The Influence of Mothers' Educational Level on Children's Comprehensive Quality

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Abstract. The relations between mothers and children have always been tight. The education level of women is closely related to their nurturing concepts and behaviors, and it influences not only the individual development of their offspring but also the entire population's quality of humankind. While mothers' education has always been in the spotlight, previous research has left a gap in a comprehensive analysis of the impact of mothers' education level on their children. Therefore, this paper tries to determine the influence of a mother's education level on the comprehensive quality of children before adulthood from an overall picture. In light of the status quo of mothers' education as well as the relevant previous research in this field, this paper approaches the subject by analyzing the effect on the comprehensive quality of children in three dimensions, respectively. Firstly, with regard to physical quality, mothers' education level strengthens the prevention and treatment of illness and diseases and also fosters a healthier living lifestyle for children. Secondly, based on the theoretical framework of psychological suzhi, mothers' education level benefits the development of children's cognitive quality, individuality quality, and adaptability quality. Thirdly, children's science and cultural literacy are affected by educated mothers. In conclusion, mothers with higher educational attainment can promote the comprehensive quality of their children and help support the sustainable development of society.

Keywords: mothers' educational level; children's comprehensive quality; maternal behavior.

1. Introduction

Mothers, often regarded as the family's primary caretakers, profoundly influence their offspring. Napoleon Bonaparte once said: "Give me an educated mother, I shall promise you the birth of a civilized, educated nation." Girls at present are prospective mothers in the future. If the adequate emphasis is not placed on girls' education today, then future generations can be harmed. This kind of "circulation" is essential for both individual growth and social development: a virtuous cycle brings blessing, and a vicious one gets catastrophe [1]. The educational attainment of females is at the heart of the future development of the entire human being.

Plenty of previous research has studied mothers' educational level and the influence on their children. Some of the studies have placed their focus on the effect of the educated level of both parents [2, 3]; others have tried to figure out the impact that a mother's education level has on a particular dimension of children, for example, the influence on children's health and nutrition status [4]. More commonly, some research concentrate on discussing the relations between mothers' education level and children's growth within one region [5, 6, 7]. These studies have indeed explained the positive correlation between mothers' educational attainment and children's development. Nevertheless, there is insufficient in-depth research into the relationship between a mother's educational attainment and the overall quality of their children. Is it evident that mothers' education level influences their children's comprehensive development? What dimensions does the impact have on children? These are crucial inquiries that this study will address in order to advance gender equality in education in the future.

In light of the definition of "population quality" given in *China's Population Situation and Policies* [8], this paper employs a self-developed extension of analytical frameworks from relevant literature to discuss the influence of mothers' education level on children's comprehensive quality from the dimension of physical quality, psychological suzhi, and science and cultural literacy before their adulthood.

2. The Influence of Mothers' Educational Level on Children's Physical Qualities

2.1 Disease and Illness

As suggested by Caldwell in 1979, the education level of mothers is counted as a factor closely related to the mortality rate of children [9]. Tightly linked to the physical health of the children, mothers with higher education are prone to have a better understanding of the importance of disease prevention and medical treatment, providing their children with a more rational and scientific upbringing environment.

2.1.1 Prevention of childhood diseases

Vaccination is considered one of the most affordable methods of preventing disease. Studies researching the relations between maternal education and immunization coverage of children can be traced back to 1998 [10]. Supported by cases in different regions, such as Kenya [5], Nigeria [6], and India [7], it is acknowledged that mothers' educational attainment is beneficial to children's vaccination percentage. Furthermore, the chance of receiving vaccinations is influenced by the mother's education level and by residing in a community with a higher percentage of educated women [6]. When mothers are more educated, they own higher scientific literacy, leading to a more profound understanding of vaccination. Therefore, they are more likely to possess an open mind towards vaccination and follow their children's vaccination routine, maximizing the vaccine's effectiveness in terms of disease prevention.

2.1.2 Treatment of childhood diseases

The attitude and knowledge of mothers toward disease treatment are essential for the children's physical health. Cross-sectional research in India examined the relationship between mothers' education level, their socio-economic status, and their children's knowledge, attitude, and practice about acute diarrhoeal diseases [11]. This study discovered that, compared to children of educated mothers, most children whose mothers were illiterate had inadequate knowledge and attitudes about diarrheal disorders. In other words, the mother's education was substantially correlated with children's knowledge and attitudes. An uneducated or illiterate mother, even though she can take care of the family, may not be as aware of teaching her kids good hygiene habits, which could raise their risk of infection and sickness [11]. A mother's duty not only is to be the caretaker but also to guide and influence the children in terms of medical treatment.

2.2 Living Lifestyle

2.2.1 Diet

As one of the children's primary caretakers, mothers' education level greatly influences the children's nutritional status. Research conducted by Reed B. A. et al. has confirmed that mother education level strongly correlates with scientific feeding knowledge [12]. In fact, too much or too little nutrition harms a child's growth: malnutrition leads to stunting, wasting, and being overweight. Aside from economic factors, mothers' education is vital when discussing a family's diet because the children's healthy growth cannot be realized without support from a scientific and adequate diet. Moreover, generally speaking, mothers are in charge of this in the developing stage of the children. Education enabled mothers to possess the concepts of a healthy diet and learn more scientific knowledge about a healthy diet.

2.2.2 Exercise habit

The benefits of regular exercise have been discussed for more than a century. Doing sports regularly, whether aerobic or strength training, enhances students' physical and mental health, which is one of the most conspicuous advantages. Diving into the reasons behind the reasons for involving in exercise, the primary element influencing people's propensities to do sports, according to Birchwood et al., is family cultures [13]. To further investigate family sporting cultures, Sharon

Wheeler did semi-structured interviews with eight 'sporty' children of a primary school in North Wales and their parents [14]. The results revealed that sporting cultures were transmitted through 'habitus': beliefs and behaviors regarding sports. When the length of childcare time is mainly determined by the education level of the mother[15], maternal-child interactions in exercise, which reflect maternal beliefs and behaviors about sport, have a much more positive impact on children's physical health[16].

2.2.3 Sleeping routine

In 2018, Mindell J. A. and Williamson A. A. laid a comprehensive picture of how sleeping routines contribute to positive development outcomes from the aspects of nutrition, hygiene, communication, and physical contact [17]. For example, healthy sleep habits were favorably associated with mother education on sleep hygiene in infants under six months [17]. Taking these four dimensions into consideration, mothers with higher education backgrounds may have a better performance in forming a healthy bedtime routine for their children due to the higher cultural and scientific literacy and the open-mindedness they obtained in education toward a different field of knowledge regarding their children's physical health.

3. The Influence of Mothers' Educational Level on Children's Psychological Suzhi

Psychological quality is a term with broad implications and no agreed-upon definition as of yet. In general, it refers to the entire field of psychology research [18]. Psychological suzhi, according to Zhang, is a kind of psychological quality based on physiological conditions and closely related to people's adaptive and creative behavior, which possesses the function of internalizing the external stimulus into stable, fundamental, implicit, derivative, and developmental factors [19]. Though this notion is an indigenous concept put forward under the background of quality education in China [19], it has already been accepted in academic circles in western countries [20]. To define its structure, studies have been carried out to theoretically and empirically understand the content of "psychological suzhi" [19, 20, 21]. As demonstrated in figure 1, psychological suzhi constitutes cognitive quality, individuality quality, and adaptability quality.

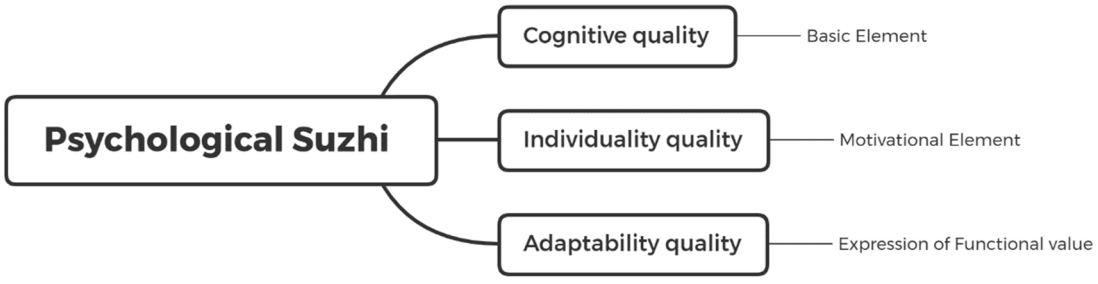

Fig. 1 The structure of psychological suzhi

In light of the above, this paper will adopt the concept of "psychological suzhi" for its authority and clarity to serve this paper's purpose better.

3.1 Cognitive Quality

Cognitive quality is a psychological quality that reflects in an individual's reflection of objects, directly participates in the specific operation of the cognition, and primarily contains the components such as awareness, planning, and monitoring [22]. The definition of cognitive quality sheds light on the further analysis of this topic: viewing cognitive stimulation as a tool to understand the connection between maternal education and the quality of the home environment.

As early as three months old, mothers' education level has been linked to children's cognitive ability [23]. Numerous studies have found that more educated women tend to devote more time to pursuits that improve the literacy and numeracy of their children. For example, Burns P. M. conducted a study in 2020 that discussed the connections between children's math abilities and their educational ambitions, family environment, and maternal education [24]. One of the conclusions of this research is that there is a correlation between early math achievement and the number of time women spent with their kids playing games or doing puzzles, talking about nature or performing scientific projects, creating and playing with construction toys, and assisting them with arts and crafts [24]. In other words, these activities can be viewed as "cognitive stimulation" of the children's math skills. More educated mothers also put more emphasis on the language stimulation of their children. For example, mothers with higher levels of education used more words and a more comprehensive range of word kinds when conversing with their children. Mothers' educational attainment is correlated with young children's expressive and receptive language abilities [25].

Compared to children whose mothers had some college experience or had completed college or graduate school, children whose mothers had a high school diploma or less were at a considerable cognitive and socioeconomic disadvantage [24]. Educated mothers are more likely to establish an enriched home environment, concerned with logic skills or language skills, for their children to directly get in touch with the objective world, further promoting their cognitive quality.

3.2 Individuality Quality

As suggested by Zhang and Wang in 2012, individuality quality is reflected in people's treatment of objective things [20]. Though it does not engage in cognition behaviors directly, it manifests its impact through motivating and modifying cognition behaviors, such as self-regulation and self-control [21]. The following paragraphs will discuss the relations between these components to understand individuality quality better.

Maternal education is expected to influence children's self-regulation profoundly [26]. However, due to the sociopolitical differences, the level of impact that mothers' education levels have is different across cultures. Cross-cultural research showed that mothers' education substantially impacts American kids' self-control more than Norwegian kids [27]. Moreover, the difference may result from sociodemographic variables [27].

Self-control is also weighted as an equal position when discussing individuality quality. Take the addiction to video games as an example: it has become a widespread phenomenon that adolescents, especially teenage boys, tend to be addicted to video games. Gaming addiction was lowered by the mother's education level [28]. When dealing with addiction, mothers with higher education may be more willing to embrace methods with scientific support to lead and communicate with their children. In contrast, less educated mothers may choose an oversimplified or even crude way.

3.3 Adaptability Quality

Serving as the expression of functional value, adaptability quality, also including several items such as societal harmony is counted as an essential part of psychological suzhi, which is the ability of an individual to interact with and live in a social environment for learning, respond to situations, and defending oneself [20].

Take one of the items, frustration tolerance, as an example to illustrate the link between maternal education and the adaptability quality of children. The term "resilience" has shared many similarities with "frustration tolerance" proposed in 2000 [22]. Research in mainland China based on an ecological framework put its focuses on the connection between social capital and the resilience of left-behind children [29]. Setting factors such as gender, grade, household register (Hukou), father's education, and mother's education as control variables, the researchers found that only the mother's education has a remarkably significant effect on the resilience of children, indicating that children with higher mother's education level have higher levels of resilience.

When encountering the outside world, mothers with higher educational attainment are prone to adopt more diverse and scientific ways, such as "frustration education," to let the youngsters learn from their setbacks and hardships in order to have a complete grasp of the world as well as their position, thereby enhancing their adaptability quality.

4. The Influence of Mothers' Educational Level on Children's Psychological Suzhi

The growth and development of a child are phasic and sequential, indicating that the future "successfulness" depends heavily on the education of their mother [30]. This irreversible characteristic of children's growth highlights the role of mothers since they are generally believed as the caretaker who accompanies the children for the most extended period of time, especially in their childhood.

Regarded as "vague, ill-defined, and challenging to quantify [31]", the definitions of "science literacy" and "cultural literacy" have not been reached upon consensus. Based on a comprehensive analysis of relevant literature, in this paper, children's school performance is viewed as a reflection of their science and cultural literacy. Therefore, in the following paragraphs, children's learning motivation, learning ability, and learning perseverance linked with mothers' education level through school performance(school attendance, academic achievement, etc.) are to be discussed. However, though these three dimensions are explained respectively, it is worth noting that they coexist as vital components of evaluating children's science and culture literacy and influence one another during children's learning.

4.1 Influence on Children's Learning Motivation

Motivation is the primary and fundamental of learning. Based on Ford's Motivational Systems Theory [32], the motivation toward learning can be categorized into three components: "goals, personal agency beliefs, and emotional arousal processes." In Ford's study, goals guide other elements toward specific outcomes since they refer to what people desire (or are afraid) to accomplish [32]. Emotional arousal processes can support activity in the near term, and personal agency beliefs serve as filters that determine if goals are achievable and supported by the setting [32].

In 2009, Varanasi City, the effect of the level of educational attainment on adolescents' achievement motivation was carried out[33]. This study found that parents with higher education pass their value toward education on to their kids, influencing their kids' success and motivation levels [33]. Moreover, the educational level of mothers boosts teenagers' motivation to succeed in school [33]. In accordance with Acharya, N., and Joshi, S.'s finding in 2009, the results of a study targeted to examine to what extent parents' education influence the motivation of 15-year-old Polish adolescents to study English indicate that maternal education level had a significant impact on personal agency views [34]. Furthermore, students from more educated households tended to have more self-efficacy views and a positive self-concept related to language learning than students from less educated backgrounds [34]. Whether reflected in "goals," "personal agency beliefs," or "emotional arousal processes", mothers with higher education attainment benefit from the development of children's learning motivation [32].

4.2 Influence on Children's Learning Ability

Since children's learning ability is reflected in their academic performance at school, children's academic performance can not be ignored when discussing the connection between mothers' educational attainment and their children's learning ability. Educated mothers also are anticipated to provide a better learning environment and serve as better role models than uneducated mothers. Peng's study in 2009 found that the impact of mothers on children's learning is most clearly shown in the learning strategies and attitudes they pass on and how to create a positive learning environment for their children [30].

For example, the mother's educational background has an impact on the science students' performance [35]. Consistent with Faize, F. A. and Dahar, M. A.'s findings [35], Englund et al. [36] discovered that women with higher education could help their kids better in pre-school-level problem-solving settings. In their longitudinal study, they discovered that compared to mothers with lower educational attainment, more educated mothers offered more assistance to their kids in problem-solving situations [36]. These mothers also had more involvement in their children's studies and higher expectations in their children's primary school years [36]. More specifically, the cause-effect chain of mother's education level and children's academic performance appears to be like: more adequate structure laboratory tasks provided and coordinated behaviors in problem-solving tasks of the children-higher levels of IQ of the children-greater academic performance-higher parental expectations, greater parental involvement, and higher achievement in the future [36].

Additionally, mothers with higher education not only spend more time on their children themselves but also increase the childcare time that fathers spend [37]. Therefore, with the presence of an educated mother in the family, the attitudes, strategies, and all other factors beneficial to children's learning ability that both parents own can come into effect at a higher possibility.

4.3 Influence on Children's Learning Perseverance

The learning perseverance of children is closely associated with their expectations: What education level are they expected to achieve? Why is this level of education seem appropriate for them? Such questions require pondering, and the environment the children grow up in certainly will affect their anticipations of themselves, among which the influence of mothers' education attainment serves as an essential factor.

As Peng suggested in 2009, the urge to keep learning is inextricably linked to upholding the mother's expectations [30]. Some researchers who pay attention to different forms of parental involvement discovered that the expectations from parents for children' s education level have the most substantial relation to their academic achievement [38, 39]. After conducting two meta-analyses, Fan X. and Chen M. found that parental desire and expectations for their children's educational success had the most prominent association with kids' academic accomplishment, while parental home monitoring has the most negligible relationship [38]. Likewise, Singh K. et al.'s 1995 study was in accordance with Fan X. and Chen M. [38, 39]. Based on the data of 21,834 students and their parents from *the National Education Longitudinal Study of 1988*, the researchers discovered that parents' educational aspirations have the most significant effect on children's achievement among three other components: parent-child communication, family structure, and parent involvement in school issues [39].

Probing the connection between parents' expectations for their kids' educational attainment and their kids' academic accomplishment, Goldenberg C. et al. have carried out a longitudinal study to illustrate the connection between immigrant Latino parents' aspirations and expectations, and their children's school performance, finding that the expectations of parents and the performance of children associates with each other [40]. Furthermore, it should be considered whether parents' behaviors align with their anticipation when discussing the influence of parents' anticipation of children [36].

5. Conclusion

Ever since the *Education for All* agenda was launched in 1990, girls' education has been part and parcel of global education policy. Nevertheless, today, the likelihood of girls joining a classroom is still lower than that of boys, despite the efforts made by all pertinent parties globally. When discussing girls' education, a mother's education is always nonnegligible since the mother is one of the possible roles for girls in the future. The overall quality of a population can not be isolated from the education its younger generation receives, implying that it can not be separated from the most intimate educators—their parents, especially their mothers.

In view of the relevant documents and status quo of female education, this paper has formed a 3-dimension comprehensive analysis of the influence of a mother's educational level on children's comprehensive quality. Firstly, the impact of the mother's educational attainment on children's physical equality is discussed in the aspects of the disease and illness as well as the living lifestyle. Mothers with higher education are more likely to equip themselves with more heightened awareness and more scientific knowledge toward the prevention and treatment of diseases. They also affect their children's living style by guiding their diet, forming their exercise habits, and their sleeping routines in a healthier direction. Secondly, based on the structure of "psychological suzhi," it has been demonstrated that the higher the mother's education level is, the better cognitive quality, individuality quality, and adaptability quality the children would possess. Thirdly, children with educated mothers are more likely to have higher science and cultural literacy. Echoing their school performance, their learning motivation, learning ability, and learning perseverance improves under the influence of their mothers' education level.

Overall, this study has contributed to both the academic field as well as the education practice. In the academic area, this research has provided a deeper insight into the relations between mothers' education level and the development of their offspring, presenting a clearer picture of the influence of mothers' education level on children's comprehensive quality. As for the education practice, the findings gained from this research could be of assistance to both the policymakers as well as the education practitioners. The policies should be gender-equality-oriented, forming a guideline for females' right to education starting from the beginning of accessibility to being educated, proceeding throughout the education process to the educational outcome. The education practitioners should be highly aware of the significance of education for both genders and show no prejudice or preference for either gender during their practice. However, due to the lack of empirical research, this study does have its limitations. In the future study, a more detailed discussion on the influence of mothers' education on children of different age groups is a fruitful area to dive into.

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