

Breaking the Perplexity to Reproduce Light - Experience of Corrected Myopia on Children and Adolescents: A Meta-Synthesis on Qualitative Research

Ciao-Lin Ho*

Department of Child Care and Education, Hungkuang University, Taichung City, Taiwan

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*Corresponding author: Ciao-Lin Ho, Department of Child Care and Education, Hungkuang University, Taichung City, Taiwan

Abstract

This study used a meta-synthesis on qualitative research to understand the context, impact and barriers of myopia development on children and adolescents as well as to inform complex decision-making processes in policy and practice. A systematic literature search identified through English and Chinese databases, covering the period was between 1960 and 2024, and nine studies included in quantitative synthesis. This study found four meta-syntheses included uncorrected myopia obscured learning development and caused negative emotions; the long confusing way to seek medical treatment; struggling with stigma of wearing glasses and the reproducing vision; and parents evolved from negligence to life wisdom that coexists with myopia. Children and adolescents with myopia experienced learning disabilities and negative emotions, which urgently needed parents to be aware of and attention to seek medical treatment and visual health literacy. Medical professionals should pay attention to assisting families to seek medical treatment for myopia, discussing myopia progress and appropriate treatment to help children receive myopia as soon as possible, and implementing activities to promote eye health

Keywords: Child; Adolescents; Myopia; Nearsightedness Life Experience; Eye Care

Introduction

Myopia is a common type of refractive error, and it can be corrected with glasses. It affects approximately over nine tenths of the population in some East Asian countries and one-third of the population in the US. [1]. In 2010, there were about 285 million people visually impaired in the world, and most of all causes of visual impairment are curable or preventable. Globally the principal causes of visual impairment are uncorrected refractive errors, reaching 43% [2]. Especially, the development and progression of early onset myopia in young children is the main cause of visual deterioration. The culture, education and poor habits of children would be the most important risk factor of myopia, and parents do not know much about the pathogenic factors of ocular diseases [3]. Consequently, we must comprehend that children and adolescents encounter the difficulties before and after myopia correction. Because these difficulties have a certain impact on the psychological relationship between them and their parents, such as those who with refractive error have significantly

lower purposefulness, cooperativeness, empathy, helpfulness, and compassion [4]. The impact will affect their personality traits. In addition, improper myopia correction will make parents emerge anxiety symptoms, thereby increasing the pressure. Similarly, it will also affect their psychological development [5-7].

Although previous studies had explored barriers and experiences of myopia, few qualitative studies used meta-synthesis for exploration of barriers among myopia prevention or control in children and adolescents. This study collected relevant literature and used the meta-synthesis on qualitative research to verify the experience of children and adolescents in the process of myopia correction through the perspective of children, adolescents, parents, school teachers, and care professionals. These findings will help the caregivers understand the plight of the family, develop feasible intervention measures for prevention and treatment of myopia, and provide psychological support from the patient's perspective.

Methods

The qualitative meta-synthesis is the development of an explanatory model or theory which could gain insights from two or more categorical or thematic analyses of the same findings. In this study, we used the Critical Appraisal Checklist for the meta-synthesis designed by the Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI-QARI) to assess the methodological quality of studies and to determine interpretation and synthesis of the results of studies.

Participants

This study used qualitative research to understand the children and adolescents with myopia related to the experience of living habits, family care, and the school life. Then, integrating their life discourse described the entire experience or myopia diagnosis and reporting. Therefore, subjects included school children and adolescents less than 18 years of age, and their parents, teachers, and eye care professionals were also included to overlook their problems.

Types of Studies

This review considered studies that focused on qualitative data, including but not limited to designs, such as Phenomenology, Hermeneutic phenomenology, Grounded theory, Qualitative inquiry, Ethnography, Historical study, Focus group, and Meta-synthesis.

Search Strategy

The search strategy was to obtain all unpublished and published studies through English or Chinese languages between January 1960 and January 2024. The search database includes

English databases such as Pubmed, CINAHL, Medline, and Cochrane Library; Chinese databases, such as the Taiwan Journal Indexing System, CEPS Chinese Electronic Journal Service, and the National Dissertation Information Network. Set the keyword to child* or pediatric* or youth* and myopia or refractive errors or short sight* and life experience, life with myopia, seek medical advice, or perspective or attribute or eye care.* And using Boolean logic combined relevant vocabularies for literature search.

Quality Appraisal

Before inclusion in the review, qualitative papers in this study were assessed by two independent reviewers for methodological validity to use standardized critical appraisal instruments from the JBI-QARI. Any disagreements between reviewers had been resolved through discussion.

Data Extraction

The extracting data from the original studies included (1) non-qualitative study, and (2) the article is not written in English or Chinese. Findings were rated by their degree of credibility. We used 3 levels of credibility in the JBI-QARI qualitative evidence to rate findings by using credible (C), unequivocal (U), and unsupported (Us).

Data Synthesis

We used JBI-QARI to pool manually the qualitative findings, then the synthesis or aggregation of findings generated a set of statements that represented the aggregation. After assembling the findings, we categorized these findings based on similar meaning. These categories were then subjected to a meta-synthesis which produced a single comprehensive set of synthesized findings.

Table 1: Quality Appraisal of Included Studies Based on JBI-QARI (N=9).

| JBI-QARI Appraisal Criteria for Interpretive & Critical Research | Chang, Ni, & Liou, [11] | Dawn et al., [13] | Balasu-bramani-am et al., [9] | Senthil-kumar et al., [3] | Li et al., [14] | Ebeigbe & Emedike, [15] | Kuma-ran et al., [8] | Frazier et al., [12] | Dudo-vitz et al., [10] |
|--|-------------------------|-------------------|-------------------------------|---------------------------|-----------------|-------------------------|----------------------|----------------------|------------------------|
| 1. Congruity between the philosophical perspective and the methodology. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2. Congruity between the methodology and the research question or objectives. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3. Congruity between the methodology and the data collection methods. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4. Congruity between the methodology and the representation and analysis of data. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5. Congruity between the methodology and the interpretation of results. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 6. A statement locating the researcher cultural-ly or theoretically. | No | No | No | No | No | No | No | Yes | No |
| 7. The influence of the researcher on the re-search addressed and vice versa, addressed. | No | No | No | No | No | No | No | No | No |
| 8. Participants and their voices adequately represented. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

| | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 9. Ethical or ethical approval obtained. | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 10. Conclusions drawn in the research report appear to flow from the analysis or interpretation of the data. | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

Table 2: Characteristics and quality of included studies (n=9).

| Author (year) | Participants | Phenomena of Interest | Study design | Data collection methods | Data analysis | Findings |
|----------------------------|---|---|--|---|------------------|---|
| Dawn et al. [13] | 48 interviews were conducted with parents of pediatric ophthalmology patients | To determine expectations of children's eye care | qualitative, cross-sectional, pilot study. | interviews were conducted with parents | Content analysis | The six expectation by parents were (1) Clinical Competence, (2) Information about Diagnosis, (3) Education/Training, (4), Interaction with Child (5) Explanation in Clear Language, and (6) Personal Connection. |
| Balasubramaniam et al. [9] | 35 parents of school-aged children and 16 eye care professionals | To investigate the behaviors and beliefs of parents in seeking eye care for children. | qualitative snapshot narrative study | In depth interviews and focus group discussions | themes analysis | The themes on refractive error were symptoms, family history, importance of school screening, perceived importance of eyes, and barriers for eye care seeking. |
| Senthilkumar et al. [2] | 35 parents and 16 eye care practitioners | To report parents' awareness and perception of eye diseases in their children. | qualitative study | In depth interviews and focus group discussions | themes analysis | Three themes of myopia emerged: parents' awareness about eye problems, parents' awareness and perception on refractive error, perception of causes for refractive correction, parents' perception on eye health. |
| Li et al. [14] | 28 students aged 14 to 18 years, 20 parents, and 21 teachers. | To understand barriers to glasses use among children | qualitative study | focus groups | Content analysis | The themes: requirements for glasses, the decision to wear glasses, effect of myopia and nonuse of glasses, knowledge about myopia and vision, and concern for children's vision and strategies to avoid myopia |
| Ebeigbe & Emedike [15] | 35 parents had children aged between 5 and 12 years | To determine how parents know about their children's eye problems. | qualitative study | focus group discussions or in-depth interviews | Themes analysis | The themes: parents' awareness of children's eye problems, perception of causes for refractive correction, parents' perception of eye health, and parents' awareness and perception of refractive error. |
| Kumaran et al. [8] | 31 eye care practitioners, 27 children, and 22 teachers | To understand the vision-related quality of life of schoolchildren with uncorrected refractive error. | A snapshot qualitative research design | focus group discussions | themes analysis | The theme: complaints and symptoms of uncorrected refractive error; vision-related activity limitation, coping strategies of children with uncorrected refractive error, psychological impact of children with uncorrected refractive error, social impact of children with uncorrected refractive error; perceived difference after first time refractive correction, and reasons for refractive error remaining uncorrected |
| Frazier et al. [12] | 40 parents at least one child under the age of 18 | To evaluate the perceptions related to seeking eye care for children. | qualitative study | Focus group discussions | themes analysis | The theme: awareness of school vision screenings, awareness of places to seek eye care, barriers, barriers after failing a vision screening, general perceptions, and suggested changes to improve access to eye care. |

| | | | | | | |
|------------------------|--|---|-------------------|---|------------------|---|
| Dudovitz et al. [10] | 21 students, 20 parents, and 25 teachers | To evaluate how corrective glasses affect academic achievement and health. | qualitative study | focus groups | themes analysis | The theme: poor school performance, stress, correcting visual deficits improved school function, and improved ability to complete homework. |
| Chang, Ni, & Liou [11] | two cases of parents and children | To analyze the biographical processes of the early myopia phase of urban children, and to provide some suggestions for prevention work. | qualitative study | narrative interview and deep interview method | Content analysis | The theme: the crisis of myopia deteriorated after primary school, the choice of wearing glasses, and the crisis of vision deterioration. |

Table 3: Theme of Meta-synthesis.

| Theme | Categories | Findings |
|---|---|---|
| Uncorrected myopia obscured learning development and caused negative emotions | Myopia made the body discomfort and interfered with daily activities, leisure | Complaints and symptoms of uncorrected refractive error (U); Vision-related activity limitation (U); Coping strategies of children with uncorrected refractive error; Symptoms (U) |
| | Affecting learning | Poor school performance (U); The crisis of myopia deteriorated after primary school (U) |
| | Experiencing psychological and emotional stress | Psychological impact of children with uncorrected refractive error (U); Stress (U); Social impact of children with uncorrected refractive error (U) |
| The long confusing way to seek medical treatment | Expecting a reliable medical treatment to reduce uncertainty | Awareness of school vision screenings (U); Importance of school screening (U); Awareness of places to seek eye care (U); Doctor's skill (C); Communication (C); Interaction with Child (C); explanation in clear language (C) |
| | The difficulty in medical treatment | Barriers (U); Barriers after failing a vision screening (U); Barriers for eye care seeking economic barrier (U); Logistical barriers (U); Logistics (C) |
| Struggling with stigma of wearing glasses and the reproducing vision | Wearing glasses became an irreversible mark on lifelong myopia | Requirements for glasses; The choice of wearing glasses (U); Concerns about spectacle prescription (U); General Perceptions (U); The decision to wear glasses (U); Suggested changes to improve access to eye care (U) |
| | The effect of wearing glasses | Effect of myopia and nonuse of glasses (U); Perceived difference after first time refractive correction (U); Correcting visual deficits improved school function (U); Improved ability to complete homework (U) |
| Parents evolved from negligence to life wisdom that coexists with myopia | Parents lacked visual health literacy | Parents' awareness of children's eye problems (U); Knowledge about myopia and vision (U); Reasons for refractive error remaining uncorrected (U); the crisis of Vision deterioration (U) |
| | Parents' life wisdom in dealing with myopia | Perception of causes for refractive correction (U); Parents' perception of eye health (U); Concern for children's vision and strategies to avoid myopia (U); Parents' awareness and perception of refractive error (U) |

†U: unequivocal (the findings accompanied by an illustration that is beyond reasonable doubt and therefore not open to challenge).

‡C: credible (the findings accompanied by an illustration lacking clear association with it and therefore open to challenge).

Results

A total of 127 studies were identified from hand-searched and database, and 9 studies were included after critically appraised (Figure 1). The quality appraisal of included studies based on JBI-QARI as shown in Table 1. At the end of the review process, a total of 39 findings yielded 9 categories and grouped into 4 syntheses. The four derived meta-syntheses included uncorrected myopia obscured learning development and caused negative emotions; the long confusing way to seek medical treatment; struggling with stigma of wearing glasses and the reproducing vision; parents evolved from negligence to life wisdom that coexists with myopia (Table 2).

Meta-Synthesis 1: Uncorrected Myopia Obscured Learning Development and Caused Negative Emotions

Children and adolescents with myopia expressed physical symptoms and behavior symptoms that affected their academic performance. In addition, they felt psychological stress when parents blamed them for making mistakes and for their poor academic performance. A total of 9 findings were grouped into 3 categories, and then further derived into this synthesis. The three categories were myopia made the body discomfort and interfered with daily activities and leisure; affecting academic learning; myopia caused psychological and social stress. Some children express that they are not willing to participate in extracurricular

activities or competitions [8]. Some children express that they are not willing to participate in extracurricular activities or competitions [8].

Myopia Made the Body Discomfort and Interfered with Daily Activities and Leisure

Children and adolescents with myopia had some physical symptoms and difficulties for daily activities and leisure. Common physical symptoms included headache, eyestrain, eye pain, squinting, swelling of eyelids, squeezing of eyes, and frequent blinking [8,9]. The difficulties in distant vision had recognizing a wall clock or friends, using computer, drawing, painting, and watching television. In order to clearly see the object, the body had abnormal head posture [8,9].

Affecting Academic Learning

Myopia causes blurry vision when looking at distant objects, and it affects academic learning for children and adolescents. The learning difficulties for them with myopia typically were seeing distant objects unclear, needed to hold book closer, refused to do homework, and were unable to write in a straight line [10,11]. They also were distraction, slow learners and only average academic performance, so they needed to be helped to recite or dictate at school and at home [10,11]. Children have extended reading time and refused to do their homework because of eye strain and headache [8].

Myopia Caused Psychological and Social Stress

Myopic children and adolescents expressed more childhood stress than emmetropia peer, such as psychological and social stress which let them feel inferior, low self-esteem, low confidence, inferiority complex, depression, and difficulty to sleep [8,10]. The stress was from ignorance and disbelief of parents, a fear of being embarrassed by peers for inability, and trouble for poor behavior or academic performance. Finally, they feared of playing, avoided group activities, and preferred to stay alone [8,10].

Meta-Synthesis 2: The Long Confusing Way to Seek Medical Treatment

The identified most important expectation for parents and myopic children and adolescents was clinical competence of the ophthalmologists, which included experience, reputation, good interaction, and knowledge. Good competence could let parents find the direction in the long confusing way to seek medical treatment. The two categories generated from 12 findings of meta-synthesis 2, which consisted of expecting a reliable medical treatment to reduce uncertainty, and difficulties in medical treatment.

Expecting a Reliable Medical Treatment to Reduce Uncertainty

School vision screenings could help to estimate eye conditions. In general, parents understood its importance, hence they needed to visit eye clinics for early treatment and interventions when

they were notified to re-examine for children with myopia [9,12]. Parents expected ophthalmologists to tell them which treatment is more suitable for children, so they needed ophthalmologists with good skill and clinical competence to reduce uncertainty [13]. In order to communicate with children and adolescents, the ophthalmologists also must talk to them in familiar language [12].

Difficulties in Medical Treatment

The difficulties of managing children's myopia for parents were to take leave from work, get an appointment with a doctor, communicate with the doctors, find transport, locate the hospital, and travel long distances [9,12,13], and those were an excuse to hinder parents' decision [12]. Most of the lower and middle socioeconomic status parents had economic barriers. As the glasses was too expensive, parents concerned in affordability of eye care, including the cost of glasses, and the charges of consultation and treatment [9,12].

Meta-Synthesis 3: Struggling with Stigma of Wearing Glasses and the Reproducing Vision

Wearing glasses in school produced some negative comments and teasing that engendered social consequences such as the stigma and delay of wearing glasses. That needs to develop strategies for students in dealing with refractive error remaining uncorrected. Ten findings were grouped into 2 categories in this synthesis, which consisted of wearing glasses became an irreversible mark on lifelong myopia, and the effect of wearing glasses.

Wearing Glasses became an Irreversible Mark on Lifelong Myopia

The requirement of the satisfactory glasses for children and adolescents was having higher quality glasses [11,14]. But wearing glasses was perceived as a stigma [9], children and adolescents worried about the appearance of glasses and the shape of the eye [14]. On the other hand, the stigma for parents caused by the original idea of culture or tradition [12]. However, glasses became an irreversible mark on lifelong myopia. Once students wear glasses, they will have to be with the glasses for life (Table 3).

The Effect of Wearing Glasses

A pair of heavy and inconvenient glasses caused itching, hence children and adolescents disliked wearing glasses and were used to break it often [8]. The main effect of wearing glasses were hindrance to participate and play in some extracurricular activities [8], because the eyes could be hurt on exercising and raised the possibility of injury [14]. However, wearing glasses for children and adolescents with myopia greatly improved their concentration and focus, academic performance, and reading ability. They also raised willingness to enhance academic ability and promote more accuracy in mathematical calculation, which also enhanced confidence level [8,10].

Meta-Synthesis 4: Parents Evolved from Negligence to Life Wisdom that Coexists with Myopia

Eight findings were grouped into 2 categories, and then further derived into a synthesis. The two categories included parents lacked visual health literacy, and parents' life wisdom in dealing with myopia. There should be a strategy to help parents establish the information platform and coexists with myopia.

Parents Lacked Visual Health Literacy

Some parents lacked interest, understanding and concern, and attributed the complaints of children and adolescents such as eyestrain and headache to other reasons rather than eyes diseases [9,14]. Therefore, they were blamed for their poor academic performance and making mistakes because parents were ignorance, unbelief, and lack of awareness on myopia [8]. When nobody in the family had ever had eye diseases, or parents lacked visual health literacy, then parents perceived their child would also be emmetropic [8]. As long as had common sense on the causes of refractive correction and eye health [15], parents would pay attention on children's vision and strategies to avoid myopia [14]. However, the crisis of vision deterioration was still without stopping misuse of eyes, including reading book, watching TV, or playing computer games too much [11].

Parents' Life Wisdom in Dealing with Myopia

Parents' life wisdom in dealing with myopia had optimizing posture, appropriate lighting, performing eye exercises, looking at something green, using a nutritious diet, getting plenty of exercise, getting enough rest, and playing outdoors. They learned causes of eye diseases and identified the signs and symptoms of these diseases, and utilized the knowledge from churches and schools, radio, newspapers, flyers and brochures, and television to help children [1,14,15].

Discussion

Four themes revealed from the results of our qualitative meta-synthesis research on children experiences of medical care seeking for myopia. These were uncorrected myopia obscured learning development and caused negative emotions; the long confusing way to seek medical treatment; struggling with stigma of wearing glasses and the reproducing vision; parents evolved from negligence to life wisdom that coexists with myopia.

These themes demonstrated myopia affected the academic performance of children and adolescents. In general, academic performance represents a child's ability, reputation and vanity. Good academic performance of children and adolescents was recognized level of success for parents to promote esteem. For reducing embarrassment, improving academic performance was a positive drive for parents to correct children's myopia. However, poor academic performance for children and adolescents had the effects of negative learnings, including a fear of being

embarrassed by peers for incompetence, preferring to stay alone, avoiding group activities [8], making him difficult to sleep, anxiety going to school, and a fear of being told that he needed to bring home good grades [10]. By the Adler method, we knew when children and adolescents were discouraged by parents, so they would withdraw, give up and feel depressed [16]. Through poor learning experience, they didn't show the attitude of progress. These frustrations changed some children's traits, including low confidence, inferiority complex, depression, and low self-esteem [8].

In addition, poor academic performance not only put pressure on children and adolescents but also on parents, but the corrected myopia increased the improvement of learning behavior [17]. By myopia symptoms and behavior, parents and teachers could notice and judge to screen students' vision. A cross-sectional study in China found that, compared with normal students, the personality characteristics of the myopic students had more emotional and psychological problems [18]. The above-mentioned learning and negative emotional problems of children and adolescents may result from myopia, so their parents needed to be educated myopia symptoms and awareness. In Japan, children (one and a half years old) and adolescents received a visual self-examination, and parents used a card and a questionnaire survey for the test. When the parents observed visual acuity of the baby less than 0.5, they needed to bring their children to hospital [19]. In 2001, South Korea tried to perform the national pre-school visual screening program, and the first step was to send a set of five photo cards and a questionnaire of the family screening. Any eye visual acuity is less than 0.5 or any abnormal response is recommended for further eye examination [20]. Integration of the above discussion we know that enhancing the importance of myopia awareness for parents is the measures on early detection of children with visual problems.

Screening and re-examination were often a necessary treatment process for children with myopia. The results of this study showed that parents often have a high degree of anxiety in the process, and they would actively seek medical assistance. Myopia problem was to need the selection of the glasses and the long-term follow-up, so parents were troubled by it. Uncertainty of treatment and various medical difficulties affected the willingness of parents to keep the follow-up. Parents at that stage hoped that physicians had reliable clinical competence and put forward the best evidence to show that vision problems could be controlled and treated. A large amount of evidences suggested that preschool visual screening could improve the detection rate of visual impairment and the clinical outcome compared to children who had never been screening [21]. Mydriatic optometry is through the mydriatic agent to make the eyes of the ciliary muscle completely paralyzed, loss of regulation under the circumstances of optometry.

To determine whether it is true or false myopia must rely on mydriasis optometry [22]. The integration of the above had been highlighted an important measure for early treatment in the construction of organized screening and case management programs. In addition to assisting children in early treatment, an important issue is to understand the factors that affect parents' medical treatment. This study found that parents had some worries and challenges in seeking eye care for their children. Especially in some low- and middle-income families, parents were busy with their livelihoods so that they had no time and mental to care for children's vision problems. Economic barriers made the families worry that medical expenses and glasses cost are too high and form obstacles that prevented them from seeking treatment for their children. It is noteworthy that the Singapore government considered the issues and established a partnership with the optical shop to provide glasses coupons fund. Children in low- and middle-income families received a \$ 30 coupon to pay for spectacles at a nearby optical shop [23]. Therefore, the attention on medical problems and appropriate assistance is an important part of assisting children in receiving early treatment.

A number of evidences showed glasses were an important measure of myopia treatment and control. However, some cultures and old traditional thinking still affected the parents' desire to assist children with glasses [12]. Stigma relates to the shame that a person may feel when he or she fails to meet the standards of others, and the fear of being defamed to cause the individual to reveal his or her shortcomings [24]. Wearing glasses was considered a real social stigma, so children could give up putting on glasses. Children with myopia were not with glasses or corrected myopia would cause myopia to accelerate deterioration [25,26], because the glasses were an important correction tool and should wear full-time [27]. The control effect of the full-time wearing glasses was better than that of wearing glasses while looking far [28]. Of course, the use of glasses may bring inconvenience such as hindering the participation of the game and some extracurricular activities [14], but most of the life performance after the refractive correction was better than before the correction. Therefore, to understand the advantages and disadvantages of wearing glasses was in order to reduce the resistance with using glasses. However, wearing glasses was an important means to prevent myopia progress, and the propagation of many prevention policies needed through the school and media publicity. If the policy implementation could be successful, it should detail to consider the obstacles faced by students and the best myopia control.

The purpose of this study was to understand the factors that affected the process of medical treatment for children and adolescents, and the results found that some parents ignored eye care when they did not know children have vision problems. Child neglect is defined as a child caregiver who fails to meet the child's physical, educational, emotional or medical needs [29]. Parents

depended on social class, wealth, culture and income to use what methods of child rearing [30]. The parents, often belonging to the low- and middle-income families, are relocated from the situation of poverty to the situation of negligence for their children [31,32]. However, once children have vision problems, then parents would continue to ask or query to learn more information. In addition, parents had the desired mood to seek treatment, want to know the actual situation of vision problems, and confirm the possibility of cure. After re-examination, parents knew that children had vision problems, needed long-term follow-up, and couldn't be completely cured, so they would have a negative response and disappointment, including failure to comply with treatment, loss of eye examination, blame and restrictions on children's eye habits, or the restrictions on the use of electronic products. At that time, myopia was often progression, and the majority of parents really noticed the importance of myopia control and prevention. Adaptation for parents and children is the process of changing to suit different conditions [33]. Parents hope to achieve the goal of myopia control through some activities including reading the relevant health education information and referral treatment. Parents will gradually adapt the problem of children with myopia, and further understand life wisdom that coexists with myopia.

Conclusion

To help children early detection and early treatment of myopia is the initial prevention of myopia. In the medical treatment process, children will experience poor learning and negative emotion, so the situation needs to be noted. Therefore, the parents need to be educated the myopia symptoms and signs. Early diagnosis and treatment are the biggest expectation of the parents in the process of medical treatment. However, during the medical treatment of the child, the parents' mind is transferred from the anticipation of healing to the irreversible setbacks of life-long myopia. They often fall into the treatment obstacles and experience the disappointment or even give up treatment. The medical staff should pay attention to assist the family for the awareness of myopia, medical treatment related issues, and psychological state.

To discuss the progress of myopia and appropriate treatment of treatment with parents is to help children to accept and implement the activities and promote eye health as soon as possible. Although the parents will be worried about the medical treatment or the impact of glasses, there is a struggle to accept or give up treatment. To provide children, adolescents and parents in the treatment process related to the knowledge of empirical treatment, to help parents choose and receive appropriate treatment, and to further develop life wisdom of myopia coexistence. In addition, the prevalence of myopia continued to rise in the world, medical treatment of the confusion, obstacles, and loss of tracking is the important children's health issues for government and public health units. This highlights the organized

screening and case management plan is an early treatment measures for low-income families to give treatment subsidies. Through the four categories of myopia prevention and treatment measures in this study, we hope to improve children's visual health.

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