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The current situation and intervention measures of mental health literacy of vocational college early childhood education students from the perspective of preschool integrated education—A disease perception perspective based on attention deficit hyperactivity disorder in children

Xu Gao[1], Congjuan Yu[1,*], Hongwei Li[2], Jieyu Tao[3]

[1]School of Marxism, Anhui Institute of Information Technology, Wuhu, Anhui, 241000, China
[2]Institute of Innovative Development Strategy, Anhui University, Hefei, Anhui, 230039, China
[3]Faculty of General Education and Foreign Language, Anhui Institute of Information Technology, Wuhu, Anhui, 241000, China
[*]Corresponding author:1317547806@qq.com

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Abstract: Vocational college early childhood education students are an important source of teachers for kindergarten teachers, and mental health literacy is an important part of preschool integrated education literacy. The level of mental health literacy of the vocational college early childhood education students directly affects the level of preschool integrated education literacy and determines their future professional competency as kindergarten teachers. Based on this, this study investigated 1013 preschool normal students in Guangxi College for Preschool Education to understand the current situation and problems of mental health literacy of children with attention deficit hyperactivity disorder (ADHD) and to explore the intervention measures in order to improve the mental health literacy of preschool normal students with ADHD as a whole and to enhance their ability of preschool integrated education and future professional competence.

1. Introduction

Preschool integrated education emphasizes the provision of a normalized, non-segregated educational environment for children with physical and mental disabilities. It involves offering all special education and related support measures within regular classrooms, thereby integrating special education with general education. The goal is to facilitate children with physical and mental disabilities' adaptation to the campus life of mainstream schools, unlock their potential, and achieve all-round physical and mental development. This approach aligns with the global trends in education and represents one of the developmental directions in early childhood education in China[1]. High-

quality teachers are the prerequisite for ensuring the high-quality development of education and educational equity. On the one hand, this entails equipping regular classes with dedicated special education teachers to offer specialized services to children with special needs. On the other hand, it necessitates enhancing the preschool integrated education literacy of mainstream kindergarten teachers, empowering them to proficiently recognize, educate, and support children with special needs in attaining comprehensive physical and mental development[2,3]. The policy of "14th Five-Year Special Education Development and Enhancement Action Plan" pointed out that it is necessary to promote the pre-service special education and encourage regular kindergartens to enroll disabled children with the capability to receive regular education for inclusive education. To fulfill this requirement for qualified teachers, it is essential to maintain rigorous criteria for the qualifications of pre-service teachers. This includes the incorporation of specialized special education courses into higher education institutions' early childhood education programs, with the aim of enhancing the inclusive education competencies of pre-service teachers [4]. This protective measure has been incorporated into the policy of '14th Five-Year Action Plan for the Development and Enhancement of Early Childhood Education,' establishing its significance as a pivotal element within the plan. Consequently, it is evident that preschool integrated education literacy has evolved into a mandatory prerequisite and an emerging trend in the education of early childhood majors. This transformation significantly influences teachers' future professional competence.

Mental health literacy is an essential component of preschool integrated education literacy. First and foremost, it's crucial to recognize that mental health literacy stands as a fundamental component within the domain of preschool integrated education literacy. This concept of mental health literacy represents a significant academic construct. It was initially conceptualized by Jorm in 1997, who defined it as a body of knowledge and beliefs aimed at aiding individuals in their ability to identify, manage, and prevent mental disorders[5]. Subsequently, in 2012, Jorm extended this concept, enriching it by adding a dimension that underscores the knowledge-based actions essential for offering support and further emphasizing the importance of skills in providing assistance to individuals [6]. Borrowing from Jorm's concept of mental health literacy, this paper focuses on exploring the conceptual elements of identification, cause awareness, consequence awareness, and treatment awareness regarding children's Attention Deficit Hyperactivity Disorder (ADHD) from a disease perception perspective.

In addition, it is important to note that ADHD is one of the common mental disorders among preschool children. Researches indicates a high prevalence rate of 6.26% for ADHD[7]. The extent to which pre-service teachers possess the knowledge, attitudes, and behavioral competencies to address ADHD in children directly impacts the well-being, learning, growth, family dynamics, and societal harmony of children with disabilities. As a result, the exploration of early childhood education students' mental health literacy concerning ADHD has emerged as a significant focal point within the realm of preschool integrated education research.

In line with this, the present study is centered on early childhood education students enrolled at Guangxi College of Preschool Education, an institution renowned as the cradle for the development of early childhood education students in Guangxi. The research primarily investigates the current status of early childhood education students' mental health literacy regarding ADHD, prevailing challenges, and potential intervention strategies. The purpose of the article is to comprehensively enhance their capacity in preschool integrated education as well as the future professional competence.

2. Research Objects and Research Tools

2.1 Research Objects

The study adopted a stratified sampling method to conduct a questionnaire survey among early

childhood education students from the first to the third year at Guangxi College of Preschool Education. A total of 1,013 questionnaires were distributed and 882 valid responses received. The validity rate of the questionnaires was 87.07% (Table 1). The demographic characteristics of the sampled population closely align with the overall survey population structure.

2.2 Research Tools

The psychological health literacy measurement tool utilized in this study was adapted from the "Chinese Public Perception of Mental Disorders Questionnaire" compiled by Li Fenglan[8]. Building upon Jorm's framework of mental health literacy, this questionnaire with high validity and reliability, effectively evaluates the effectively assesses knowledge related to the recognition, understanding of causes, awareness of consequences, and understanding of treatment methods regarding mental disorders.

The survey questionnaire was structured using case-based scenarios, each detailing a specific case of a 5-year-old child diagnosed with ADHD. Following each case, respondents were presented with a set of five questions related to psychological disorders. These questions included:

"Can you identify the specific issue faced by this child? (If yes, please provide a detailed description.)"

"What kind of issue does this child likely belong to? "

"What factors do you believe have contributed to this individual's issue?"

"What potential consequences do you anticipate arising from this child's issue?"

"Please assess the effectiveness of the following methods in addressing this child's issue."

Table 1: Overview of sample distribution (N=882)

	Options	Frequency (percent)		Frequency	Frequency (percent)
Genders	Male	114 (12.93%)	Ethnicity	The Zhuang ethnic group	343 (38.89%)
	Female	768 (87.07%)		The Han ethnic group	472 (53.51%)
Are you the only child	Yes	97 (11.00%)		The Yao ethnic group	36 (3.85%)
	No	785 (89.00%)		The others	31 (3.51%)
Place of Residence	City	136 (15.42%)	Grade	Freshman	394 (44.67%)
	Town	184 (20.86%)		Sophomore	252 (28.57%)
	Village	562 (63.72%)		Junior	236 (26.76%)

The first question offered a binary response, allowing participants to choose between "Yes" and "No". In the case of a "Yes" response, further details were required. For the second question, respondents selected from six categories, including "Personality and abilities issue," "Ideological issue," "Physical health issue," "Psychological or mental issue," "Living situation issue," and "Other issues." According to questions three and four were grouped and featured a seven-point scale ranging from "Definitely not" to "Definitely will," with each point assigned a value from 1 to 7. The fifth question included two response options: "Effective" and "Ineffective," corresponding to values of 1 and 0, respectively. Data analysis was conducted using SPSS 19.0.

3. Research result

3.1 Identification of ADHD among vocational college early childhood education students in the context of preschool integrated education

Table 2: Identification of ADHD among vocational college early childhood education students (N=882)

Questions	Options	ADHD
Can you identify the specific issue faced by this child? (Please label the specific issue)	No	568(64.40%)
	Yes	314(35.60%)
	label a specific issue correctly	96(30.57%)
What kind of issue does this child likely belong to	Personality and abilities issue	513(58.16%)
	Ideological issue	64(7.26%)
	Physical health issues	23(2.61%)
	Psychological or mental issue	205(23.24%)
	Living situation issues	66(7.48%)
	The others	11(1.25%)
Note: The data in the table are frequencies (percent).		

Mental disorder identification is a key indicator of an individual's knowledge of mental disorders, and the better the status of mental disorder identification, the more objective and correct the knowledge of mental disorders. Generally speaking, there are three links in the identification of mental disorders: firstly, it is the perception of the problem as an abnormality, which can be referred to as abnormality perception; secondly, it is the definition of the abnormality as a mental illness rather than a problem of other nature (e.g., a problem of personal moral character), which can be referred to as problem definition; and lastly, it is the conceptualisation of an abnormality that can be defined as a mental illness as a specific type of mental illness (e.g., anxiety), which can be referred to as conceptual labelling [9].

The results of the survey in Table 2 showed the following: first, abnormal perception. Only 35.60% of the kindergarten students reported that they knew what kind of problems the individuals in the ADHD cases had, and the overall rate of abnormality awareness was low. Second, problem definition: 23.24% of the kindergarten teachers were able to correctly define the abnormality of individuals with ADHD as a psychological or psychiatric problem, and 58.16% of the kindergarten teachers believed that the problems of individuals with ADHD should be character ability problems, which is a low rate of correct definition. Third, conceptual labelling. 30.57% of the Kindergarten teacher students were able to correctly conceptualise the illness of the individuals in the cases as attention deficit hyperactivity disorder, and the overall rate of correct conceptual labelling was low.

3.2 Perceptions of the cause to ADHD among vocational college early childhood education students in the context of preschool integrated education

The causes of mental disorders mainly consist of three categories: supernatural, biological and psychosocial factors [9].Supernatural factors emphasize that psychological disorders are triggered by supernatural or mystical forces such as such as demons, witchcraft, and mysterious powers. Biological factors underscore the role of biochemical imbalances, brain-related ailments, or genetic

predispositions as causative factors in psychological disorders. Socio-psychological factors highlight social and environmental factors, such as stress or psychological trauma, as contributors to these disorders.

Table 3: Perceptions of the Cause to ADHD Among Vocational College Early Childhood Education Students (N=882)

Questions	ADHD
Seasonal and climatic causes	2.82(1.511)
Experiencing setbacks	3.64(1.579)
Interpersonal relationship	4.44(1.445)
Social atmosphere	4.26(1.436)
Personalities or ideologies	4.82(1.213)
Under a lot of pressure	4.01(1.416)
Physical defects	3.66(1.444)
Problems with individual capabilities	4.29(1.350)
Poor family atmosphere	4.50(1.319)
Bad moods or prolonged depression	4.33(1.440)
Note: Data in the table are means (standard deviation).	

According to the results in Table 3, seven factors were considered more likely to trigger ADHD, which are interpersonal relationship, social atmosphere, personalities or ideologies, under a lot of pressure, problems with individual capabilities, poor family atmosphere and bad moods or prolonged depression. T remaining three factors are not considered as primary causes of ADHD. In addition, among the multitude of factors contributing to childhood ADHD, personalities or ideologies, family atmosphere, and interpersonal relationships are considered the most probable reason contributed to the disease.

3.3 Perceptions of consequence to ADHD among vocational college early childhood education students in the context of preschool integrated education

Table 4: Perceptions of the Consequence to ADHD Among Vocational College Early Childhood Education Students (N=882)

Questions	ADHD
Affecting the family's reputation and causing them pain	3.94(1.386)
Feeling bad and miserable	4.21(1.420)
No hope in life	3.21(1.393)
Doing extreme things, hurting yourself	3.78(1.446)
Increased financial and emotional burden on families	4.09(1.393)
Deranged nervous system	3.31(1.437)
Hurting others, endangering society	3.72(1.433)
It's hard to get ahead in life	3.75(1.329)
Loss of family members or social abandonment	3.32(1.459)
Security threatened	3.76(1.450)
Note: Data in the table are means (standard deviation).	

College students' cognition level regarding the severity of the consequences of mental disorders can significantly impact their attitudes and responses toward individuals with mental health issues. According to the results in Table 4, early childhood education students generally believed that ADHD was unlikely to lead individuals to 'engage in extreme actions, hurt themselves, or put their lives at

risk. Additionally, vocational college early childhood education students perceive that ADHD is more likely to result in ‘feeling bad and miserable’. Furthermore, respondents believed that ADHD may cause patients to increased financial and emotional burden on families.

3.4 Perceptions of treatment to ADHD among vocational college early childhood education students in the context of preschool integrated education

Table 5: Perceived treatment of ADHD among vocational college early childhood education students (N=882)

Questions	ADHD
Support and consolation from family and friend	812(92.06%)
Receiving medical treatment such as injections, medication, hospitalization, etc.	570(64.63%)
Social provision of assistance	760(86.17%)
sharing with family and friends about unpleasant things	794(90.02%)
Get more exercise	784(88.89%)
Release stress and keep yourself in a good mood	814(92.29%)
Strengthening parental control	624(70.75%)
Psychological conditioning for open-mindedness and cheerfulness	795(90.14%)
Receiving psychological treatment such as psychological counselling, psychological counselling, etc.	810(91.84%)
Enhance your studies or take up some hobbies	816(92.52%)
Note: The data in the table are frequencies (percent).	

College students' ways of dealing with psychological disorders primarily include professional assistance, non-professional support, and self-help strategies in total. The data results in Table 5 show that: According to professional assistance, only 64.63% of the early childhood education students believe that the children with disabilities should choose "medical treatment such as injections, medication and hospitalization", while 91.84% of them consider "psychological treatments such as counseling and therapy" as the appropriate approach for patients. Second, for the non-professional support, 92.06%, 90.02%, 86.17% and 70.75% of the pre-service teachers thought that they should choose the methods of " Support and consolation from family and friend ", "sharing with family and friends about unpleasant things", " Social provision of assistance ", "Strengthening parental control" as non-professional interventions. Third, 92.52%, 92.29%, 90.14%, and 88.89% of early childhood education students highlight the significance of self-help strategies. They believe the children should choose to "Enhance your studies or take up some hobbies", "Release stress and keep yourself in a good mood", "Psychological conditioning for open-mindedness and cheerfulness", and " Get more exercise " as self-help interventions for the treatment of attention deficit hyperactivity disorder in children.

4. Conclusion and discussion

4.1 Within the perspective of preschool integrated education, vocational college students majoring in early childhood education exhibit limited recognition and labeling skills regarding issues related to ADHD children

The comparability of the findings on the recognition of psychological disorders in different countries and regions is debatable due to differences in the populations, history, culture backgrounds

and the research tools as well. Previous studies has found that mental health recognition capabilities of most pre-service teachers are insufficient and require improvement. Compared to the rates of perceiving abnormalities and labeling concepts, vocational college early childhood education students exhibit a lower rate of accurately defining problems related to ADHD, this suggest that they lack ability to accurately classify individual cases of the disorder as psychological or mental issues. Consequently, the results underscore the insufficiency in the recognition abilities of vocational college early childhood education students concerning ADHD, emphasizing the need for enhancement.

4.2 Insufficient and biased understanding of the causes of ADHD among vocational vollege early childhood education students in the preschool integrated education perspective

Previous research has indicated that the cause of ADHD involves a complex interplay of physiological, psychological, and social factors. These factors encompass genetic elements, such as organ abnormalities and chromosomal variations, prenatal conditions, family-related factors like parenting and family relationships, as well as societal and psychological components, and nutritional and dietary influences[10,11]. The study found that the results of the survey on the perception of the causes of ADHD among kindergarten teachers had the following characteristics. First, these students commonly perceive that factor related to family relationships and family atmosphere, as well as interpersonal relationships, significantly influence the onset of ADHD. This aligns with previous studies on the causes of ADHD. Second, personality and ideologies are not factors contributing to the onset of ADHD, and there is consensus in the academic community on this matter. However, the results show that pre-service teachers generally regard this factor as an important cause of the disorder, which is contrary to the existing studies. Finally, it is generally acknowledged that "brain issues and physical deficiencies" are crucial factors leading to the onset ADHD. However, the results showed that pre-service teachers were unable to identify this causative factor accurately. This suggests that pre-service teachers have a bias in the knowledge of causes to ADHD.

4.3 Under the perspective of preschool integrated education, vocational college early childhood education students show a deviation in the awareness of the consequences of ADHD

Children with ADHD often exhibit difficulties in concentrating, short attention duration, hyperactivity, impulsivity, cognitive impairment, learning difficulties, and emotional-behavioral disorders when compared to normal children[12] Their emotional well-being is not directly affected by the condition itself[13]. Instead, negative emotions such as feeling unhappy or distressed arise only when they face misunderstanding, rejection, or criticism from others. However, the emotion like unhappiness or distress, are attributed to the consequences of the disorder by mistake. This highlights that pre-service teachers may have an inadequate or biased understanding of the implications of ADHD.

4.4 Under the perspective of preschool integrated education, vocational college early childhood education students exhibit diverse perceptions regarding the treatment for children with attention-deficit hyperactivity disorder. However, the effectiveness of medical interventions has not gained sufficient emphasis

Two features characterized the perceptions of the vocational college early childhood education students' approaches to ADHD: firstly, there was a diversity of approaches. Professional assistance, non-professional support, and self-help were all considered as effective interventions for ADHD, this aligns with the comprehensive treatment approach associated with ADHD. Secondly, previous

research and practice have shown that [14,15]medications such as central stimulants, antidepressants, and norepinephrine reuptake inhibitor-related medications should be the premier treatment choice, which are one of the most effective interventions. However, over one-third of early childhood education students do not endorse "medical treatments such as injections or medications" [16,17]Researchers also found that medical treatments were the least effective intervention methods for different groups. This highlights the potential common issue of a "cognitive deficit" regarding medical treatment methods across different groups.

5. Recommendations for countermeasures

vocational college early childhood education students are future early childhood educators, and their knowledge of ADHD reflects the state of preschool integrated education literacy, which is directly impact the effectiveness of the school's talent cultivation and whether they can meet the vocational requirements of early childhood education after graduation. The results indicate that the mental health literacy of high vocational preschool education students concerning childhood ADHD is generally does not match the expectations. This suggests a need for improvement in their preschool integrated education abilities and strengthen their future professional competence. The study presents the following recommendations for enhancing the cognitive levels of ADHD among high vocational preschool education students:

5.1 Social interventions

Firstly, establish "China Special Needs Children's Care Day" to foster a supportive social environment where the entire society cares for and shows empathy towards children with Attention Deficit Hyperactivity Disorder (ADHD) as well as other special needs groups. Secondly, scientific research on ADHD should be deepened, and research results should be promoted by means of a diversified range of social media to disseminate knowledge of pre-school inclusive education. Thirdly, government authorities should enact policies to encourage the collaboration between social organizations on children with special needs and early childhood teacher training institutions. This collaboration could involve joint educational programs and the establishment of cooperative internship centers. These initiatives would provide opportunities and facilities for early childhood education students to engage in practical teaching, thereby enhancing their cognitive understanding of ADHD in children.

5.2 Schooling interventions

This includes using school notice boards, pamphlets, broadcasts, lectures, WeChat platforms, short videos, and campus forums to disseminate knowledge about attention deficit hyperactivity disorder. This includes courses on pre-school child health and care, pre-school child health education, and the diagnosis and assessment of pre-school special needs children. These initiatives aim to further enhance the cognitive understanding of childhood ADHD. This strategy empowers both peer and teacher groups to become key contributors to improving the literacy of ADHD among early childhood education students.

5.3 Individual Enhancement Training

Online learning resources such as catechism, book review, on-site observation and expert consultation are used to acquire theoretical knowledge related to attention deficit hyperactivity disorder. Research has shown that web-based self-help applications on computers or mobile devices

can effectively optimize the cognitive understanding of psychological disorders, leading to improved self-knowledge and skills in mental health[18,19]. Learning practical skills related to ADHD from experienced professionals working in these organizations is crucial. Domestic scholars, Ren Zhihong has demonstrated that the effectiveness of interventions in enhancing cognitive understanding of psychological disorders is directly influenced by interactions and close contact with individuals. Compared to the experiment with no interaction between the patients, daily interactions with patients significantly showed the better results [20]. Thirdly, participation in mental health first aid training programs (MHFA) related to ADHD can improve participants' ability to recognize symptoms of psychological disorders, alter their beliefs about beliefs about psychotherapy, and reduce stigmatising attitudes towards the disease and the patient.

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