Analysis of Reasons for Endocrinology Consultation and Non-medical Intervention Needs in Children with Normal Height: A Qualitative Study Postprint

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Abstract

Background: The growing concern regarding height issues among children of normal height and their families has increased the burden on medical resources and the potential for growth hormone misuse. Objective: To explore the reasons for medical consultation and needs for non-medical interventions among families of children with normal height who visit endocrinology departments due to concerns about short stature, providing a reference for developing targeted intervention measures for these families. Methods: This study employed purposive sampling, with sample size determined based on the principle of information saturation. From April to July 2024, parents of children who visited Beijing Children' s Hospital with the chief complaint of "self-perceived short stature requiring growth hormone intervention therapy" but were medically diagnosed with normal height were recruited for semi-structured in-depth individual interviews. The interview outline focused on reasons for endocrinology visits, consultation goals, and non-medical interventions for children with normal height, and data were analyzed using thematic framework analysis. Results: This study ultimately included 24 families (28 parents). The age range of participants was 30–53 years, including 10 males and 18 females. The main reasons for parents seeking medical consultation for their children included: sociocultural factors (social pressure and expectations, educational competition pressure, media influence, peer relationships and social comparison, and cultural values), knowledge and information factors (misunderstanding of growth hormone effects, medical institution and physician recommendations, blind optimism toward medicine), parental factors (personal emotions and stress of parents, herd mentality, parental responsibility), and child-related factors (career planning, consideration of genetic factors, marriage and reproduction considerations, child' s mental health). Consultation goals included achieving normal

height standards and exceeding average height. Parents typically attempted self-directed interventions such as diet, sleep, and exercise, but compliance issues existed during implementation. The main channels for parents to obtain medical information included medical professionals, relatives and friends, and online media. Parents had substantial information needs regarding professional knowledge of growth and development, selection of nutritional supplements, and non-medical intervention methods. Conclusion: This study reveals the multifaceted reasons for families of children with normal height visiting endocrinology departments, primarily including social pressure and expectations, educational competition pressure, media influence, and misunderstanding of growth hormone effects. Furthermore, existing non-medical intervention information fails to adequately meet the specific needs of such families, providing a basis for developing personalized non-medical intervention measures to promote healthy child development.

Full Text

Reasons for Seeking Medical Treatment in Endocrinology Department and the Need for Non-medical Intervention in Children with Normal Height: A Qualitative Study

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Abstract

Background: The increasing concern about height among children with normal stature and their families aggravates the burden on medical resources and the potential for growth hormone abuse.

Objective: This study aims to explore the reasons for seeking medical attention in endocrine clinics among families with children of normal height who perceive their children as short, and their demand for non-medical interventions, which can provide insights for developing targeted intervention measures for such families.

Methods: Purposive sampling method was used in this study, and the sample size was determined based on the principle of information saturation. From

April to July 2024, parents who were admitted to Beijing Children' s Hospital with a complaint of "perceived short stature" and seeking growth hormone therapy, but whose children were medically diagnosed with normal height, were recruited for semi-structured in-depth personal interviews. The interview outline focused on the reasons, goals, and non-medical interventions for children with normal height in the endocrinology department, and the data were analyzed using thematic framework analysis.

Results: This study ultimately included 24 families, comprising 28 individuals. The age range of the interviewees was 30 to 53 years, with 10 males and 18 females. The main reasons for parents bringing their children to seek medical attention were as follows: socio-cultural factors (social pressures and expectations, educational competitive pressures, media influences, relationships and social comparisons, cultural values, etc.), knowledge and information factors (misunderstanding of the role of growth hormone, recommendations of medical institutions and doctors, blindly optimistic attitude toward medicine), parental factors (personal emotions and pressures of parents, herd mentality, parental responsibility), and children' s factors (occupation planning, consideration of genetic factors, marriage and childbearing considerations, children' s mental health, etc.). The goals of parents include their children' s height reaching or exceeding the average level. Parents often attempt self-interventions such as diet, sleep, and exercise, but adherence issues arise during implementation. The primary channels for parents to obtain medical information include healthcare professionals, friends and family, as well as online media. Parents have a great need for information regarding professional knowledge on growth and development, selection of nutritional supplements, and non-pharmacological therapies.

Conclusion: This study uncovers the multifaceted reasons why parents of children with normal height seek medical attention in endocrine clinics to improve their children' s height, including socio-cultural factors, knowledge and information factors, and parental and children factors. Moreover, the existing information on non-medical interventions is insufficient to meet the specific needs of such families, which reminds us that it is significant to develop personalized non-medical interventions for them.

Keywords: Body height; Child health; Children of normal height; Medical staff; Reasons for seeking medical attention; Information needs; Intervention measures; Qualitative research

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Introduction

Short stature is diagnosed when a child's height falls below the 3rd percentile or -1.88 standard deviations of the mean height for healthy children of the same race, age, and sex. Research shows that the psychological and behavioral problems of children with short stature require attention from society, and parents' parenting knowledge and environment directly affect the mental health of children

with below-average height. In pediatric clinical practice, it has been observed that when some children do not meet the diagnostic criteria for short stature and their height falls within the P3–P50 range on the healthy child growth curve (described as "below average" or "relatively short"), most parents and children experience varying degrees of height anxiety and seek growth hormone intervention therapy at medical institutions. One study showed that nearly half of the children in a short stature clinic at a tertiary children' s hospital were actually of normal but below-average height. Data from a specialized children' s hospital in Beijing revealed that during winter and summer vacations, the number of visits to pediatric growth and development clinics surged, with a sharp increase in the number of children with normal height. This indicates that the desire for growth hormone treatment among children with normal height is a widespread issue. Clinical practice has found that children with normal height who appear relatively short due to genetic and pubertal development differences require completely different clinical management than pathological short stature. Current clinical practice faces challenges in distinguishing and managing these two types of height issues. The growing attention and concern about height among children with normal height and their parents increases the burden on medical resources and may lead to growth hormone abuse, which can cause premature closure of growth plates, prevent children from reaching their expected height, and even lead to conditions such as acromegaly. Therefore, this study aims to explore, through in-depth interviews, the reasons why parents of children with normal height seek care in endocrinology clinics and their needs for non-medical interventions, in order to provide targeted management recommendations for clinical practice, optimize medical resource allocation, and improve healthcare quality.

Methods

1.1 Participants This study used purposive sampling, with sample size determined based on the principle of information saturation. From April to July 2024, parents of children diagnosed with normal height by physicians at the Department of Endocrinology, Genetics and Metabolism of Beijing Children' s Hospital affiliated to Capital Medical University were selected as interview participants.

Inclusion criteria: (1) Children aged 0–18 years; (2) Visiting the outpatient clinic of the Department of Endocrinology, Genetics and Metabolism at Beijing Children' s Hospital affiliated to Capital Medical University; (3) Families of children diagnosed with normal height by endocrinology specialists.

Exclusion criteria: Children and families diagnosed with short stature in this or previous visits.

This study was approved by the Ethics Committee of Beijing Children's Hospital affiliated to Capital Medical University (approval number: [2024]-Y-049-D), and informed consent was signed with all participants.

1.2 Methods This study employed a descriptive qualitative research method, collecting data through semi-structured interviews to maximize sample heterogeneity in terms of child gender, age, and parental education level. The research methods and reporting followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines.

1.2.1 Interview Guide Development: The research team developed a preliminary interview guide based on literature review and research objectives, which was finalized after pilot interviews with three participants. The interview guide covered: (1) Reasons for parents seeking consultation at the endocrinology clinic; (2) Parents' expectations for treatment goals through clinical intervention and their reasons for achieving these goals; (3) Parents' understanding and information sources about growth hormone and growth delay, and how this information influences their decision-making; (4) Parents' information needs regarding growth and development and non-medical interventions.

1.2.2 Data Collection: One-on-one in-depth interviews were conducted by a clinical nurse with extensive qualitative research experience and skilled interview techniques. Before each interview, the researcher explained the study purpose and process, the reason for audio recording, and reiterated confidentiality and voluntary participation principles before obtaining informed consent. Participants completed a basic information questionnaire covering parental demographics (gender, age, ethnicity, education, marital status, religion) and child information (gender, age, height, weight, diagnosis, and medication history). Throughout the interviews, the researcher maintained a neutral, non-judgmental stance, avoiding any guidance or suggestion, while using active listening, confirmation, probing, and repetition techniques to flexibly adjust questions and ensure participants could freely express their views. Each family received one interview lasting 32–52 minutes. Families were coded A through X.

1.2.3 Data Analysis: Thematic framework analysis was used. Within 24 hours after each interview, recordings were transcribed verbatim by the researcher, who then reviewed the transcripts while listening to the audio recordings and clarified any uncertainties with participants. The researcher independently analyzed the data using content analysis: (1) Transcripts were read repeatedly and audio recordings reviewed to gain a holistic understanding; (2) Open coding was performed line-by-line using phrases or sentences, with recurrent statements identified; (3) Similar or related codes were categorized into sub-themes; (4) Connections between sub-themes were identified to form themes, iterating until no new themes emerged; (5) Themes were precisely described and named. Throughout the analysis, researchers continuously compared and discussed findings to ensure consistency.

Results

The study ultimately included 24 families (coded A–X). In four families (L, N, R, T), both parents participated, totaling 28 interviewees. Seventeen families

resided in Beijing, and seven were from outside Beijing. The age range of the 24 children was 4–14 years, including 6 girls and 18 boys. Height percentiles were distributed as: ≥P3–P10 (7 children), ≥P10–P25 (6 children), ≥P25–P50 (7 children), ≥P50–P75 (3 children), and >P75 (1 child). Fathers' heights ranged from 156–181 cm, and mothers' heights from 151–169 cm . Among the 28 participating parents, ages ranged from 30–53 years, including 10 males (35.7%) and 23 (82.1%) with university education or higher .

2.1 Reasons for Seeking Medical Attention 2.1.1 Socio-cultural Factors. (1) *Social Pressure and Expectations:* Social pressure primarily stems from deep concern about personal achievement and family expectations. Some parents clearly perceive societal emphasis and preset expectations regarding children' s height. Additionally, with continuous economic growth, parents observe an upward trend in average height, which intensifies their sense of urgency to "catch up" in this dimension. As one parent (K) stated: "Because nowadays the mainstream in society is that everyone is relatively tall. He' s already the second shortest in his class. Now in eighth grade, there' s only one boy shorter than him; all the others are very tall. Basically, about half are over 1.8 meters. Society' s overall height is just very high now. You know, if a child' s height is relatively low, their competitiveness might be somewhat weaker in the future."

Some parents expressed high expectations for their children' s height, which became a factor in seeking medical care, hoping they could achieve optimal status in all aspects. Driven by these expectations, even when children' s height was within normal range, parents might still be inclined to adopt growth hormone therapy to further increase height. As parent R noted: "I feel that if we can make him a bit taller through medication, of course we' d want to add some extra points, because we can sense it, though he can' t experience it himself yet. But he' ll face more unnecessary challenges because of his height when he grows up."

(2) *Educational Competitive Pressure:* China' s education sector is extremely competitive. Some parents believe there is a close association between height and academic performance or future career development. They tend to view height as a controllable variable and think that increasing their children' s height can secure better development opportunities. Consequently, such parents may be inclined to adopt extreme measures like growth hormone therapy to gain competitive advantages for their children.

(3) *Media Influence:* The widespread media promotion of tall stature as an aesthetic standard, coupled with societal preference for tall individuals, may profoundly influence parents' cognitive frameworks. Affected by this, some parents develop a belief that their children' s height is directly linked to happiness and future success. Based on such cognition, they hope to promote height growth to better align with social aesthetic orientations and expectations, thereby helping children integrate and adapt more smoothly to future social life. As parent U explained: "Nowadays, media everywhere

promotes tall stature as the aesthetic standard, and society indeed shows obvious preference for tall children. This information unconsciously influences our thinking. As parents, who doesn' t want their child to be happy and successful in the future? So sometimes we can' t help but think that if the child grows taller, their future path might be smoother and they can better adapt to various social expectations."

(4) *Interpersonal Relationships and Social Comparison:* In Chinese cultural contexts, interpersonal relationships and social comparison mechanisms play a pivotal role in family education. Specifically, some parents may be influenced by comparisons with relatives, friends, or neighbors, leading them to be inclined to use growth hormone injections to maintain and enhance family social reputation and status. Such parents often view height increase as a long-term investment that can directly enhance the family' s positive image in social circles and indirectly improve overall family social status and honor, thereby achieving social capital accumulation. As parent C stated: "For example, classmates, when friends go out together, everyone is taller than him." Parent P added: "Because first, I think from his personal image and confidence when he grows up, and also for employment, people will consider your personal image, right? For example, when finding a girlfriend, this situation definitely exists."

(5) *Cultural Values:* In Chinese cultural environments, height is widely recognized as an important parameter for evaluating individual social status and personal charisma. Although some children' s heights are within the medically normal range, some parents still hold the perception that their children are in a non-healthy state, accompanied by a psychological phenomenon of "stigma." This "stigma" stems from parents comparing their children' s height standards with social expectations or idealized height standards. Even when pathological short stature standards are not met, they still feel worried and uneasy, believing their children fail to conform to socially recognized body image standards. As parent R expressed: "Our child' s height is within normal range according to the doctor, but I just feel uneasy. I always can' t help comparing my child' s height with what society generally considers ideal. Although the child doesn' t really have any pathological short stature, I' m just worried that he' ll suffer in society and be looked down upon because of this height issue. I keep thinking how great it would be if the child could grow a bit taller and better fit that standard external image in everyone' s eyes."

2.1.2 Knowledge and Information Factors. (1) *Misunderstanding of Growth Hormone Effects:* Among some parent groups, there exists a widespread misconception that growth hormone is a universal treatment applicable to all children, rather than being strictly limited to children with specific growth disorders. This misunderstanding may result from insufficient understanding and inaccurate information about growth hormone mechanisms, indications, and potential risks. As parent P stated: "It doesn' t affect his lifespan. I think

if there are side effects like blood sugar issues, we now have control methods. With so many ways to control blood sugar, I think it' s acceptable. I can give my child injections."

(2) *Medical Institution and Physician Recommendations:* In medical practice, healthcare institutions or professional physicians may recommend growth hormone injections as a treatment to promote child growth and development based on clinical assessment and diagnosis. This recommendation is typically a professional decision made after confirming that the child has a growth disorder meeting growth hormone treatment indications and comprehensively considering treatment safety, efficacy, and potential risks. As parent B noted: "I think doctors are more authoritative, after all, they have data to support it. Self-media only makes general statements."Parent D added: "I don' t particularly believe online information. I trust recommendations from hospitals and doctors more, so if a doctor recommends it, I might be more inclined to follow it."

(3) *Blindly Optimistic Attitude Toward Medicine:* Some parents may hold the view that modern medical technology can efficiently and successfully solve height growth problems, yet they may fail to fully recognize potential treatment failure risks and various side effects. This cognitive tendency may stem from high expectations for modern medical advances but may overlook the complexity and uncertainty of medical interventions and individual differences in treatment responses. As parent X shared: "I' ve seen our friend here who indeed didn' t experience those adverse reactions they talked about after receiving injections."

2.1.3 Parental Factors. (1) *Parental Personal Emotions and Stress:* Parents may believe that height can be actively intervened and improved through medical means. Additionally, influenced by personal emotional states and psychological stress, some parents may tend to view providing growth hormone therapy for their children as a strategy to relieve their own anxiety and unease, attempting to alleviate the psychological burden brought by their children' s height issues. This behavioral motivation may reflect parents' complex psychological reactions and coping strategies when facing challenges in their children' s growth and development. As parent N1 stated: "Some social influences. From my own experiences, I feel there are some advantages to being tall. At least I hope he can reach an average state. I don' t want him to be too tall, just 1.7 meters would be fine. But actually, we predict he might not reach 1.7 meters. That' s why we want to intervene."

(2) *Herd Mentality:* Herd mentality among parents manifests as a phenomenon of being influenced by other parents, particularly when observing other parents choosing growth hormone therapy for their children. In this psychological state, some parents may fail to adequately evaluate the potential risks and side effects of growth hormone therapy while also neglecting their own children' s specific health conditions and treatment needs, potentially leading to irrational decision-making. Some

parents can recognize their own herd mentality tendency and show a more cautious attitude when facing growth hormone treatment choices, seeking more relevant information to make more informed and personalized decisions. As parent W explained: "Because we have a friend who got injections here, he told me about these things. He got growth hormone···"

(3) *Parental Responsibility:* From parents' perspective, providing optimal care and nurturing for their children is considered an inherent and unquestionable responsibility. This responsibility encompasses comprehensive attention to children' s physical health, psychological development, and social adaptation. Parents generally believe that ensuring children are in an "optimal" state in all physical and mental aspects is the core value and important mission of their parental role. This concept reflects parents' deep concern and relentless pursuit of their children' s comprehensive development. As parent J stated: "First, his mother is not tall, so she' s very worried about the child' s height, fearing genetic influence. On the other hand, the child is indeed relatively short among peers, being the shortest in the class in first grade. So we' re quite worried about growth and development and came for consultation. We don' t want to delay the child due to our own failure to fulfill our responsibility."

2.1.4 Children' s Factors. (1) *Career Planning:* Some adolescents have ideals of pursuing specific careers that often have particular requirements or preferences for individual height, such as athletes in competitive sports and models in the fashion industry. As parent R noted: "For example, I understand that certain industries or departments often have clear requirements for male height, and there are also certain expectations for female height. Such height thresholds undoubtedly impose unnecessary restrictions on children' s future career choices and development paths. Therefore, I hope we as parents can help him in this regard."

(2) *Consideration of Genetic Factors:* Parents worry that their children' s height is affected by family genetics and consider using growth hormone therapy to compensate. As parent P stated: "Under genetic influence, he might grow to 1.65 meters. Through injections, we want him to reach 1.7 meters."

(3) *Marriage and Reproduction Considerations:* Personal height affects competitiveness in marriage and reproduction in adulthood and has profound effects on offspring' s height. As parent N explained: "In the future, he will definitely be involved in life with a partner. In terms of mate selection, as a woman, I also hope to find someone taller."

(4) *Children' s Mental Health:* Being too short can affect children' s mental health, causing inferiority complexes and other problems. As parent U shared: "Now we feel that being short causes some inferiority."

2.2 Treatment Goals 2.2.1 Achieving Normal Height Standards: Some parents were satisfied if their children reached average height. As parent I stated: "At least reach the average height value." Parent L noted: "Because based on our genetics, his genetic height shouldn' t be too short, but I feel his growth rate is a bit slow."

2.2.2 Exceeding Average Height: Some parents, especially those with children above the 50th percentile, aimed for above-average height due to special employment needs (athletes, actors, etc.), increased competitiveness (mate selection, workplace), and expectations of surpassing peers. As parent S explained: "I understand that currently, in civil service recruitment, public institution examinations, and teacher recruitment, there are clear height requirements for candidates. For example, some positions set a 160 cm height threshold. My daughter' s future height is about 1.58–1.59 meters, which makes me deeply anxious."

2.3 Non-medical Interventions Non-medical interventions (diet, exercise, sleep management) for children with normal height are implemented by families but often encounter various problems:

2.3.1 Difficulty Sustaining Lifestyle Changes. (1) *Time Management:* Parents know that exercise and regular schedules benefit children' s growth, but heavy academic burdens make consistent implementation difficult. After homework, there is often insufficient time for exercise. As parent X stated: "We try to supervise, but they still have to do homework at night. The teacher won't agree if homework isn't completed. It's not guaranteed, because academic performance must also be maintained. It' s hard to persist."

(2) *Dietary Habits:* Adjusting children' s dietary habits poses challenges, especially when they resist healthy foods, and abandoning favorite snacks and fast food is particularly difficult. As parent P noted: "Getting my child to stop eating snacks and fast food is really not something that can be persisted in and changed."

2.3.2 Insufficient Family Support. In some families, while one parent actively supports non-medical interventions, the other, due to being busy or not considering it important, fails to cooperate, leading to poor implementation. As parent W stated: "If either his father or I can persist. But if it' s the grandparents, it definitely won' t work." Parent V added: "My supervision is useless; he won' t listen."

2.3.3 Individual Differences Among Children. Children have varying acceptance of non-medical interventions. Differences in interest in sports activities affect implementation effectiveness, and younger children have more difficulty cooperating due to not understanding the importance. As parent N explained: "Our biggest reason is that he' s not obedient. There are also communication issues. We' re trying to cultivate or change his lifestyle habits." Parent M stated:

"For exercise, my child would rather sit with a book or lie down reading. He doesn' t like sports."

2.3.4 Information Insufficiency. Due to insufficient information, parents struggle to effectively implement non-medical interventions. They have diverse and detailed needs for knowledge about child growth, including: (1) *Age-specific information support:* Whether there is corresponding targeted information for different age groups; (2) *Nutritional supplement selection:* Whether additional nutrients are needed during growth and how to choose safe, effective supplements; (3) *Physical therapies:* Some parents show strong interest in non-pharmacological therapies like massage and physical therapy, hoping to understand whether these can positively affect growth and how to implement them; (4) *Detailed intervention plans from doctors:* Parents hope for more detailed guidance on diet and exercise, such as how much exercise per week and what diet is recommended. As parent K stated: "Because there' s too much information online. As an ordinary person without professional knowledge, I have no way to filter which information is correct. When I see a doctor, the doctor provides one-on-one, targeted plans for my child' s situation. I trust this method more. I also search online for many things, but I only use it as reference. Ultimately, I need confirmation from a doctor."

Discussion

As society pays increasing attention to height requirements, some parents who perceive their children as "short" choose to visit endocrinology clinics seeking growth hormone therapy to meet their expectations for greater height. However, these children do not meet the diagnostic criteria for short stature and face risks of overtreatment. Growth hormone abuse can lead to premature closure of growth plates and even cause acromegaly. Therefore, there is an urgent need for medical professionals to correctly guide families of children with below-average height to face height development issues properly, analyze the reasons for children with normal height seeking medical care during clinical diagnosis and treatment, and provide non-medical interventions based on needs.

This qualitative interview analysis of reasons for children with normal height visiting endocrinology departments and their non-medical intervention needs found that main reasons include social pressure and expectations, educational competitive pressure, media influence, and misunderstanding of growth hormone effects. This reveals the importance of social and cultural factors in parental decision-making. Additionally, parents typically attempt self-interventions such as diet, sleep, and exercise, but adherence issues during implementation indicate that parents may lack sustainability and systematicity in executing interventions. Regarding non-medical intervention needs, parents have substantial demands for professional knowledge about growth and development, selection of nutritional supplements, and non-pharmacological therapies, suggesting that existing non-medical intervention information fails to fully meet the specific needs of these families. Personalized non-medical intervention information in pediatrics still

needs further advancement.

3.1 Multidimensional Characteristics of Reasons for Normal-Height Children Visiting Endocrinology Clinics The analysis of multidimensional reasons reveals that in the Chinese social context, the motivations for children with normal height to visit endocrinology clinics are complex and diverse, involving social, cultural, knowledge and information, parental, and child factors. Specifically, parents generally view height as a marker of success and advantage, believing that increasing their children' s height can enhance social competitiveness and future achievements. With economic development and rising average height trends, some parents feel unprecedented urgency, viewing height as a controllable factor and expecting interventions to promote height growth to gain advantages in educational competition. Additionally, the guiding role of media and public opinion cannot be ignored, as they often directly link height with happiness and success, prompting parents to pursue height that meets social aesthetic standards and expectations to help children better integrate into society.

Cultural concepts significantly influence individual and family decision-making. In Chinese culture, there is a deeply rooted notion that "taller is better," with "tall, rich, and handsome" being used to describe successful men. In social contexts, adjectives like "short" and "stunted" used to describe shorter stature often carry negative connotations, reflecting societal bias and stereotypes about height. Influenced by such cultural concepts, even when children' s height is in the healthy range, parents may still express strong and urgent desires for height increase to doctors due to not meeting personal ideal standards, potentially affecting medical decisions for children with normal height.

Currently, recombinant growth hormone is approved domestically and internationally for indications including chronic renal insufficiency, Turner syndrome, Prader-Willi syndrome, small for gestational age, idiopathic short stature, growth hormone deficiency, Noonan syndrome, and other causes of short stature. Misunderstanding of growth hormone effects leads some parents to be inclined to adopt growth hormone therapy without adequate medical evaluation. Parents' high trust in medical institutions and doctors, combined with lack of understanding about growth hormone side effects and overly optimistic expectations about treatment effects, collectively drive this decision. Additionally, personal emotions and stress serve as driving factors, with parents attempting to alleviate their own anxiety through growth hormone therapy. Notably, herd mentality also plays an important role, causing some parents to ignore the risks, side effects, and individual differences of growth hormone therapy, leading to irrational choices. From parents' perspective, ensuring children are in an "optimal" state is an important component of their parenting responsibility. Considering height' s long-term impact on children' s development, including career planning and marriage choices, as well as potential inferiority and lack of confidence caused by insufficient height, parents' concern about height

issues is understandable. In summary, the reasons for children with normal height visiting endocrinology clinics present multidimensional characteristics involving social, cultural, family, and individual levels. Understanding and addressing these complex factors is important for optimizing child growth and development management and promoting healthy development.

3.2 Diversity of Treatment Goals for Normal-Height Children Visiting Endocrinology Clinics This study found that parents of children with normal height also show diversity in treatment goals. Some parents are satisfied with their children reaching normal height, while others pursue above-average height. To achieve goals, parents choose between health lifestyle interventions or growth hormone therapeutic interventions, reflecting flexibility and personalization in treatment choices. Known health interventions in diet, sleep, and exercise can promote height growth in children and adolescents. However, this study found that some families face poor compliance and effectiveness when implementing family self-interventions. The main reasons include: First, healthy lifestyle changes, such as time management and dietary habits, are difficult to maintain long-term, posing challenges for both parents and children. Insufficient family support, particularly when all members cannot participate together, leads to poor implementation of health measures. Second, significant individual differences among children—such as young age, dislike of exercise, or unwillingness to comply with parents' requirements—increase the difficulty of implementing healthy lifestyles. Third, medical institutions and doctors struggle to provide detailed, targeted family health intervention plans for each child and family within limited time, making information insufficiency another barrier. These challenges in family self-interventions prompt some parents to choose growth hormone therapy. This suggests that for parents of children with normal height, medical professionals should clarify growth hormone indications (growth hormone deficiency, idiopathic short stature, precocious puberty, etc.) and potential risks (such as allergies, intracranial hypertension, hypothyroidism, glucose and lipid metabolism disorders, and other adverse reactions), and provide health education about growth and development to guide them properly and improve their compliance with active health interventions.

3.3 Non-Medical Intervention Needs for Normal-Height Children Visiting Endocrinology Clinics Regarding non-medical intervention needs, parents have substantial demands for professional knowledge about growth and development, selection of nutritional supplements, and non-pharmacological therapies. However, shortages of pediatric healthcare professionals and lack of parental awareness hinder pediatric health education efforts. Personalized health education in pediatrics still needs further advancement. Based on the findings, future school health work should attach importance to growth and development issues among children and adolescents, incorporate more height-related education and screening in child healthcare, develop targeted health education materials, provide professional doctor consultation services,

and disseminate scientific health knowledge through online platforms to provide more resource support for parents.

Limitations

This study has the following limitations: It only selected families visiting one tertiary children' s hospital (Beijing Children' s Hospital) as participants, which cannot fully reflect the medical-seeking reasons and non-medical intervention needs of families of children with normal height nationwide, limiting generalizability. Future research could expand participant heterogeneity to make the study population more representative, thereby extending the influence of findings and further guiding clinical practice.

Conclusion

This study reveals multifaceted reasons for children with normal height visiting endocrinology clinics, involving socio-cultural, parental, and child factors. It also clarifies parents' strong personalized needs for non-medical interventions, such as professional knowledge about growth and development, selection of nutritional supplements, and non-pharmacological therapies. Based on these findings, more targeted non-medical interventions can be developed in the future to promote healthy child development and optimize the personalization and effectiveness of health education content.

Author Contributions

LYU Juan was responsible for interview data collection and drafting the manuscript. LI Yuchuan proposed the research idea, was responsible for final version revision, and is accountable for the work. CAI Siyu designed the research protocol, was responsible for data analysis, and revised the manuscript. WANG Chen created figures and tables and revised the manuscript.

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Note: Figure translations are in progress. See original paper for figures.