese middle schools. These tools are expected to help identify emotional distress early, provide personalized mental health resources, and reduce the stigma of seeking psychological support. Chatbots, in particular, are likely to become a viable alternative to human counselors by providing nonjudgmental, anonymous, and immediate interactions (Fitzpatrick et al., 2017). Emotion recognition tools enabled by smart classrooms—such as facial emotion recognition systems—have been shown to help teachers identify distressed students (Amimi et al., 2022). AI-enabled monitoring technologies also hold promise for supporting longitudinal tracking of emotional states in educational settings (Cruz-Gonzalez et al., 2025). In Chinese middle schools, these tools are expected to help identify emotional distress early, provide personalized mental health resources, and reduce the stigma of seeking psychological support. Chatbots, in particular, are likely to become a viable alternative to human counselors by providing nonjudgmental, anonymous, and immediate interactions. Emotion recognition tools can help teachers identify students who are experiencing distress, while automated tracking systems may facilitate longitudinal emotion monitoring.

Additionally, AI interventions could help students who are reluctant to open up to authority figures, thus serving as an entry point into the mental health system. Internationally, AI-supported interventions have shown potential to reduce barriers to access and increase engagement with mental health tools (Fitzpatrick et al., 2017 ; Naslund et al., 2016 ; Topol , 2019). Personalized digital prompts and feedback based on behavioral analytics could encourage students to reflect on and regulate their emotions, potentially reducing the incidence of severe mental health crises. These tools could also help allocate limited counseling resources more effectively across schools.

Predicting Stakeholder Perceptions

It is expected that students will show great interest in artificial intelligence tools that can protect their anonymity and can be used outside of regular class hours. Casus et al. (2024) found that artificial intelligence chatbot intervention measures can help users overcome the barriers to seeking traditional support and provide users with a private and emotionally accessible communication channel. That is to say, compared with traditional face-to-face counseling, they may be more emotionally open when interacting with artificial systems.

Teachers are expected to appreciate artificial intelligence-assisted tools because they can issue early warnings to at-risk students and support emotional regulation in the classroom. Uygun (2024) and Oh & Ahn (2024) both pointed out that teachers generally believe that artificial intelligence has potential in early detection of students' emotional distress and assisting students in emotional regulation in the classroom, while also expressing concerns about its limitations in social and emotional aspects. At the same time, some educators may feel unprepared to interpret the data generated by artificial intelligence or lack confidence in digital platforms.

Parents may be cautiously optimistic and value the role of AI in monitoring behavioral patterns, but also express concerns about surveillance, data privacy, and cultural fit. Some studies have observed that parents—particularly younger ones—may find AI tools acceptable if perceived as supportive rather than intrusive, especially in contexts involving parental technoference (Glassman et al., 2021). The Technology Acceptance Model further suggests that parental acceptance of educational technology depends on perceived usefulness, social influence, and self-efficacy (Osorio-Saez et al., 2021). In rural or traditional and conservative settings, people may have less trust in AI systems and be reluctant to allow technology to perform tasks that were traditionally considered human. Therefore, acceptance may vary across populations and may depend on exposure, perceived reliability, and evidence of effectiveness.

Ethical And Cultural Considerations

Key ethical concerns include protecting the privacy and autonomy of minor users, requiring informed consent, and offering opt-out mechanisms without penalty. Experts also emphasize the importance of algorithmic transparency and the mitigation of bias in emotion-recognition and predictive behavioral systems (Holmes et al., 2021; Wang et al., 2024).

From a cultural perspective, Chinese cultural traditions often emphasize social harmony, familial obligation, and cautious emotional expression, which can affect how mental health tools are received. Digital health interventions need careful cultural adaptation—such as tailoring language, metaphors, and interpersonal tone—to align with these norms (Ye et al., 2019; Sit et al., 2020).

Implementation Challenges And Fairness

Implementation of AI-based mental health interventions may encounter practical obstacles. Differences in infrastructure, teacher capacity, and support between urban and rural schools are known to impact digital education equity (Han & Li, 2025). Moreover, rural students often lag in digital literacy and effective tool usage due to limited device access, with family involvement playing a decisive role (Sun et al., 2024).

Nonetheless, with appropriate investments and inclusive design, AI tools can expand services to underserved populations and promote greater equity. Strategic collaboration between developers, school administrators, and policymakers is expected to be key to equitable implementation.

Summary Of Expected Results

In summary, AI technologies are expected to provide a scalable, adaptable, and user-friendly support mechanism for adolescent mental health in Chinese schools. While AIs are not intended to replace human counselors, they are expected to complement existing services, enhance early intervention efforts, and foster a more proactive mental health culture. Stakeholder trust, ethical governance, and cultural relevance are expected to be decisive factors for the success of such interventions.

Conclusion And Implications

Summary Of Expected Contributions Of The Research

This study anticipates that incorporating AI into mental health support services in Chinese middle schools will lead to significant improvements in early detection, emotional support, and intervention coverage. AI tools such as chatbots and emotion recognition platforms are expected to provide a scalable, efficient, and culturally sensitive alternative to traditional counseling systems.

While AI is not intended to replace human counselors, it promises to be a valuable supplement that can reduce the stigma of seeking help, facilitate emotional expression, and promote timely support. Anticipated research findings suggest that students will prefer the anonymity and immediacy provided by AI, while educators and parents may view these tools as helpful adjuncts, provided privacy and cultural fit are ensured.

Implications For Policy And Practice

Implications for policy and practice include: AI systems need to be designed to be inclusive, adaptable, and ethical. Policymakers should provide clear regulatory guidance and support infrastructure development, especially in rural areas. Educators need to be trained to effectively interpret AI insights, and mental health professionals must be involved in tool development to ensure psychological validity and cultural sensitivity.

Future Research Directions

In future studies, researchers may explore how AI interventions affect long-term outcomes, such as academic achievement, emotional resilience, and behavioral change. Cross-regional comparisons and longitudinal studies can provide further insights into the dynamic interactions between technology, culture, and mental health in educational contexts. For example, academic achievement, emotional resilience, and behavioral change. Cross-regional comparisons and

longitudinal studies can provide further insights into the dynamic interactions between technology, culture, and mental health in educational contexts.

Final Reflections

Ultimately, this research helps advance the emerging discussion about the responsible use of AI in school mental health services. It highlights the importance of participatory design, inclusive policy development, and ongoing evaluation to ensure AI technologies equitably support the well-being of youth in diverse educational settings.

Acknowledgements

The researcher would like to express sincere gratitude to the academic supervisor for invaluable guidance, constructive feedback, and continuous encouragement throughout the development of this study. Appreciation is also extended to colleagues and peers who provided helpful insights during the research process. Finally, heartfelt thanks go to family and friends for their unwavering support.

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