

Awareness of Myopia Associated Complications and Perspectives on Myopia Management Among Parents of Children with Myopia in France and the UK

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Purpose: Myopia is a global public health issue, estimated to affect 50% of the world's population by 2050. Evidence suggests that reducing myopia by one diopter decreases the risk of myopia-related retinal complications by 40%. Despite the availability of several myopia control methods, their clinical adoption remains limited. To improve their uptake, enhancing parental awareness of myopia control is crucial. This study explores parental awareness of myopia-related complications, control interventions and their perspectives on myopia management in France and the UK.

Patient and Methods: A structured survey was conducted among 200 self-selected parents of children with myopia (100 France, 100 UK), via the TOM app, an online platform for tracking medication adherence. The survey assessed parental understanding of myopia complications, awareness of control strategies, perspectives on management, and financial concerns.

Results: 74% of French and 88% of the UK parents reported being aware of at least one myopia-related long-term complication, with cataract the most recognized in France (66%) and glaucoma in the UK (76%). 50% of French and 43% of UK parents were unsure or unaware that myopia progression could be slowed. UK parents reported higher adoption rates of myopia control methods, including orthokeratology (47% France, 68% UK), atropine (46% France, 63% UK), and red-light therapy (44% France, 67% UK). Financial burden was a significant concern, with 59% of French and 52% of UK parents feeling strained by costs, particularly for glasses, contact lenses, and specialized treatments. Parents of children with faster myopia progression (>-1 dioptres/year) were more likely to report financial stress ($p < 0.001$).

Conclusion: While most parents are aware of myopia complications, notable gaps exist in understanding control options. UK parents adopted control methods more frequently than French parents. Financial burden remains a significant concern, emphasizing the need for enhanced parental education and affordable access to myopia control.

Plain Language Summary:

What is this summary about?

This is a summary about a study on parents' awareness of the problems related to myopia (short-sightedness) progression in children and the existing ways to manage these problems in France and the UK.

What happened in this study?

200 parents of children with myopia (100 in France and 100 in the UK) were asked to complete an online questionnaire through the TOM app. Participants answered questions about possible problems myopia can cause, available treatments, barriers to care, and how myopia affects their children's daily lives.

What were the results?

Awareness of problems: Most participants knew about at least one possible problem that myopia progression can cause. Cataracts were most recognized in France, while it was glaucoma in the UK.

Awareness of current myopia management options: About half of participants did not know that childhood myopia progression can be slowed. Parents who attended regular eye exams were more aware of treatment options. Spectacle lenses were the most used option.

Barriers to care: Cost, limited access, and lack of information were the main barriers.

Impact on children: Most children struggled to see the board in class. About half of them also had headaches or struggled to complete tasks.

What do the results mean?

These findings show important gaps in parental awareness and highlight the need for better education on slowing childhood myopia progression, improving access to affordable treatment options, and increasing the role of eye care professionals in informing families.

Keywords: myopia, myopia control, parental awareness, financial burden, perception

Introduction

Myopia has become a pressing global public health issue, with its prevalence increasing at an unprecedented rate across all regions of the world.¹ Projections indicate that by 2050, 30–50% of the European population^{1,2} could be affected by myopia, while in East Asia, the situation is expected to be even more alarming, with an estimated 84% of the population being affected.³ Myopia is associated with complications such as retinal detachment, glaucoma, and myopic macular degeneration.^{4,5} Myopic macular degeneration is one of the leading causes of vision impairment and blindness in the working-age population.^{2,6–9} If left unchecked, myopia could lead to a seven-fold increase in myopia-related vision loss by 2050 compared to today.¹ Therefore, implementing effective myopia prevention and myopia control strategies is urgent to stem the tide of this rising epidemic.

Myopia control strategies have evolved over the years to include optical (multifocal spectacles), pharmacological (low-dose atropine), light-based (red-light) and behavioral interventions (increased outdoor time, reduced screen time).¹⁰ While these strategies show promise, their effectiveness varies across populations and accessibility differs by region.^{11–13} Furthermore, recent reports have raised concerns about the long-term safety of red-light therapy, including risks of retinal phototoxicity¹⁴ and a potential rebound effect.¹⁵

Previous studies suggest that the involvement of parents is vital in achieving meaningful results in myopia control interventions.¹⁶ Parents play a multifaceted role in managing childhood myopia by encouraging outdoor activities, reducing screen time, and ensuring timely access to eye care services. Studies have shown that parental awareness and engagement in myopia management significantly reduce the risk of progression in children.^{16,17}

Parental awareness of childhood myopia has been extensively studied in Asia but remains under-researched in Europe. A comparative study exploring the level of awareness of myopia-associated complications among parents in the United Kingdom (UK) and Hong Kong reported that parents in the UK were significantly less aware of myopia-associated risks than those in Hong Kong.¹⁸ Similarly, studies in Ireland and Spain revealed a casual parental attitude toward myopia's health risks, underscoring the need for better education on its management.^{19,20} In addition, health-care pathways for pediatric eye care differ between European countries, which may shape parental experiences and awareness. In the UK, optometrists typically act as the first point of contact, providing examinations, myopia management, and referrals.²¹ By contrast, in France, optometry is not formally recognized, and parents usually rely on ophthalmologists for eye examinations and prescriptions, which may be harder to access.²¹ Given that healthcare pathways differ between countries, it is essential to consider how system-level and professional role variations may shape parental experiences and access to care.

The aim of this paper is to assess parental awareness of myopia-related complications, myopia control methods and parents' perspectives on myopia management, focusing on a comparative analysis of responses between parents in France and in the UK.

Materials and Methods

Study Design

The questionnaire was developed internally by the research team, incorporating insights from clinicians experienced in pediatric ophthalmology and myopia management to ensure clinical and contextual relevance. Content validity was established through this expert review process. As the instrument was intended to be an exploratory–descriptive survey probing parental perceptions and experiences, it was not subjected to formal psychometric validation (such as scale

reliability testing or factor analysis).²² This approach aligns with methodological standards stating that surveys designed for local descriptive insight, rather than standardized measurement, do not require full-scale validation.²² The survey was designed in the TOM Medication app, a medication reminder platform that helps patients adhere to therapy.²³

Participant Selection and Recruitment

Parents were invited to participate in the study through an open call in the TOM app. Parents of at least one child or adolescent (ages 0–18) with myopia who experienced myopia progression within the past year were eligible to participate. Myopia progression was defined as any annual increase in near-sightedness exceeding -0.07 diopters (D), consistent with evidence from large-scale cohort studies showing that even small annual changes can represent measurable progression in untreated populations.²⁴ The survey was distributed digitally through the TOM app between August 7 and September 5, 2024. To enhance engagement, a financial incentive of 20 CHF was provided upon study completion.

While recruiting parents via a research panel facilitated access to a defined sample across two countries, it may introduce selection bias, as panel participants could differ systematically from the broader population of parents (eg, in health awareness, education, or digital access). No a priori sample size or power calculation was performed; all available respondents at survey closure were included ($N = 200$; 100 UK, 100 France). The achieved sample size is consistent with prior parental myopia surveys.^{19,25} By using the standard simple formula, according to methodological literature, descriptive surveys typically need about 100–200 participants to achieve acceptable precision.²⁶ The sample provides a 95% confidence interval precision of approximately ± 5 percentage points overall and ± 10 percentage points within each country for proportions near 50%, which is adequate for exploratory analysis.²⁷

Ethical Considerations

Participants were informed about the purpose of the study, filled it out on a voluntary basis and provided consent before completing the survey in the TOM app. The study was compiled according to ethical research standards, utilizing anonymous responses from the TOM app users. As the TOM app technology does not require user registration or personal data entry (eg, name or email), participants remained anonymous throughout the process.²⁸ The study complies with the Declaration of Helsinki.²⁹ In the UK, this study is not classified as research and does not need HRA or National Health Services (NHS) Research Ethics Committee (REC) approval, as decided by the NHS decision tool ([Appendix B](#)).³⁰ Under the Jarde Law and the Public Health Code, article L1121-1-1 in France, it is classified as non-interventional and does not require the national French agency for the security of medications (ANSM) authorization.^{31,32} Additionally, we based our approach on a precedent set by a peer-reviewed French study that employed a non-interventional, anonymized survey design, which did not require ethics committee approval. This provided further justification for proceeding with our survey under the same framework.³³

Study Instrument

The questionnaire comprising of 20 questions across six themes was used to gather information including: demographic and clinical characteristics (including diagnostic history and progression), awareness of myopia-related consequences (covering potential complications and intervention possibilities), management experiences (treatments and challenges), impact on daily activities, treatment preferences and concerns, and engagement with support resources.

The questionnaire was structured with 11 single-choice questions, 8 multiple-choice questions, one satisfaction rating question, and two interlinked questions addressing financial burden and its causes. The UK and France questionnaires were largely identical, but a small number of response options differed by country; for example, the “Food Supplements” and “Treatment Efficacy” options were included only in the French version and not offered to UK respondents. The complete questionnaire is provided in [Appendix A](#).

Statistical Analysis

Statistical analyses were performed using SPSS software (version 30.0; IBM SPSS Statistics, IBM Corp). Continuous variables were summarized as means and standard deviations (SD), while categorical variables were summarized as percentages (%) and proportions (n). Percentages for multiple-response questions were calculated relative to the total

sample. Group differences in continuous variables (eg, age at diagnosis) were assessed using unpaired *t*-tests, while categorical variables were compared using chi-squared tests. Logistic regression models examined the impact of independent variables on outcomes. Logistic regression was performed on the combined dataset of parents from France (*n* = 100) and the UK (*n* = 100), with country included as a covariate; the total sample size (*n* = 200) was sufficient to meet standard recommendations for logistic regression (≥ 10 events per predictor variable).³⁴ Statistical significance was set at *p* < 0.05.

Results

The final study cohort consisted of 200 parents of children diagnosed with progressive myopia, comprising 100 parents residing in France and 100 parents residing in the UK. The mean current age of French children was 12.99 ± 4.46 years (Supplementary Table 1), and the mean age at diagnosis was 7.30 ± 3.49 years (Supplementary Table 2). In the UK cohort, the mean current age was 8.20 years ± 4.28 (range 0–18 years) (Supplementary Table 1), with the mean age at diagnosis of 5.07 ± 3.15 years (Supplementary Table 2). Gender distribution in the French cohort was 53% (*n*=53/100) female and 47% (*n*=47/100) male, while the UK cohort was 47% (*n*= 47/100) female, 51% (*n*=51/100) male and 2% (*n*=2/100) undisclosed. Independent *t*-test showed significant differences in age at diagnosis of myopic children between France and the UK (*t*=4.738, *p*<0.001), wherein UK children were diagnosed at a younger age than French children (Supplementary Table 9).

A similar trend in the hereditary nature of myopia was observed in both countries, where most parents reported one parent with myopia (68%, *n*= 69/100, France; 54%, *n*= 54/100, UK), while a smaller percentage reported that both parents were affected by myopia (13%, *n*=13/100, France; 16% *n*=16/100, UK). The process by which myopia was first diagnosed was similar in both countries. The most common pathway was parents noticing symptoms and scheduling an eye care appointment (56%, *n*=56/100, France; 51% *n*=51/100, UK), followed by detection during routine eye examinations (27%, *n*=27/100, France; 31%, *n*=31/100, UK) and school vision screenings led to fewer diagnoses (17%, *n*=17/100, France; 13%, *n*=13/100, UK). In the UK, childhood community health screenings identified the smallest proportion of cases (5%, *n*=5/100).

Parental practices in monitoring myopia progression, as reflected by the frequency of eye examinations (Table 1), revealed notable differences between the two countries. In France, a significantly lower proportion of parents (7%, *n*=7/100) took their child for an eye checkup more than twice a year as compared to the UK parents ($\chi^2 = 68.170$; *p* <0.01).

53% (*n*=53/100) of French parents reported that, in the past year, their child’s myopia progression was less than –0.5D, while 43% (*n*=43/100) of UK parents reported a myopia progression of –0.5D to –1D.

Awareness of Myopia-Associated Risks and Myopia Control Interventions

With regards to the parental awareness of myopia-associated complications and risks, including glaucoma, retinal detachment, retinal tearing, myopic maculopathy, and cataracts 74% (*n*=74/100) of the French parents and 88% (*n*=88/100) of the UK parents reported being aware of at least one of these risks (Supplementary Table 3). Among French parents, cataract was the most recognized risk (66% (*n*=66/100), followed by retinal detachment (58%, *n*=58/100). In contrast, among UK parents, glaucoma was the most recognized risk (76%, *n*=76/100), followed by cataracts (71%, *n*=71/100). (Figure 1 and Supplementary Table 4).

Table 1 Frequency of Children’s Eye Checkups Reported by Parents in France and the UK

Frequency of Eye Checkups	France	UK ^a
More than twice a year	7%	47%
Twice a year	14%	29%
Once a year	66%	22%
Every two years	12%	1%
Less than every two years	0%	1%
Every three years	1%	0%

Note: ^aUK: United Kingdom.

With regards to the parental awareness of myopia control and methods, 50% (n=50/100) of French parents and 43% (n=43/100) of UK parents reported that they were unsure or unaware that paediatric myopia progression could be delayed ([Supplementary Figure 1](#)). Multinomial logistic regression demonstrated a significant association between eye examination frequency and parental awareness that myopia progression can be slowed (Cox & Snell $R^2 = 0.152$, $p < 0.001$). Parents who scheduled more frequent eye examinations were significantly more likely to be aware that myopia control is possible. For example, those attending more than twice a year had markedly higher odds of awareness ($OR = 5.06 \times 10^{-8}$, 95% CI: $1.05 \times 10^{-8} - 2.43 \times 10^{-7}$, $p < 0.001$), with similar significant associations for twice a year ($OR = 2.22 \times 10^{-8}$, 95% CI: $4.89 \times 10^{-9} - 1.01 \times 10^{-7}$, $p < 0.001$) and once a year ($OR = 1.61 \times 10^{-8}$, 95% CI: $3.96 \times 10^{-9} - 6.53 \times 10^{-8}$, $p < 0.001$) compared with less frequent visits ([Supplementary Table 6](#)).

To explore parental practices for delaying progressive myopia, parents were asked about which myopia control options they used ([Table 2](#)). Most parents (79%, n=79/100, France; 74%, n=74/100, UK) reported using at least one myopia control option. Myopia control spectacle lenses were the most used in both cohorts (75%, n=75/100, France; 89%, n=89/100, UK). UK parents utilized significantly more interventions overall compared to French parents, particularly for orthokeratology (Ortho-K) (47%, n=47/100, France vs 68%, n=68/100, UK), atropine (46%, n=46/100, France; 63%, n=63/100, UK), and red-light therapy (44%, n=44/100, France; 67%, n=67/100, UK). The apparent difference in the “Food Supplements” category reflects a survey design difference, as this option was not included in the UK questionnaire.

Impact on Children’s Life

To evaluate the impact of progressive myopia on children’s daily lives and the associated parental concerns, parents were asked about the challenges their children face due to myopia ([Table 3](#)). The most frequent reported myopia-related difficulty was seeing the board in the classroom (81%, n=81/100, France; 70%, n=70/100, UK). Additional challenges included struggling with reading or completing homework (37%, n=37/100, France; 51%, n=51/100, UK) and frequent headaches or eye strain (56%, n=56/100, France; 43%, n=43/100, UK).

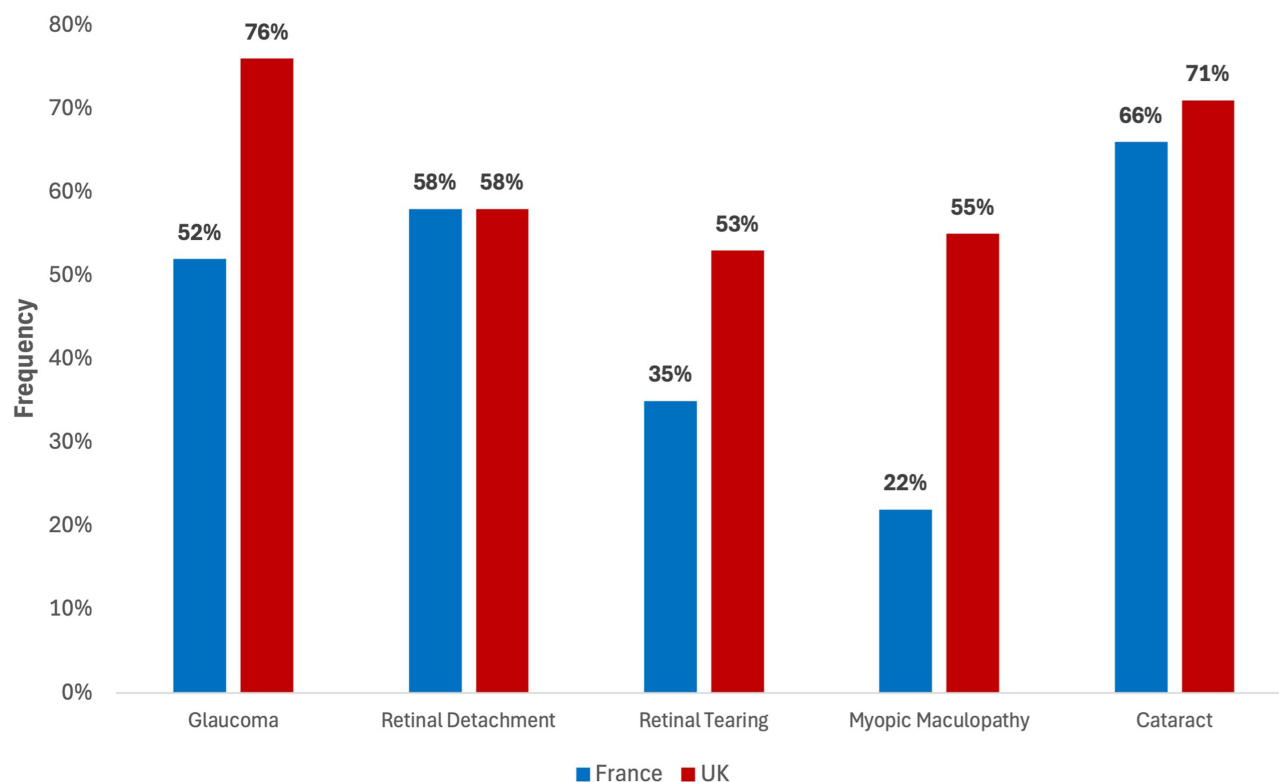


Figure 1 Frequency of awareness of myopia-related risks among parents in France and the UK.

Table 2 Parent-Reported Adoption of Myopia Control Options in Their Children

Myopia Control Options	France (%)	UK (%)
Orthokeratology	47	68
Myopia Contact Lenses	58	78
Myopia Control Spectacle Lenses	75	89
Atropine	46	63
Red light Therapy	44	67
Lifestyle changes	71	85
Food supplements ^b	53	0
None	15	16
I am not using this option	6	10

Notes: ^bThe Food supplement option was included only in the French survey and was not offered to UK respondents; Therefore, the between-country comparison is not meaningful.

Table 3 Parental Opinion on Challenges Experienced by Children Due to Myopia (Parents Could Choose More Than One Option)

Challenge	France (%)	UK ^c (%)
Difficulty seeing the board in the classroom	81	70
Struggling with reading, writing and doing homework	37	51
Trouble participating in sports, physical and outdoor activities	22	51
Frequent headaches or eye strain	56	43
Challenges with using electronic devices (eg tablets, computers)	25	35
Problems with night vision	21	21
Difficulty recognizing faces or objects at a distance	27	42
Other	1	4

Note: ^cUK: United Kingdom.

We also investigated the challenges parents encounter in accessing eye care services for their children. (Table 4). Sixty six percent (n=66/100) of French and 65% (n=65/100) of UK parents reported challenges in accessing eye care services (Table 4). The main challenges were long waiting times (58%, n=58/100, France; 42%, n=42/100, UK) and high costs (10%, n=10/100, France; 43%, n=43/100, UK). Chi-square analysis revealed significant differences in challenges to eye care services between the two countries ($\chi^2=45.315$; $p<0.01$) (Supplementary Table 5).

In relation to the question on whether managing progressive myopia in their children posed a financial burden to the family (Figure 2), over half of parents in both countries reported that myopia management was a financial burden to the family (59%, n=59/100, France; 52%, n=52/100, UK). The burden was primarily driven by the cost of prescription glasses and contact lenses (72.9%, n=43/59, France; 69.2% n=36/52, UK), the cost of regular eye exams (44.1%, n=26/59, France; 73.1%, n=38/52, UK), and special treatments related expenses (44.1%, n=26/59, France; 67.3% n=35/52, UK).

Table 4 Main Challenges Experienced by Parents in Accessing Eye Care Services in France and the UK

Challenge	France (%)	UK ^d (%)
Because of long waiting times for appointments	58	42
Due to the high costs of eye care services	10	43
Because of no nearby eye care professionals	5	6
Because of lack of information	4	20
I have not faced any challenges	34	35

Note: ^dUK: United Kingdom.

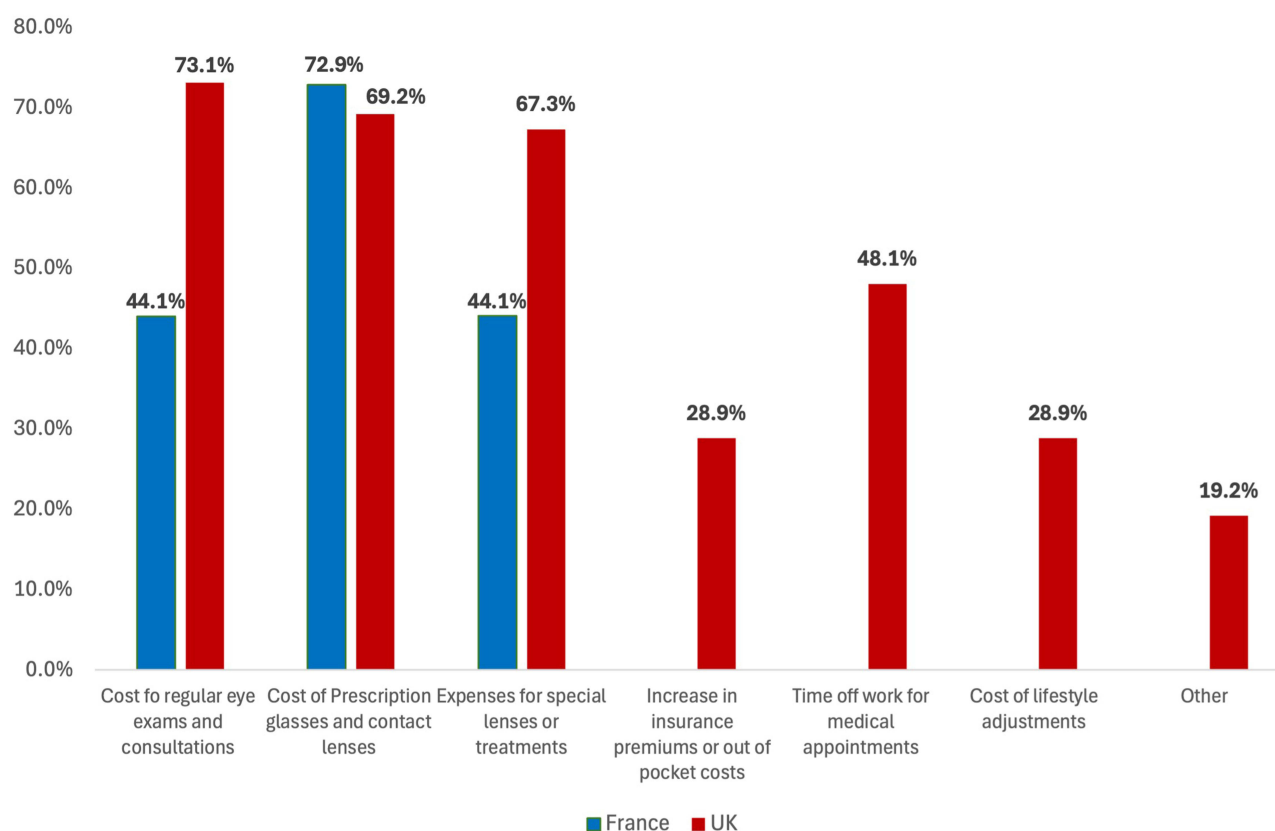


Figure 2 Main reasons why parents consider myopia as a financial burden.

A considerable proportion of parents from the UK also reported time off work for their children's eye care appointments (48.1% $n=25/52$), the cost of lifestyle adjustments (28.8%, $n=15/52$), and increased insurance premiums (28.8%, $n=15/52$).

Logistic regression analysis demonstrated that myopia progression of less than $-0.5D$ was associated with parents perceiving their child's myopia a financial burden (OR = 3.460, 95% CI: 1.759–6.805, $p < 0.001$), as detailed in [Supplementary Table 7](#). The likelihood of reporting myopia as a financial burden further increased among parents who reported a myopia progression of -0.5 to -1 dioptres (OR = 5.013, 95% CI: 1.524–16.495, $p = 0.008$) ([Supplementary Table 7](#)).

Subsequently, we inquired parents' willingness to use a new pharmacological treatment for progressive myopia ([Figure 3](#)), their views on access to new treatments ([Figure 4](#)), desired improvements ([Table 5](#)), and factors influencing treatment choice ([Supplementary Table 8](#)). A considerable proportion of parents in both countries indicated they would very likely try a new pharmacological treatment to delay their child's myopia (41%, $n=41/100$, France; 61%, $n=61/100$, UK).

A considerably higher proportion of parents in the UK (71%, $n=71/100$) reported that having a treatment to delay the progression of myopia is "very important" as compared to parents in France (47%, $n=47/100$). A sizeable proportion of parents in both countries considered delaying myopia progression to be "important" (40%, $n=40/100$, France; 24%, $n=24/100$, UK) ([Figure 3](#)). In relation to the acceptability of new treatment options, a slight majority of UK parents (53%, $n=53/100$) desire them compared to French parents (47%, $n=47/100$). Affordability of myopia management was a major concern for parents in both countries, but particularly in the UK (65%, $n=65/100$, UK vs 42%, $n=42/100$, France). Additional concerns around access to eye care services for children included parents hoping for easier access to treatment (45%, $n=45/100$, France; 51%, $n=51/100$, UK) and increased availability of eye care professionals (45%, $n=45/100$, France; 38%, $n=38/100$, UK). More information for caregivers was reported as a desired change by 33% ($n=33/100$) of French parents and 44% ($n=44/100$) of UK parents ([Table 5](#)).

With regards to the question on what factors would influence their decision on choosing a new treatment for their child's progressive myopia, parents from both countries considered recommendations from an eye care professional (56%, $n=56/100$,

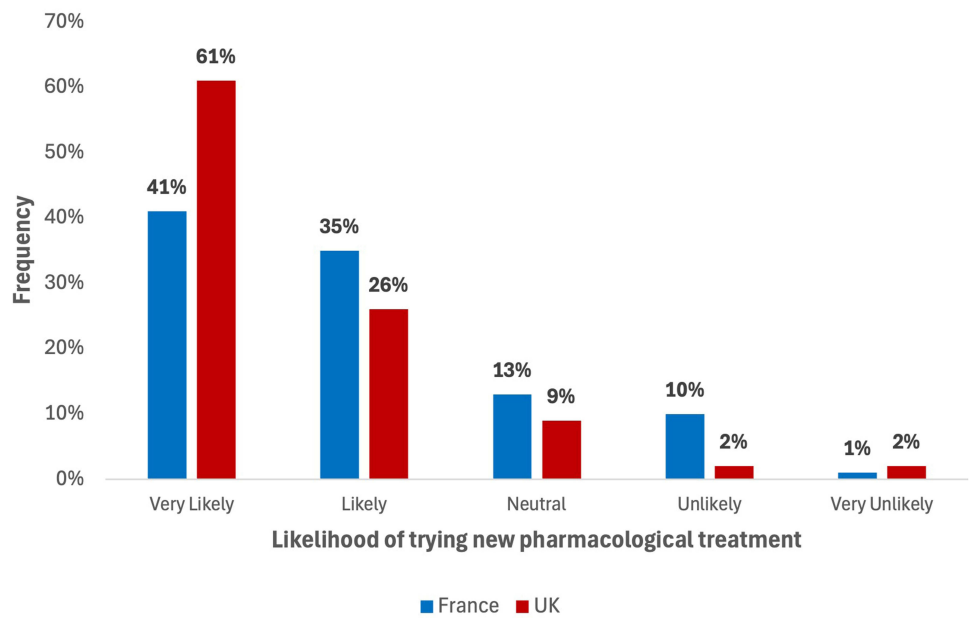


Figure 3 Likelihood of parents to try a new pharmacological treatment that delays their child's progressive myopia.

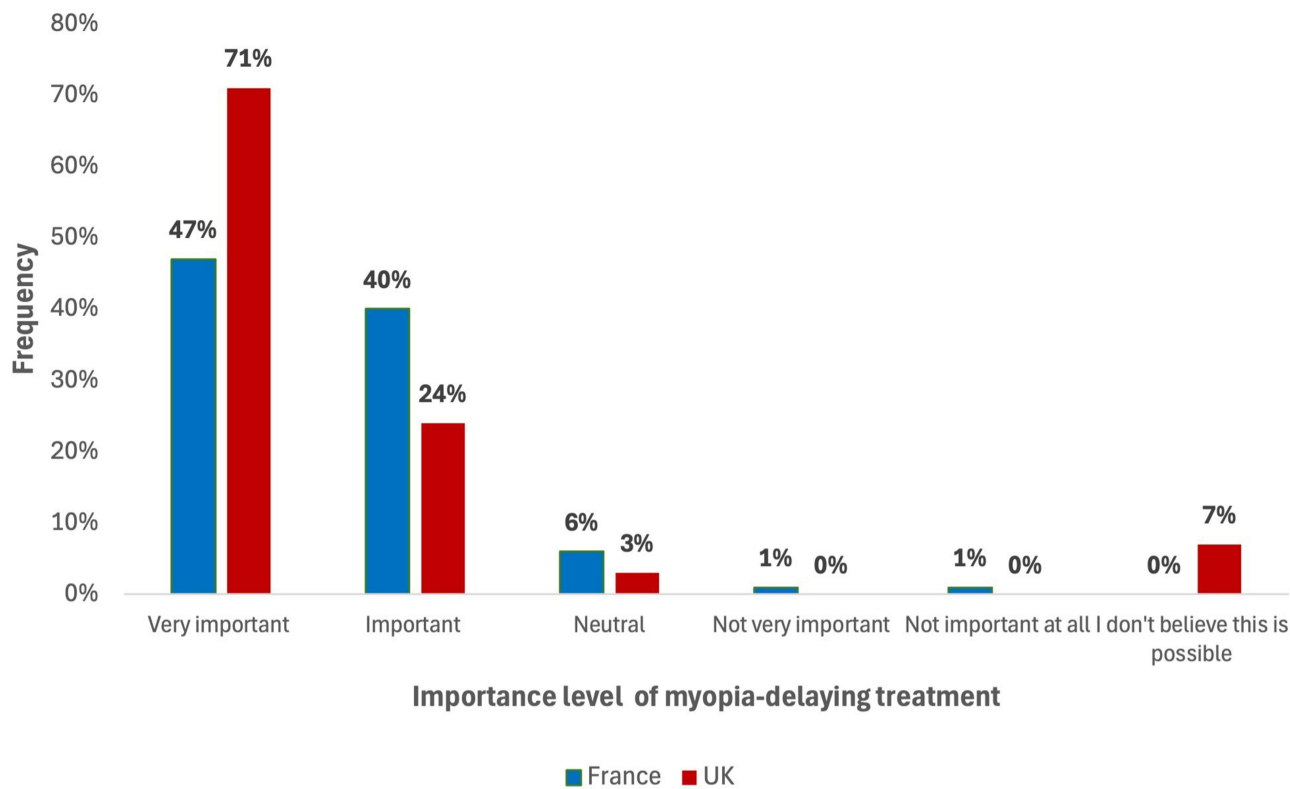


Figure 4 Parents' perceived importance of delaying myopia progression.

France; 67%, n=67/100, UK) as the key factor followed by treatment efficacy (65%, n=65/100, France), and affordability (39%, n=39/100, France; 61%, n=61/100, UK). The “Treatment efficacy” option was not included in the UK survey. Affordability was a more significant concern for UK parents as compared to French parents ([Supplementary Table 8](#)).

Table 5 Parents' Preferences on Accepting New Treatments to Delay Myopia Progression

Change Preferences	France (%)	UK ^e (%)
New treatment options	47	53
More affordable treatment options	42	65
Easier access to treatments	45	51
Better access to eye care professionals	45	38
More information and resources for caregivers and children	33	44
Other	0	1

Note: ^eUK: United Kingdom.

Discussion

This study examined and compared parental awareness and understanding of myopia complications and control strategies between UK and French parents, analysed their awareness levels, attitudes, and decision-making factors regarding myopia management for their children. This study also sought to explore the challenges parents encounter while navigating their child's myopia management. We found notable differences in myopia-related complications awareness between French and UK parents. Most of the UK parents recognized glaucoma as a major myopia-related complication, while the majority of French parents recognised cataracts. These differences likely reflect variations in public health communication initiatives in each country.³⁵ Peregrina et al reported low awareness among Spanish parents, with only 18.8% recognizing cataracts and only 14.6% aware of glaucoma as a long-term risk.¹⁹ In our study, the awareness level among UK parents (76%) was higher than the percentage reported by Dias et al in 2018 (44%).¹⁸ It is worth noting that the knowledge of certain myopia-related complications, such as myopic maculopathy, a leading cause of blindness in the working-age population in Europe, remained low in our study.⁷

In our study, a considerable proportion of parents reported that they were unaware that myopia progression can be delayed. This lack of awareness may limit the uptake of myopia control interventions. Several previous studies have highlighted that parental knowledge is key to the uptake of preventive measures.^{20,36} Understanding how parents access information about myopia management is equally important. Most parents in our cohort indicated that an eye care professional would positively influence their decision to pursue new treatment options. Furthermore, the frequency of eye care visits was significantly linked to greater awareness of myopia-delaying options, underscoring the role of eye care professionals (ECPs) in guiding parental decisions. However, recent research by Coverdale et al found that although UK-based ECPs were confident in their myopia management knowledge, many felt they needed more support in decision-making, particularly due to financial barriers and discomfort discussing treatment costs with parents.³⁷ This highlights the need for targeted educational campaigns, clearer guidelines for ECPs, and treatment cost reimbursements. Publishing guidelines and recommendations as new interventions and mechanisms emerge can help clinicians become confident in providing updated information to patients as well as clinical decision-making.

Myopia control spectacle lenses were the most commonly adopted myopia control intervention among children as reported by parents from both countries. However, for other myopia control methods, a higher proportion of UK parents reported adopting advanced myopia control strategies such as ortho-K, atropine and red-light therapy than French parents. This is in contrast to the prescribing pattern of myopia control interventions by eye care professional whereby, a previous study reported that French ophthalmologists prescribe more myopia control spectacle lenses and pharmacological treatments than their UK counterparts.¹¹ This suggests that UK parents may be more proactive in seeking advanced treatments, despite practitioner prescription trends.

Parents from both countries reported that both atropine and ortho-K lenses were used in their children, although at lower rates compared to other refractive correction methods. This limited adoption could be attributed to the availability and accessibility of treatments. For instance, low-dose atropine is not widely available in Europe or the UK.^{38,39} In France, atropine is available at certain hospital pharmacies on prescription by an ophthalmologist,⁴⁰ whereas in the UK, atropine can only be issued in specific institutions by ophthalmologists.^{39,41} Atropine has been consistently highlighted in the literature as

one of the most effective agents (not higher than repeated low-level red-light (RLRL) rates⁴²) to date for delaying myopia progression. In the past, atropine's limited use was due to its rebound effect, where myopia progression accelerates after discontinuing treatment with higher concentrations (eg, 1% or 0.5%).⁴³ However, recent clinical trials have demonstrated that low-dose atropine 0.01%, particularly in European children, effectively slows progressive myopia over several years while minimizing side effects and reducing the rebound phenomenon as compared to high-dose.^{44–48} Nevertheless, the accessibility barriers to atropine may contribute to lower parental awareness and usage, highlighting the urgent need for regulatory approval and market availability of effective myopia control treatments that families can easily access.

Our study highlights a strong parental willingness to adopt new pharmacological treatments for progressive myopia, with UK parents expressing a slightly higher likelihood than their French counterparts. However, affordability remains a critical concern, particularly in the UK, where a greater proportion of parents identified cost as a significant barrier. In addition to financial constraints, access to eye care professionals and clear, reliable information for caregivers emerged as key areas requiring improvement. Notably, recommendations from eye care professionals and proven treatment efficacy were primary factors influencing parental decision-making.

These findings align with previous studies on the topic. Kearney et al identified cost as a major barrier to myopia treatment uptake in the UK,⁴⁹ emphasizing the need to communicate to parents the long-term value of investment in myopia control, particularly for younger children at higher risk of rapid progression. Regarding parental willingness to adopt new treatments, Ozdemir et al found that parents of children with chronic eye diseases were generally satisfied with daily eye drop administration.⁵⁰ In contrast, a recent study published in 2024 revealed that while parental knowledge and practices concerning children's health are generally limited, there is a strong desire to improve understanding and adopt better healthcare practices.⁵¹ This indicates that parents are receptive to new information and treatments when it comes to their children's eye health.

Furthermore, our study also found that parents in both France and the UK have already begun utilizing red-light therapy, the latest treatment for managing paediatric myopia. Given that red-light therapy only became available in the EU and UK markets in late 2023,⁵² its early adoption indicates a notable openness to novel interventions that may help prevent further deterioration of their children's eyesight. This willingness reflects both the urgency parents feel when confronted with progressive myopia and the growing visibility of new treatment options. However, early adoption also highlights a potential gap between clinical evidence and real-world use. While RLRL has shown promise in controlled studies, recent reports have raised concerns about its long-term safety. Potential risks include retinal phototoxicity from repeated light exposure¹⁴ and uncertainties regarding the durability of treatment effects once therapy is discontinued, with some studies suggesting a possible rebound phenomenon.¹⁵ Moreover, most evidence to date stems from relatively short-term clinical trials in selected populations, leaving its safety in broader, real-world pediatric use uncertain.¹⁵ Thus, without careful evaluation and clear communication, an intervention designed to slow progression could inadvertently cause more harm than benefit. These considerations emphasize the importance of clinicians providing balanced guidance to parents, acknowledging both the potential benefits and the unresolved safety issues.

The ATOM2 study supports the emphasis on treatment efficacy as a key decision-making factor. The study demonstrated that low-dose atropine effectively slows myopia progression with minimal side effects.^{45,48} This evidence has encouraged clinicians to consider low-dose atropine, although challenges related to availability and dosing persist. Similar to our study, a survey conducted by Yang et al revealed that parental willingness to adopt myopia control interventions was significantly influenced by recommendations from eye care practitioners,⁵³ highlighting the crucial role of professional advice in treatment decisions.

The financial burden of managing myopia was a key concern, with over half of both cohorts reporting that managing their child's myopia placed a financial strain on their families. In our study, the cost of prescription glasses and contact lenses, regular eye exams and consultations, and specialized lenses or treatments were primary contributors to the financial burden. Furthermore, high costs and long waiting times for appointments were also the most frequent challenges experienced by parents in accessing eye care services. The greater financial burden perceived by UK parents compared to French parents may be explained by systemic differences in how children's vision care is organized and reimbursed. In the UK, optometrists serve as the main point of access, and although NHS optical vouchers provide some support (at £42 for myopia corrections up to -6D), they often do not cover the full cost of spectacles, lens upgrades, or newer myopia-

control interventions.^{54,55} As a result, many families incur substantial out-of-pocket expenses. In contrast, in France, children's spectacles and ophthalmology services are reimbursed through the national health insurance system and complementary "mutuelle" coverage, which may ease the perceived financial impact.^{56,57} Another possible explanation is that parents from the UK cohort in our study reported greater awareness and uptake of advanced interventions, such as orthokeratology, atropine, and red-light therapy, which are primarily private-pay and therefore contribute to additional financial strain. Together, these systemic and behavioral differences may help explain why UK parents more often reported myopia management as a financial burden.

Although there are no previous studies assessing the financial burden of paediatric myopia management among French and UK parents, a study in Singapore has evaluated the economic costs on adults over 40 years old and found that participants who wore glasses at earlier ages had significantly higher costs than the other groups.⁵⁸ Expanding on this, a systematic review found that in Spain, annual direct costs for contact lenses and spectacles totaled \$301.9 and \$109.1, respectively,^{59,60} and similar costs can be anticipated in the UK and France. While both countries subsidize some expenses, the remainder constitutes out-of-pocket costs that individuals bear, contributing to significant financial strain. Our analysis revealed that the extent of myopia progression significantly influenced parents' perception of financial burden. This finding underscores the critical need for affordable or subsidized myopia management options to alleviate the financial pressures on families, mainly as myopia progression accelerates.

Notably, our findings suggest that more than half of myopia diagnoses occur only after parents observe symptoms, which suggests a predominantly reactive diagnostic approach. This implies that many children are identified only after visual impairment has become apparent, potentially missing the window for early intervention. These findings underscore the need for proactive screening programs in schools and community settings, which could facilitate earlier detection and more timely management of myopia.

Overall, our findings highlighted consistent differences between the UK and France—not only in awareness and treatment uptake but also in how parents perceive the management of myopia. These disparities reflect differences in healthcare organization and culture. In the UK, care is largely optometrist-led,²¹ with NHS vouchers offering only partial support,⁵⁴ which often leaves families to navigate additional costs and private-pay interventions. By contrast, France follows an ophthalmologist-centric model,²¹ where universal insurance and complementary *mutuelle* coverage substantially reduce direct costs,⁵⁶ and parental decisions are more strongly shaped by physician guidance.⁶¹ Cultural and behavioral differences may further contribute to these patterns. Health-seeking behavior in France tends to reflect a more collective, provider-guided approach, where patients follow clinician recommendations within a system offering more robust coverage.⁶¹ In the UK, parents appear more proactive, demonstrated by their higher adoption of private-pay interventions like orthokeratology, atropine, and red-light therapy, heightening their cost burden.^{37,41} While our study provides insight into these two European systems, generalizability remains limited, as variations across countries, including fee structures, provider roles, education standards, and culture, influence how parents perceive and respond to myopia.

These cross-country differences likely reflect broader systemic and cultural distinctions in healthcare delivery and reimbursement, which shape how families perceive and manage the burden of childhood myopia. At the same time, innovations at the individual level are beginning to offer new ways of supporting parents directly. For instance, the Brien Holden Vision Institute has developed a widely used Myopia Calculator, which allows clinicians to visualize likely progression trajectories and potential treatment benefits.^{62,63} Mobile applications such as Peek Acuity provide validated home-based vision screening, enabling parents to track visual changes over time and seek timely professional advice. In addition, research groups have begun piloting apps that integrate lifestyle-based risk assessments (eg, outdoor time, near work, parental myopia history) to help identify children at higher risk and guide preventive strategies.^{64,65} These tools are not intended to replace professional eye examinations but may empower families by increasing awareness, encouraging early detection, and supporting more informed discussions with eye care professionals. As digital health continues to expand, integrating validated risk assessment and monitoring tools, such as Myopia Progression Risk Assessment Score (MPRAS),⁶⁶ into school-based or public health programs could play a valuable role in enhancing parental engagement and complementing clinical care pathways.

This study has some limitations. Participants were recruited through the TOM Medications app, potentially biasing the sample toward parents with higher digital literacy and greater health awareness. Despite this, nearly half of the

parents were unaware that myopia progression could be delayed, emphasizing the need for further parental education on myopia management. Additionally, some questions were ambiguous and may have been misinterpreted by respondents. For instance, given the higher rate of reported use of myopia control methods compared to other studies, it is unclear whether parents reported actual use of myopia control methods or were merely familiar with these methods. Similarly, parents may have misunderstood the term “myopia control spectacle lenses” as referring to regular corrective glasses rather than interventions designed to slow myopia progression, such as Defocus Induced Multifocal lenses. Despite these limitations, this study makes a valuable contribution to the existing literature, particularly given the scarcity of comparative studies examining parental awareness on myopia-related complications and perspectives on childhood myopia management across different European countries.

Conclusion

This comparative study of UK and French parents revealed significant gaps in awareness of myopia-related complications and management options, despite parents’ willingness to adopt new interventions. Eye care professionals remained crucial influencers in treatment decisions. Barriers to adopting myopia control methods included cost, accessibility, and limited knowledge about progression control. The findings highlight the urgent need for enhanced public health education, improved access to affordable treatments, and proactive screening programs to mitigate the growing burden of childhood myopia and prevent long-term vision loss. Education campaigns should emphasize that myopia progression is modifiable, promote awareness of serious complications, and empower ECPs with resources to guide families. At the policy level, expanding school-based vision screening, ensuring wider availability and affordability of effective treatments, and developing national guidelines on myopia management could support earlier detection, equitable access, and more consistent care pathways across populations. Importantly, these insights can guide the design of targeted education campaigns and school-based eye health initiatives, ensuring earlier parental engagement and awareness. Strengthening clinician–parent communication frameworks may also help bridge knowledge gaps and support informed, sustainable decision-making in myopia management, ultimately improving both children’s eye health and their learning outcomes.

Abbreviations

UK, United Kingdom; HRA, Human Research Act; NHS, National Health Service; REC, Research Ethics Committee; ANMS, Agence nationale de sécurité du médicament et des produits de santé, D, dioptries; ECPs, eye care practitioners; Ortho-K, orthokeratology; RLRL, repeated low level red light.

Data Sharing Statement

The dataset generated during the current study is available on request from the corresponding author.

Author Contributions

All authors made a significant contribution to the work reported, whether in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas. All authors took part in drafting, revising, or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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