

Development of age appropriate vision function questionnaire for children with visual impairment (CHVI-VFQ)

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Purpose: To develop a new age-appropriate visual function questionnaire for visually impaired children. **Methods:** The study was conducted in north India in 20,955 (97.3%) children ≤15 years who underwent visual acuity examination. Of these 20,955 children, a total of 722 children were referred with unaided visual acuity less than 6/12 in any eye. Among these referred children, parents in the age group of 5–9 years and children between 10 and 15 years underwent interviews using LV Prasad Functional Visual Questionnaire-20 (LVP FVQ 20) and Indian Visual Functioning Questionnaire-33 (IND VFQ-33). Following this, multiple steps were undertaken that involved expert opinion for the removal of items on basis of zero variance and factor analysis along with calculation of Cronbach's alpha. **Results:** A Cronbach' alpha of 0.834 was calculated for the younger age group and 0.931 for the higher age group of children. **Conclusion:** A new robust age-appropriate questionnaire was developed and it was observed that there was a significant change in median score (that was derived for various domains after calculating the median for the items in various domains asked pre- and post-intervention in the form of glasses or surgery) for quality of visual function in the visually impaired children. A significant change in functional vision of visually impaired children ($P < 0.005$) was observed in both age groups.

Key words: Cronbach's alpha, internal consistency, visual function questionnaire, visual impairment

Visual impairment has a profound impact with respect to education, recreation, and social experience in children. The associated disability-adjusted life years (DALYs) in terms of blind years are more in children and are affected by functional vision.^[1-4] Functional vision is defined as vision that can be used to perform a task (s) requiring vision, that is, how a person uses vision. There are several tools for assessing functional vision but they are not adequate for children, especially those from developing countries, because many of the items in these tools pertain to maintaining home and finances.^[5-10]

A functional vision questionnaire consists of a list of items related to the use of vision. The activities of children vary with age; thus, it is difficult to develop a single instrument that can serve as a measure of children's functional problems. Several internationally applicable instruments for adults have been developed and shown to be reliable and valid across countries. However, such an effort has been lacking for the pediatric age group.^[10-15] Thus, keeping this as a priority, the current study was conducted to develop an age-appropriate visual function questionnaire in children.

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Methods

Study population

The study was a part of a population-based childhood visual impairment study that was conducted in East Delhi in North India after obtaining permission from the district blindness officer and ethical committee of the All India Institute of Medical Sciences. A detailed house-to-house visual acuity examination was conducted by the study team. Parents of all the children were informed about the nature of the study after taking informed written consent. Demographic details about the parents and eligible children in visited households were recorded. Besides this, socioeconomic status was elicited using Modified Kuppuswamy criteria that included occupation, education of the head of household, and family income per month.^[6] The children who were not able to communicate and parents of children refusing for giving consent were excluded from the study. The study population consisted of all the referred children between 5 and 15 years of age with visual acuity less than 6/12 unaided in any eye after undergoing screening for visual acuity in the field.^[4] These children had to undergo detailed clinical examination in

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the central clinic for determining the cause of visual impairment. Besides undergoing detailed ophthalmic examination in the central clinic, these referred children and their parents were targeted for asking some questions on the visual quality of life (VFQ). The suitability of two existing tools for visual function questionnaires used in India for the assessment of disability and quality of life among children was evaluated. These two VFQs were LV Prasad Functional Visual Questionnaire (LVP FVQ) and Indian Visual Functioning Questionnaire (IND VFQ). In this objective, the vision function of visually impaired children was assessed using IND VFQ and LVP FVQ. IND VFQ had 33 questions or items related to general functioning, psychosocial impact, and visual symptoms. The responses were based on the scores obtained on the Likert scale (range: 0–4), where a score of 4 represented severe disability. A summation of scores of total items was taken; a higher score signified greater disability. LVP FVQ had 20 items related to activities of distance, near vision, and psychosocial impact with the Likert score ranging from 0 to 3. The scoring for this was also summated as for IND VFQ. The Likert scale had four scores for all the items in LVP FVQ and five scores in IND VFQ; a higher score means greater difficulty. For the current study, the score of the Likert scale was reduced to 4 in IND VFQ and the last score of “cannot do the task” was merged with the fourth option of “great difficulty.” This helped in maintaining similarity between the two VFQs at the time of analysis. This was done in four steps:

Step I involved taking expert opinions from the professionals. These experts were the people who already had experience of working with VFQ and belonged to public health, low vision, and ophthalmology at a tertiary care hospital. The questionnaires were sent to them independently first for their opinion and then a workshop, was arranged further where all these experts were invited to draw a final consensus on the VFQ tool according to the age of target children. Following this, the items found unsuitable based on function or difficulty in comprehending the language were dropped. Among the items with similar language or duplication, the one with easy inference and language between the available two items was retained.

The questionnaire was read to them by the medical social workers along with the options to both the parents and targeted children and the results were presented to the experts. Based on the responses given by children/parents, a revised tool was prepared by retaining the most highly rated items or items. The age group for which the various items to be asked from the parents or from the children was decided depending on the responses and expert opinion. They were divided into two groups for the development of VFQ: the age group of 5–9 years, where questions were asked from parents, and the age group of 10–15 years, where questions were asked from the children themselves. Finally, a tool with the final selected items was prepared and pretested. This pretesting was done in a pilot cluster with visually impaired children by using the same criteria as decided in step I. The results were not included in the study. This tool was translated to Hindi for LVP FVQ and back-translated independently and compared to verify the translation. IND VFQ’s Hindi version was already available.

Step II: The study population as decided by experts for this step was parents of children aged 5–9 years and children themselves in the age group of 10–15 years among the children that were referred for detailed ophthalmic examination from

the field with a visual acuity of 6/12 unaided in any eye. The study population was subjected to the list of items finalized in step I to check for items that had constant response on the options mentioned in Likert scale were excluded.

Step III involved factor analysis of the items. The selected items were subjected to factor analysis. In the factor analysis items that could not contribute towards the variance explained were automatically removed. Further, only the items having factor loading ≥ 0.6 were retained and the items with similar functions were classified into various domains.

Step IV: All items with factor loadings > 0.6 having identical functions were assigned to a similar domain and the Cronbach’s alpha score was calculated. The internal validity of the tool was established by calculating Cronbach’s alpha for the purpose of minimum variability between the items. Cronbach’s alpha of ≥ 0.8 was considered as significant. In case the Cronbach’s alpha for individual domains was found to be < 0.8 , the overall Cronbach’s alpha was finally adopted and the individual domain’s Cronbach’s alpha was not accepted in that case for that age group.

Results

STEP I: Expert opinion from the professionals

Opinion was gathered from the experts on both the VFQs on all the items. These experts dropped the items either due to similar inference between the items in both the questionnaires. They also removed the items that were not easy to comprehend due to difficult language. Besides this, the items describing the activities that could not be performed by the children of that particular age group were also removed [Table 1 and Fig. 1a, b].

In the age group of 5–9 years- Results of Step I (Selection of items by experts)

In this age group, from LVP FVQ 20, two items were removed as the activities asked in them were uncommon in this age group. Followed by that, another five items were removed based on similarity with IND VFQ. From IND VFQ 33, a total of 11 items were removed based on activities inappropriate for the age group and another six based on similarity with LVP FVQ 20. Thus, a total of 29 items were selected from the set of 53 items of both the VFQs [Table 1 and Fig. 1a].

In the age group of 10–15 years

In this age group, from LVP FVQ 20, a list of 13 questions was selected as described for the age group of 5–9 years. From IND VFQ 33, a total of eight items were removed based on activities inappropriate for the age and group and another six based on similarity with LVP FVQ 20. Thus, a total of 33 items were selected from the set of 53 items of both the VFQs [Table 1 and Fig. 1b].

STEP II: Administering these items selected by experts to the referred children at the clinic and confirmation of items with zero variance

This involved administering all the selected questions (items) from both LVP FVQ 20 and IND VFQ 33 in step I, that is, 29 in the 5–9-years age group and 32 in the 10–15-years age group to parents/caretakers in the age group of 5–9 years and from children themselves in the 10–15 years of the referred children and recording the responses from the parents of the children undergoing detailed ophthalmic examination at clinic/home.

Table 1: List of items of IND VFQ and LVP FVQ with reasons for nonacceptance by experts

	Similar items	Experts opinion for dropping questions (both age groups)
LVPEI		
Do you have any difficulty in making out whether the person you are seeing across the road is a boy or a girl, during the day	IND VFQ 9	Similar Question
Do you have any difficulty in seeing whether somebody is calling you by waving his or her hand from across the road		Difficult Language
Do you have any difficulty in walking home at night (from tuition or friends house) without assistance when there are street lights	IND VFQ 6, 22	Similar Question
Do you have any difficulty in reading the other details on the bus	IND VFQ 8	Similar Question
Do you have any difficulty in threading a needle		Difficult Function
How much difficulty do you have in recognizing between one- and two-rupee coins without touching	IND VFQ 18	Similar Question
Do you have any difficulty in identifying colors while coloring	IND VFQ 17	Similar Question
IND VFQ 33		
Because of your vision, how much problem do you have in climbing stairs	LVP FVQ 14	Similar Question
Because of your vision, how much problem do you have in making out the bumps and holes in the road when walking	LVP FVQ 3	Similar Question
Because of your vision, how much problem do you have in finding your way in new places		Difficult Function for age
Because of your vision, how much problem do you have in doing your usual work either in the house or outside		Difficult Language
Because of your vision, how much problem do you have in doing your work up to your usual standard		Difficult Language
Because of your vision, how much problem do you have in seeing objects that may have fallen in the food	LVP FVQ 18	Similar Question
Because of your vision, how much problem do you have in seeing the level in the container when pouring		Similar Question
Because of your eye problem, do you feel frightened to go out at night	LVP FVQ 4	Similar Question
Are you dazzled in bright light		Similar Question
Is your vision blurred in sunlight		Similar Question
Does bright light hurt your eyes		Similar Question
Do you close your eyes because of light from vehicles		Difficult Language
Does light seem like stars		Difficult Language
Do you have blurred vision		Difficult Language
In addition to the above questions, three more questions stated below were deleted in IND VFQ 33 in the age group of 5-9 years		
Because of your eye problem, do you enjoy social less in functions like birthday parties		Difficult Language
Because of your eye problem, do you ashamed that you can't see		Difficult Language
Because of your eye problem, do you feel you have become a burden on others		Difficult Language

All these children were those that were referred to the central clinic for detailed ophthalmic examination as they had unaided visual acuity of < 6/12 in any eye. The responses were recorded and analyzed. For LVP FVQ 20 in the age group of 5–9 years, it was observed that there were three items that had responses clustered around one option and 0 to 1 positive score in one or more options (zero variance) [Table 2]; these were items 14, 15, and 17.

Therefore, in the 5–10-years age group, from 29 questions after step I, five were removed with zero variance in step II. In factor analysis of 24 questions, eight items were removed. Therefore, 16 items were left. In the 10–15-years age group, from 32 questions after step I, none was removed with zero variance in step II, and in factor analysis of 32, five items were removed; therefore, 27 items were left.

STEP III: Factor analysis of the finally selected item for calculation of domains

After checking the items for zero variance through factor analysis, factor loadings were calculated for the remaining items, and only the items having factor loading of ≥ 0.6 were retained and taken further for factor analysis, categorizing the items according to various identical domains with similar items. Of the 29 items subjected to factor analysis after removal of five items with zero variance, finally, only 16 items were left based on loadings of ≥ 0.6 in the age group of 5–9 years. These 16 items were divided into four domains, namely mobility, education, daily routine, and psychosocial [Table 3 and Fig. 2]. In the age group of 10–15 years using the above mentioned criteria, only five items were removed; thus, 27 items were carried further for calculation of Cronbach's alpha [Table 4 and Fig. 3].

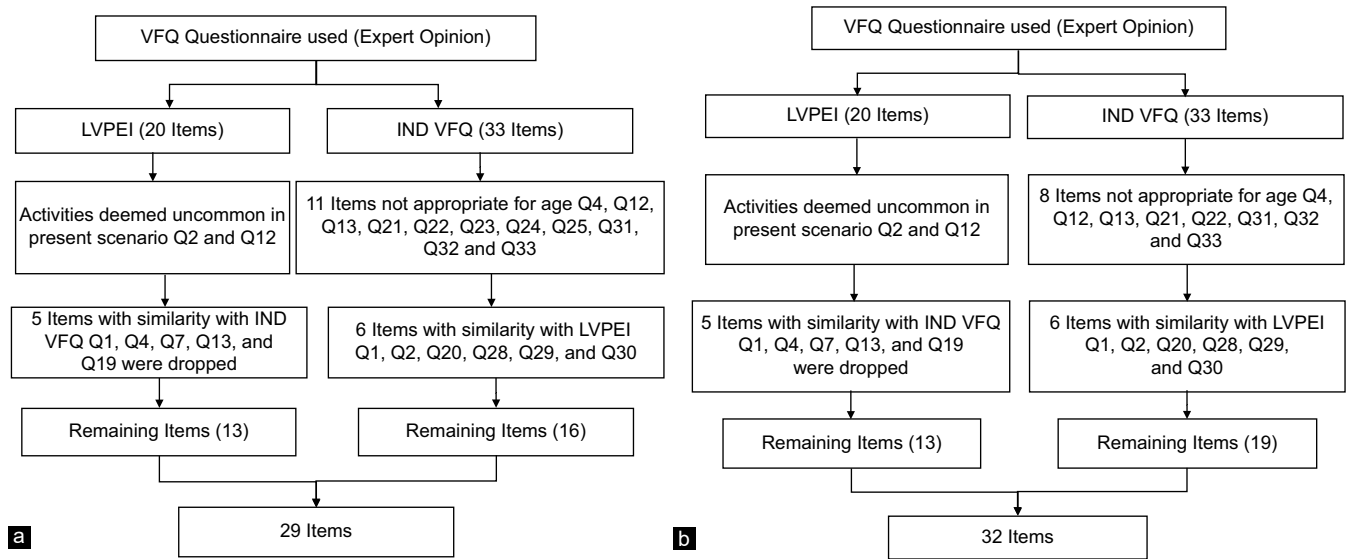


Figure 1: (a) Methodology for age appropriate questionnaire in the age group of 5-9 years (b) Methodology for age appropriate questionnaire in the age group of 10-15 years

Table 2: List of items removed based on zero variance

Items (Items)	Details
INDVFQ 10	Because of your vision, how much problem do you have in recognizing the face of a person standing near you
INDVFQ 19	Because of your vision, how much problem do you have in going to the toilet
LVP FVQ14	Do you have any difficulty in climbing up and down the stairs
LVP FVQ15	Do you have difficulty in lacing your shoe
LVP FVQ17	Do you have difficulty in applying toothpaste on your toothbrush

STEP IV: Estimation of Cronbach’s alpha

A total of 16 items were finally selected in the age group of 5–9 years. These were divided into four domains, namely daily routine, mobility, education, and psychosocial. The Cronbach’s alpha for domain 1 (distance), 2 (education), 3 (daily routine/general functioning), and 4 (psychosocial) was 0.560, 0.393, 0.791, and 0.658, respectively. The Cronbach’s alpha was less for the domain of daily routine activities (0.393), but the overall Cronbach’s alpha was 0.839. Thus, as decided previously, due to the value of alpha less than 0.8 in individual domains, it was decided to keep this VFQ tool in this age group as without domains and use the overall Cronbach’s alpha [Table 3 and Fig. 3].

In the age group of 10–15 years, a total of 27 items with loadings of ≥ 0.6 were divided into four domains, namely daily routine, mobility, education, and psychosocial. The Cronbach’s alpha score was < 0.8 in individual domains; it was decided to keep this VFQ tool in this age group as without domains and use overall Cronbach’s alpha, and the overall Cronbach’s alpha was very good (0.924) [Table 4 and Fig. 3].

The newly designed VFQ was administered to parents/ caretakers of 34 VI children in the age group of 5–9 years and to 55 children in the age group of 10–15 years after

providing them with services such as glasses or surgery. It was observed that there was a significant change in the median score (that was derived for various domains after calculating the median for the items in various domains asked pre- and post-intervention in the form of glasses or surgery) for quality of visual function in the children between 5 and 9 years for all the domains of VFQ except for the domain of daily routine on comparing between pre- and post-intervention done in the form of providing services [Fig. 4a]. Using the newly designed VFQ consisting of 32 items in the age group of 10–15 years in 55 children with visual impairment, it was noted that quality of visual function improved for all the domains of VFQ on comparing the median between pre- and post-intervention done in the form of providing services [Fig. 4b].

Discussion

The study aimed to develop age-appropriate VFQs for two age groups: (1) in the age group of 5–9 years and (2) in the age group of 10–15 years. The main reason for developing this was that we had to estimate the visual dysfunction due to visual impairment in the population that ranged between 5 and 15 years. Though LVP FVQ 20 has been used in different age groups of children to determine the visual dysfunction, there were a few items that were not relevant in this VFQ for the age group of < 9 years even if asked from parents as in this age group, children are generally not involved in such type of activities. Additionally, there were some items in IND VFQ 33 that should be included in LVP FVQ 20 to make it a more robust tool for assessment of visual impairment. The children aged less than 5 years were excluded as children in this age group were completely dependent on parents for their activities irrespective of their visual acuity, which could affect the results by showing skewed results in this age group.

Several instruments assessing visual function-related quality of life^[10-15] in children are available, but they are either generic instruments used for children with any

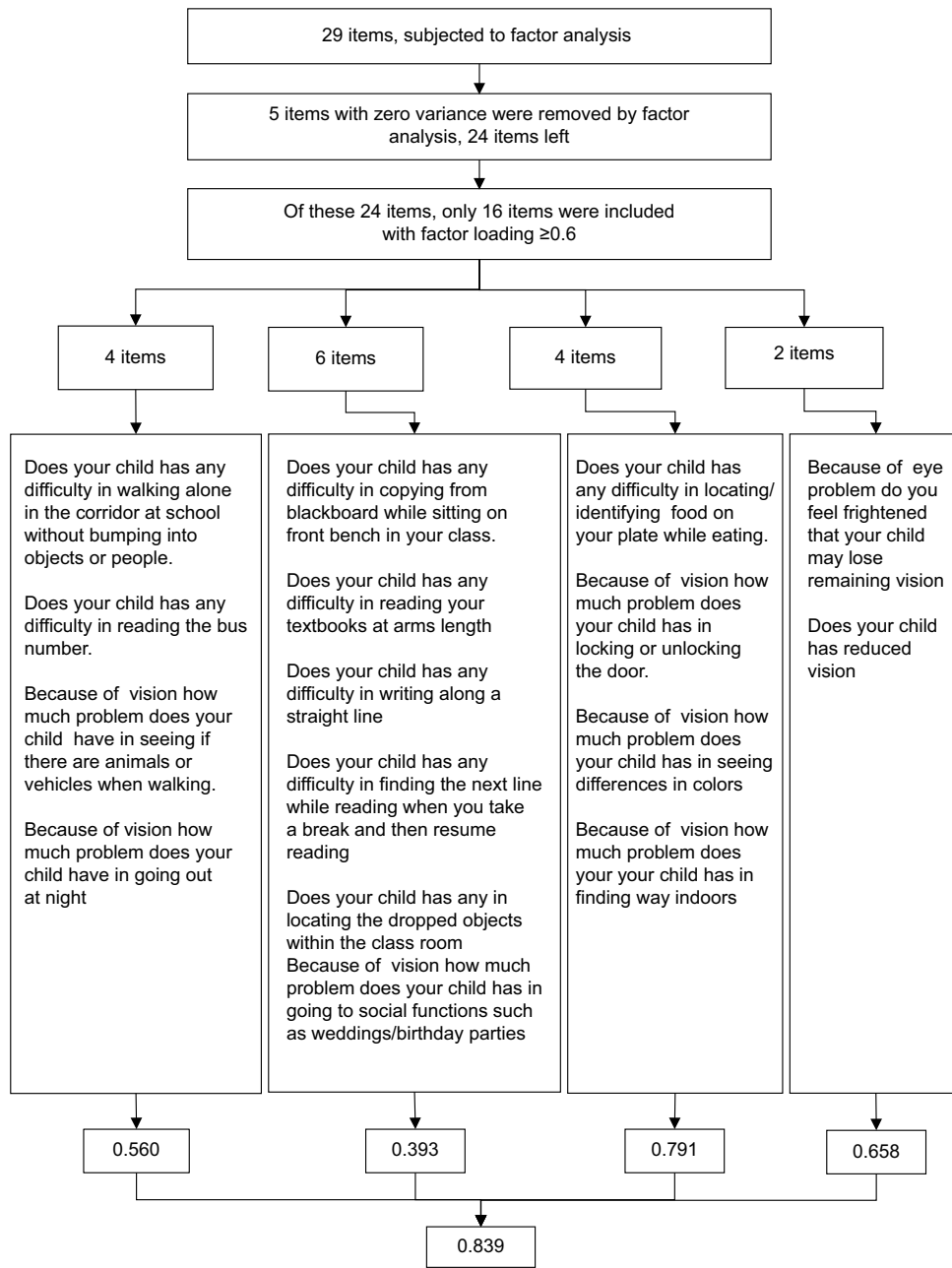


Figure 2: Result of factor analysis and various domains in the age group of 5–9 years

chronic disorder or disorder-specific tools. To date, generic QoL instruments have largely been used for assessing QoL of children who are visually impaired (VI). However, it is recognized that these do not enable a comprehensive or detailed assessment of the impact of living with a visual impairment, nor do they detect small changes in an individual's condition or discriminate adequately between children who are VI. In traditional ophthalmology practice with limited resources, especially in developing countries, eye care practitioners have time and resource constraints to explore a wide array of problems faced by blind and visually impaired children. Activities of school children range from self-care to being able to copy from the blackboard in class. Different activities require different aspects of vision. Though

different questionnaires are available for recording visual function (VFQ) in children, they have been used mainly in south India. Even the IND VFQ developed in north India was used for adults; therefore, an age-appropriate VFQ in north-Indian children is lacking. Once it is available, it can be used to study the benefits perceived by children suffering from low vision. With the development of this VFQ, we will be able to suggest health care and policy-making agencies regarding policies developed for visual need assessment of the children with VI and planning appropriate rehabilitation of low-vision children to ensure better compliance so that they can be brought back in the community to live a normal productive life.

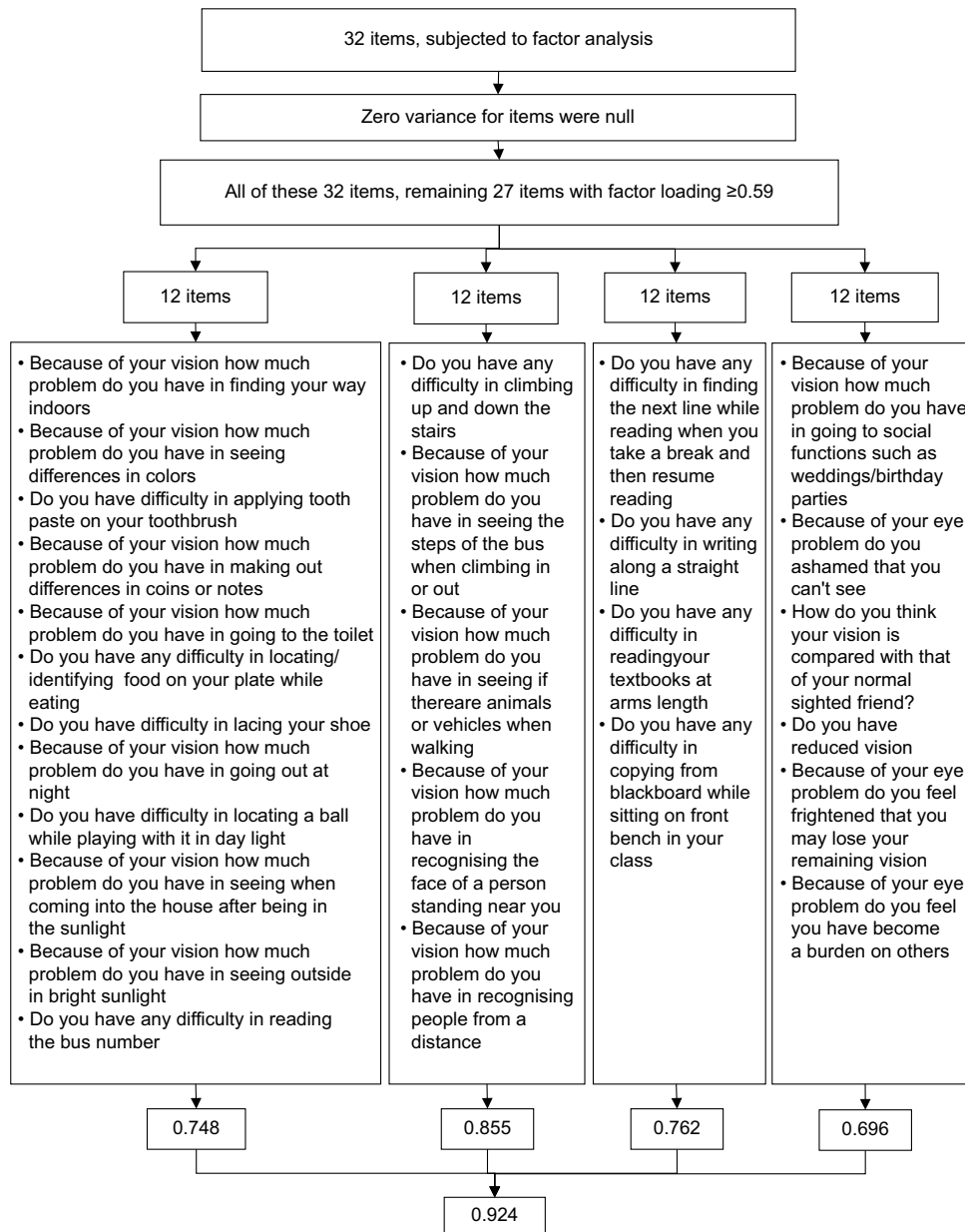


Figure 3: Result of factor analysis and various domains in the age group of 10–15 years

Similar studies have been done on the development of VFQs [Table 5]. In a study by Gothwal *et al.* in 2003^[9,16] for the development of LV Prasad functional vision questionnaire, a measure of functional vision performance (LVP VFQ) of visually impaired children was done; they administered a 19-item questionnaire to 78 visually impaired children who had high reliability scores of 0.93 for the various item parameters. There has been another study related to visual function in India by Gothwal for reforming their existing tool of VFQ.^[16-19] In all the abovementioned studies, Rasch analysis [Table 5] was used for all the items to estimate interval measures of perceived visual ability for functional vision performance. Rasch analysis is a model of probability of using a particular rating category as a function of functional reserve. Functional reserve is the difference between the person’s perceived visual ability α_n and

the ability required by the item π_i ($\alpha_n - \pi_i$). In another study done by Nirmalan *et al.*^[18] in 2004 in Kariapatti in rural south India to determine impact of VI in 1194 children aged 7–15 years, the children were administered LVP VFQ; they used a total of 11 items with 5-point rating. Using this, the reliability score was 0.82 for person ability indicating the high reliability score for being used in children with visual impairment. They compared visual function scores between children with normal sight and children with uncorrected monocular and binocular visual impairment.

In the current study, factor analysis was used instead of Rasch analysis as we were using already pretested questionnaires that were derived from Rasch analysis. Thus, to reach the various age-appropriate domains, factor analysis was more suitable. In the current study, it was observed that all the

Table 3: Detailed result of factor loadings in the age group of 5-9 years

Items	Details	Mobility	Education	Daily routine	Psycho-social
LVP FVQ3	Does your child has any difficulty in walking alone in the corridor at school without bumping into objects or people	0.815			
LVP FVQ5	Does your child has any difficulty in copying from the blackboard while sitting on the front bench in your class		0.696		
LVP FVQ6	Does your child has any difficulty in reading the bus number	0.800			
LVP FVQ8	Does your child has any difficulty in reading your textbooks at arm's length		0.770		
LVP FVQ9	Does your child have any difficulty in writing along a straight line		0.670		
LVP FVQ10	Does your child have any difficulty in finding the next line while reading when you take a break and then resume reading		0.630		
LVP FVQ11	Does your child have any in locating the dropped objects within the classroom		0.608		
LVP FVQ18	Does your child have any difficulty in locating/identifying food on your plate while eating			0.808	
INDVFQ 3	Because of vision, how much problem does your child have in seeing if there are animals or vehicles when walking	0.803			
INDVFQ 6	Because of vision, how much problem does your child have in going out at night	0.656			
INDVFQ 11	Because of vision, how much problem does your child has in locking or unlocking the door			0.764	
INDVFQ 17	Because of vision, how much problem does your child has in seeing differences in colors			0.896	
INDVFQ 5	Because of vision, how much problem does your child has in going to social functions such as weddings/birthday parties		0.852		
IND VFQ 7	Because of vision, how much problem does your child has in finding your way indoors			0.701	
INDVFQ 26	Because of eye problem, do you feel frightened that your child may lose remaining vision				0.777
INDVFQ 27	Does your child have reduced vision				0.733

*The items with loadings of <0.6 were removed; these included item numbers 16 and 20 in LVP FVQ-20 and item numbers 8,9,14,15,16, and 18 in IND VFQ 33

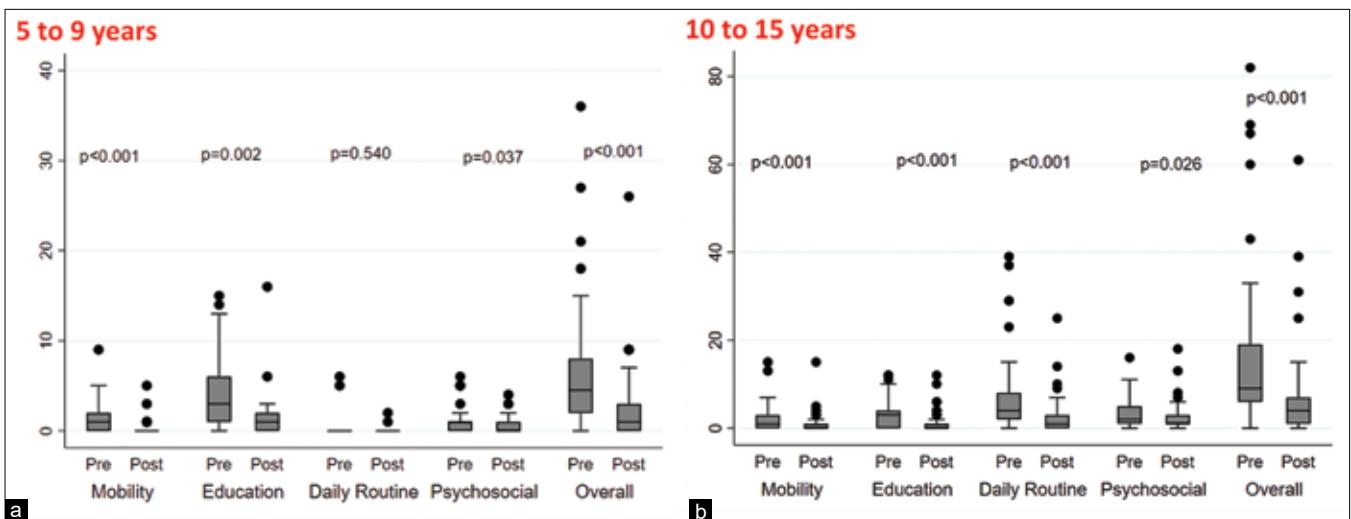


Figure 4: (a) Comparison of pre and post age-appropriate visual function questionnaire after factor analysis in visually impaired children in the age group of 5–9 years; (b) Comparison of pre and post age-appropriate visual function questionnaire after factor analysis in visually impaired children in the age group of 10–15 years

Table 4: Detailed result of factor loadings in final 32 items in age group of 10-15 years

Items	Details	Daily routine/ general functioning	Distance	Education	Psycho- social
INDVFQ 7	Because of your vision, how much problem do you have in finding your way indoors	0.749			
INDVFQ 17	Because of your vision, how much problem do you have in seeing differences in colors	0.670			
LVP FVQ17	Do you have difficulty in applying toothpaste on your toothbrush	0.747			
INDVFQ 18	Because of your vision, how much problem do you have in making out differences in coins or notes	0.723			
LVP FVQ14	Do you have any difficulty in climbing up and down the stairs		0.641		
INDVFQ 19	Because of your vision, how much problem do you have in going to the toilet	0.700			
LVP FVQ18	Do you have any difficulty in locating/identifying food on your plate while eating	0.717			
LVP FVQ15	Do you have difficulty in lacing your shoe	0.718			
INDVFQ 8	Because of your vision, how much problem do you have in seeing the steps of the bus when climbing in or out		0.707		
INDVFQ 3	Because of your vision, how much problem do you have in seeing if there are animals or vehicles when walking		0.618		
INDVFQ 5	Because of your vision, how much problem do you have in going to social functions such as weddings/birthday parties				0.674
INDVFQ 6	Because of your vision, how much problem do you have in going out at night	0.610			
LVP FVQ16	Do you have difficulty in locating a ball while playing with it in daylight	0.697			
INDVFQ 10	Because of your vision, how much problem do you have in recognizing the face of a person standing near you		0.776		
LVP FVQ10	Do you have any difficulty in finding the next line while reading when you take a break and then resume reading			0.720	
LVP FVQ9	Do you have any difficulty in writing along a straight line			0.703	
LVP FVQ8	Do you have any difficulty in reading your textbooks at arm's length			0.689	
INDVFQ 16	Because of your vision, how much problem do you have in seeing when coming into the house after being in the sunlight	0.600			
INDVFQ 24	Because of your eye problem, do you ashamed that you can't see				0.607
INDVFQ 15	Because of your vision, how much problem do you have in seeing outside in bright sunlight	0.627			
INDVFQ 9	Because of your vision, how much problem do you have in recognising people from a distance		0.693		
LVP FVQ 6	Do you have any difficulty in reading the bus number	0.638			
LVP FVQ 5	Do you have any difficulty in copying from the blackboard while sitting on the front bench in your class			0.612	
LVP FVQ 20	How do you think your vision is comparable to that of your normal-sighted friend?				0.602
INDVFQ 27	Do you have reduced vision				0.653
INDVFQ 26	Because of your eye problem, do you feel frightened that you may lose your remaining vision				0.617
INDVFQ 25	Because of your eye problem, do you feel you have become a burden on others				0.642

*A total of 27 items were retained out of 32, and 5 items were removed as they had alpha <0.6; these were IND VFQ 16, 14, and 23 and LVP FVQ 3 and 11

domains improved significantly except for daily routine in the age group of 5–9 years, whereas in the age group of 10–15 years, all the domains improved significantly post intervention in the form of glasses or surgery.

Table 5: Comparison of features of different types of VFQ

Description	CVAQC (17)	IVI-C (19)	LVP-VFQ (16)	CVFQ (18)	Current study
Age range (Years)	5-18	8-18	8-18	Upto 7	5-15 years
Basis of item development	Focus groups with children (VI and normal sighted)	Focus group with VI children, parents, teachers and supporters	Review of literature and Focus group with V children, parents, teachers and supporters	Clinical experience and literature review	Using LVPEI VFQ And IND VFQ
Population most suited	Children in developed countries		Children in developing countries		Children in developing countries
Self-reported/proxy	Self-reported	Not published	Self-reported	Proxy	Parents/caretakers in the age group of 5-9 years. Self-reported in the age group of 10-15 years
Concept being measured	Visual ability	Visual related quality of life	Visual function	Visual related quality of life	Visual related quality of life

CVAQC: Cardiff Visual ability Questionnaire, IVI-C: Impact of visual impairment, LVP- LV Prasad, CVFQ: Childrens visual function questionnaire

Conclusion

This is the first community-based cross-sectional study in which an attempt was made to develop an age-appropriate visual functional questionnaire for visually impaired children. This new age-selective questionnaire will prove to be very helpful in the future for further analysis of VFQ and calculation of functional vision in various childhood visual impairment studies.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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*Final questionnaire in the age group of 5 to 9 years

Details

1. Does your child has any difficulty in walking alone in the corridor at school without bumping into objects or people
2. Does your child has any difficulty in copying from blackboard while sitting on front bench in your class.
3. Does your child has any difficulty in reading the bus number
4. Does your child has any difficulty in reading your textbooks at arms length
5. Does your child has any difficulty in writing along a straight line
6. Does your child has any difficulty in finding the next line while reading when you take a break and then resume reading
7. Does your child has any in locating the dropped objects within the class room
8. Does your child has any difficulty in locating/identifying food on your plate while eating
9. Because of vision how much problem does your child have in seeing if there are animals or vehicles when walking
10. Because of vision how much problem does your child have in going out at night
11. Because of vision how much problem does your child has in locking or unlocking the door
12. Because of vision how much problem does your child has in seeing differences in colors
13. Because of vision how much problem does your child has in going to social functions such as weddings/birthday parties
14. Because of vision how much problem does your child has in finding your way indoors
15. Because of eye problem do you feel frightened that your child may lose remaining vision
16. Does your child has reduced vision

In the age group of 10 to 15 years

Details

1. Because of your vision how much problem do you have in finding your way indoors
2. Because of your vision how much problem do you have in seeing differences in colours
3. Do you have difficulty in applying tooth paste on your toothbrush
4. Because of your vision how much problem do you have in making out differences in coins or notes
5. Do you have any difficulty in climbing up and down the stairs
6. Because of your vision how much problem do you have in going to the toilet
7. Do you have any difficulty in locating/identifying food on your plate while eating
8. Do you have difficulty in lacing your shoe
9. Because of your vision how much problem do you have in seeing the steps of the bus when climbing in or out
10. Because of your vision how much problem do you have in seeing if there are animals or vehicles when walking
11. Because of your vision how much problem do you have in going to social functions such as weddings/birthday parties
12. Because of your vision how much problem do you have in going out at night
13. Do you have difficulty in locating a ball while playing with it in day light
14. Because of your vision how much problem do you have in recognising the face of a person standing near you
15. Do you have any difficulty in finding the next line while reading when you take a break and then resume reading
16. Do you have any difficulty in writing along a straight line
17. Do you have any difficulty in reading your textbooks at arms length
18. Because of your vision how much problem do you have in seeing when coming into the house after being in the sunlight
19. Because of your eye problem do you ashamed that you can't see
20. Because of your vision how much problem do you have in seeing outside in bright sunlight
21. Because of your vision how much problem do you have in recognising people from a distance
22. Do you have any difficulty in reading the bus number
23. Do you have any difficulty in copying from blackboard while sitting on front bench in your class
24. How do you think your vision is compared with that of your normal sighted friend?
25. Do you have reduced vision
26. Because of your eye problem do you feel frightened that you may lose your remaining vision
27. Because of your eye problem do you feel you have become a burden on others

*The above questionnaire can be used freely with the above citation: Wadhvani M, Vashist P, Singh SS, Gupta V, Saxena R, Kalavani M, et al. Development of age appropriate vision function questionnaire for children with visual impairment (CHVI-VFQ). Indian J Ophthalmol 2022;70:930-8.

LVP FVQ

Question	No difficulty	A little	Moderately	Quite a bit	Great	Cannot do this	Na
Do you have any difficulty in making out whether the person you are seeing across the road is a boy or a girl, during the day							
Do you have any difficulty in seeing whether somebody is calling you by waving his or her hand from across the road?							
Do you have difficulty in walking alone in the corridor at school without bumping into objects or people?							
Do you have any difficulty in walking home at night (from tuition or a friend's house) without assistance when there are streetlights?							
Do you have any difficulty in copying from the blackboard while sitting on the first bench in your class?							
Do you have difficulty in reading the bus numbers?							
Do you have any difficulty in reading the other details on the bus (such as its destination?)							
Do you have any difficulty in reading your textbooks at an arm's length?							
Do you have any difficulty in writing along a straight line?							
Do you have any difficulty in finding the next line while reading when you take a break and then resume reading?							
Do you have any difficulty in locating dropped objects (pen, pencil, eraser) within the classroom?							
Do you have any difficulty in threading a needle?							
How much difficulty do you have in distinguishing between 1 rupee and 2 rupee coins (without touching)?							
Do you have difficulty in climbing up or down stairs?							
Do you have difficulty in lacing your shoes?							
Do you have difficulty in locating a ball while playing in the daylight?							
Do you have difficulty in applying paste on your toothbrush?							
Do you have difficulty in locating food on your plate while eating?							
Do you have difficulty in identifying colors (e.g., while coloring)?							
How do you think your vision is compared with that of your normal-sighted friend? Do you think your vision is							
As good as your friend's							
A little bit worse than your friend's							
Much worse than your friend's							

Question	No difficulty	A little	Quite a bit	A lot	Cannot do this
Because of your vision, how much problem do you have in climbing stairs?					
Because of your vision, how much problem do you have in making out the bumps and holes in the road when walking?					
Because of your vision, how much problem do you have in seeing if there are animals or vehicles when walking?					
Because of your vision, how much problem do you have in finding your way in new places?					
Because of your vision, how much problem do you have in going to social functions such as weddings?					
Because of your vision, how much problem do you have in going out at night?					
Because of your vision, how much problem do you have in finding your way indoors?					
Because of your vision, how much problem do you have in seeing the steps of the bus when climbing in or out?					
Because of your vision, how much problem do you have in recognizing people from a distance?					
Because of your vision, how much problem do you have in recognizing the face of a person standing near you?					
Because of your vision, how much problem do you have in locking or unlocking the door?					
Because of your vision, how much problem do you have in doing your usual work either in the house or outside?					
Because of your vision how much problem do you have in doing your work up to your usual standard?					
Because of your vision, how much problem do you have in searching for things at home?					
Because of your vision, how much problem do you have in seeing outside in bright sunlight?					
Because of your vision, how much problem do you have in seeing when coming into the house after being in the sunlight?					
Because of your vision, how much problem do you have in seeing differences in colors?					
Because of your vision, how much problem do you have in making out differences in coins or notes?					
Because of your vision, how much problem do you have in going to the toilet?					
Because of your vision, how much problem do you have in seeing objects that may have fallen in the food?					
Because of your vision, how much problem do you have in seeing the level in the container when pouring?					
Psychosocial Impact Scale Because of your eye problem, do you feel frightened to go out at night?					
Because of your eye problem, do you enjoy social functions less?					
Because of your eye problem, are you ashamed that you can't see?					
Because of your eye problem, do you feel you have become a burden on others?					
Because of your eye problem, do you feel frightened that you may lose your remaining vision?					
Visual Symptom Scale Do you have reduced vision?					
Are you dazzled by bright light?					
Is your vision blurred in sunlight?					
Does bright light hurt your eyes?					
Do you close your eyes because of light from vehicles?					
Does light seem like stars?					
Do you have blurred vision?					