# Patient Perspectives on Acquiring Spectacles: A Cambodian Experience

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**Purpose:** To assess the perspectives of patients who acquired spectacles from an eye unit/vision center in Cambodia.

**Design:** A sample (n = 62) of patients was selected across 4 provinces: Prey Veng, Siem Reap, Battambang, and Takeo.

**Methods:** The Patient Spectacle Satisfaction Survey covering demographic and semistructured questions regarding patient satisfaction, style, and costs incurred was used to collect data. Information was transcribed and translated into English and analyzed by thematic coding using NVivo.

**Results:** Although there were more women seeking eye health care treatment, there was no significant age difference. Patient satisfaction levels were high although the patients had to pay for transportation, registration, and the glasses themselves. A total of 60 patients (96.7%) stated they would recommend the refractive service center to others. Despite a high level of awareness of eye disease such as cataract, only 2 in 10 people could accurately identify cataract as a major cause of poor vision or blindness. Most of the people (52%) blamed bad vision or blindness on dust or other foreign objects getting into the eye, old age (31%), or poor hygiene (16%).

**Conclusions:** Most people will pay eye care costs once barriers to seeking treatment have been broken via education and encouragement. Satisfaction of wearing spectacles was associated with improved vision; style, color, and fit of the spectacles; and protection from sunlight and dust. The proximity of and easy access to health facilities influenced patient desire to seek treatment.

**Key Words:** patient satisfaction, effectiveness, eye health services, refraction, acquiring spectacles, Cambodia

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Uncorrected refractive error is a major cause of vision impairment, especially in developing countries.[1] The correction of refractive error can be effectively addressed through the provision of prescription spectacles. Previous studies have demonstrated that the uptake of services was associated with the lack of affordable services and the low procurement rate of spectacles.[2,3] In southern India, the use of rural vision centers, where spectacles can be prescribed and purchased, was shown to be associated with patient satisfaction.[4] Some barriers to accessing services included the location of the vision center, human resources, optical delivery time, and the quality of the spectacles.[5] The issue of access and the level of patient satisfaction are essential components to the delivery of eye health care refractive services, but evidence-based research about how patients perceive the use of spectacles remains limited.

There also remains some ambiguity about the phenomena termed *patient satisfaction*. In a review article, "The measurement and meaning of patient satisfaction", Ware et al summarized the dimensions of patient satisfaction to include the art of care, technical quality of care, accessibility and convenience of care, finances, physical environment, availability of care, continuity of care, and the efficacy or outcomes of care.[6] Penchansky and Thomas[7] discussed the "concept of access," specifically focusing on availability, accessibility (location-related issues), accommodation (the manner in which services are provided), affordability (cost and perception of worth), and acceptability in relation to health care policy and health services.

In this pilot study, the aim was to assess patient perspectives about their acquisition of spectacles, their level of satisfaction, and the use of spectacles.

## MATERIALS AND METHODS

### Site Selection and Respondents

This study forms part of a larger study about the planning of eye health care within the public health systems of Prey Veng, Siem Reap, Battambang, and Takeo provinces in Cambodia from December 2012 to February 2013.

A convenient sample of patients (adults) was selected from eye unit records in consultation with staff. No randomized sampling method was used. Twelve patients were selected (6 men and 6 women) from refraction services (Prey Veng, Siem Reap, and Battambang eye units; Takeo Eye Hospital; and Kiri Vong District Hospital Vision Centre). Patients were also selected based on distance (near and far) from the eye unit. For example, in Prey Veng, Chi Phuch and Svay Chrum Health Centers were selected, which were 2 or more hours' travel from the Neak Loeung eye unit (Table 1). In Takeo Province, 12 patients were selected separately from the vicinity of the eye hospital and Kiri Vong Vision Centre. The patients were followed up and interviewed by a Khmer researcher.

The Patient Spectacle Satisfaction Questionnaire was used to collect data (Table 2). Open-ended questions asked patients about the style, fit, costs, and satisfaction with wearing the spectacles, and whether they would recommend the refraction services to others. A knowledge question was also included about cataract and its treatment. The question guide was professionally translated into Khmer and field-tested. Patient interviews were conducted at a neutral place close to the patient's home. During the interview, respondents were prompted when necessary, ensuring correct comprehension of the posed questions to preserve the quality of the data collection process. No refraction correction was checked.

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**TABLE 1.** Selection of Patients Who Were Drawn From 4 Areas

| Province | Location |
|---|---|
| Prey Veng Province | |
| Prey Veng District | Neak Loeung Hospital and eye unit functions as a provincial hospital 60 km from Phnom Penh. |
| Prek Khasy "B" | In the same area as Neak Loeung Hospital |
| Chi Phuch Health Centre | 50 km from Neak Loeung eye unit |
| Svay Chrum Health Centre | 57 km from Neak Loeung eye unit |
| Siem Reap Province | |
| Siem Reap Eye Hospital | Siem Reap city is 315 km from Phnom Penh. |
| Mundul Health Centre | Located in Siem Reap city |
| Prey Chrouk Health Centre | 60 km from Siem Reap city |
| Lveng Russey Health Centre | 90 km from Siem Reap city |
| Battambang Province | |
| Battambang Hospital and eye unit | 291 km from Phnom Penh |
| O Tambang Health Centre | 4 km from Battambang town |
| Otaki Health Centre | 12 km from Battambang town |
| Takeo Province | |
| Daun Keo | In the same area as Takeo Eye Hospital |
| Kiri Vong Vision Centre | Located at the Kiri Vong District Referral Hospital, 35 km from Takeo town |

The interviews were recorded for transcription and translation into English. Open coding of themes was used to identify common themes using NVivo software (version 10; QRS International, Doncaster, Victoria, Australia).

Ethics approval was granted by the National Ethics Committee for Health Research, Cambodia, and the Royal Victorian Eye and Ear Hospital, Human Research and Ethics Committee, Melbourne, Australia. All participants provided informed consent (by thumbprint) for the examination.

## RESULTS

### Demographic Information

A total of 62 respondents were interviewed: 11 in Battambang, 14 in Prey Veng, 13 in Siem Reap, and 24 in Takeo Province. The demographic information is shown in Table 3. The level of education varied across the provinces. In Takeo Province, 38% of the respondents reported they had not attended school; in Siem Reap, 23%; in Prey Veng, 14%; and in Battambang, 9%. Despite that, 77% reported they could read newspaper headlines. The patients' ages ranged from 23 to 86 years.

### Knowledge of Cataract and Treatment

Awareness was determined by whether a patient had heard of the particular eye disease: "Have you heard of cataract?" Overall, 95% had heard of cataract, and 84% reported that going to hospital and having surgery was the best treatment for this disease. Only 5 people did not know how cataracts were treated, and only 2 people thought traditional medicine or treatment offered the best cure.

### Patient Perspectives About Acquiring Spectacles

#### Awareness of Eye Health Care Services

Initially, patients were asked how they heard about the eye unit services. Word of mouth from other patients was commonly reported. Others reported that health center staff had recommended they attend the eye unit or vision center, as illustrated:

*The staff at the health center told us that eye glasses are sold in the center, if the patient wants to wear [glasses] after the operation. Word was spread around the community about the health center having eye treatment.* Prey Veng

*I heard that if we have pterygium or any other problem, we must go there [eye unit] to recover from it. I heard people say that when they went for treatment, they were charged 50,000 riel.* Prey Veng

**TABLE 2.** Questions Included in the Patient Spectacle Satisfaction Questionnaire

| Questions |
|---|
| Quantitative Questions |
| Sex |
| Education level |
| Poverty card |
| Assets: electricity, mobile phone |
| Knowledge of cataract and best treatment |
| What causes bad vision or blindness? |
| When did you go to the eye unit or vision center? |
| Why did you go to the eye unit or vision center? |
| If told to get glasses, where did you purchase the glasses? |
| How much did you pay for the glasses? |
| Do you still wear the glasses? |
| Qualitative Questions |
| How did you hear about the eye unit or vision center? |
| Why did you go to the eye unit or vision center? |
| How did you travel to the eye unit or vision center? |
| What costs were involved: loss of wages, transportation, meals, fees, medicines, glasses? |
| How did the glasses help your eyesight? |
| How did you like the style of the glasses? Color? Fit? |
| How satisfied were you with your glasses? |
| Would you recommend other people to go to the eye unit or vision center? Why? |


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**TABLE 3.** Demographic Characteristics of the Respondents by Province (N = 62)

| | Battambang (n = 11) | Prey Veng (n = 14) | Takeo (n = 24) | Siem Reap (n = 13) |
|---|---|---|---|---|
| Mean age, y | | | | |
| Men | 68.3 | 62.4 | 68.3 | 50.3 |
| Women | 64.1 | 57.4 | 70.9 | 60.5 |
| Age range, y | 46–75 | 23–79 | 18–86 | 61–83 |
| Sex, % | | | | |
| Male | 4 | 7 | 10 | 3 |
| Female | 7 | 7 | 14 | 10 |
| Education, % | | | | |
| No schooling | 9 | 14 | 38 | 23 |
| Completed secondary school | 9 | 0 | 13 | 0 |
| Reported as able to read newspaper headlines, % | 82 | 86 | 46 | 77 |

*I heard through the Pet [staff] at the health center that this hospital specializes in eye care, provides good treatment, and uses nice words. They also told that if we have eye problem, please do not tarry, hurry and go so that it can be healed quickly because eyes are very important.* Takeo

*I heard that getting your eyes peeled can restore eye sight; no need to wear glasses. People from Phnom Penh, Kampong Thom, Koh Thom, Kampong Cham were coming to get their eyes peeled at this hospital because this eye hospital specializes in eye care.* Takeo

*I heard that they have an eye specialist and that Pet [hospital staff including doctors and nurses] are good to patients. They do not discriminate.* Takeo

*My eye was painful, and I could not see clearly. When the outreach [nurse] came to conduct screening, they announced that people with cataract or pterygium may go and get treatment. I was told to get treatment. I registered my name to get treatment at once. Some people did not go, as they feared to go (fear of pain and some fear of any accident that might happen during the treatment). There were 21 people sent by Pet to go that day, but on the appointment date, only 6 people went and rode in the hospital car. Later, my eyes were healed, and my husband and my nephew/niece were also healed. Then most of them [the other people] were going to get their eye treatment by themselves.* Kiri Vong

*I heard the village chief telling the community that the eye unit team helped to remove eye cataracts for free.* Battambang

*I visited the Prey Chrouk community health center … and the community health staff sent me to the eye unit in Siem Reap for eye treatment.* Siem Reap

### Improved Vision

In summary, 55 patients (88.7%) said that spectacles helped them to see more clearly, whereas 4 patients (6.5%) reported there was no improved vision, and 3 patients were unsure.

Qualitative comments emphasized 2 main themes associated with improved vision, as illustrated:

*When I wear [the glasses], I see everything clearly; so it's easy for me if I want to do some work; if I don't wear [them], my vision becomes blurry.* Battambang

*It helps me to read a letter, see other people, and know them as well, and I could work at home.* Prey Veng

*I am a teacher. Without glasses, I could not write the curriculum or other teaching work.* Takeo

*It gives shadow and cooling [for] my eyes; I can see things clearly.* Battambang

### Less Eye Strain

Some patients described their experience as "not painful" when they were tested for glasses. Similarly, patients described that wearing glasses resulted in "less pain" or eye "frustration:"

*They [the villagers] asked me how difficult or painful it was [to get treatment]. I replied that it was not painful at all.* Takeo

*It also helps to reduce the pain.* Prey Veng

*It helps to reduce eyes from [being] frustrated.* Takeo

*The eyeglasses help to cool the eye cavity and give me more comfort to work.* Siem Reap

*It helps cool my eyes when I'm trying to look.* Prey Veng

### Eye Protection

A total of 92% (57/62) of patients reported that glasses protected their eyes from the sun's rays, dust, and other foreign objects, as stated:

*The glasses protect my eyes from the smoke, air and [provide] shade to the eyes, and particularly prevent rice seeds from hitting the eye while harvesting the rice yield.* Battambang

*It helps to protect my eyes from the sunlight; it helps to cover my eyes from the wind and the dust.* Battambang

*I wear it [glasses] while I'm working, farming, chopping wood, just to protect my eyes from dust, sand, or air.* Prey Veng

### Less Assistance From Others Required

A few patients reported they no longer needed the assistance of others for tasks around the home:

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*The [glasses] helped me to see even small things. I could work easily myself; no need of others' help.* Takeo

*It helps me to see very clearly. Easy to travel or do some sewing.* Takeo

### Level of Satisfaction With Spectacles

Patients were asked, "How satisfied were you with your glasses?" A total of 43 patients (69.3%) reported they were "satisfied." However, 11 patients (17.7%) reported being "not satisfied," and 8 (12.9%) were "unsure" (Fig. 1).

### Style, Color, and Fit of Spectacles

A total of 31 patients (50%) reported they "liked the style" of the glasses, 23 (37%) stated that "style was not important," and 3 were unsure.

Positive comments about style focused on color, fit, and shape, as illustrated:

*I prefer the black eyeglasses; they give more advantage such as protection [from] dust or a foreign body and shade the eyes.* Battambang

*I like the circle shape and the amber color; also, the handle is made from soft iron.* Battambang

*I like the style of my eyeglasses; it's amber, and the shape of the glasses is like an egg.* Prey Veng

*The model or style of the eyeglasses is not important, but quality is much more important.* Battambang

*Need good eyeglasses that cool the eye. The color does not matter.* Siem Reap

*I like the glasses arm made from iron, the square frame, and good quality.* Kiri Vong, Takeo

*It doesn't matter! I like the white glasses because I heard it helps to see more clearly.* Prey Veng

There were also negative comments about style, fit, and shape, as illustrated:

*I prefer clear glass lenses because of my age; if [I] wear black glass lens, the villagers criticize.* Prey Veng

*[I don't] like the black glasses that much; it is a little dark, but it is advantageous for covering the eye cavity and protect the entire eye.* Prey Veng

### Level of Confidence When Wearing Spectacles

In response to how it "felt wearing glasses," 39 patients (62.9%) said they felt positive wearing glasses, but 19 (30.6%) said they felt negative wearing glasses. Some respondents expressed feelings of shyness and embarrassment or said they were criticized by others while wearing their new glasses.

The patients who were satisfied with their glasses were often overjoyed with the usefulness of their glasses, but some also were negative about the quality and cost, as stated:

*I am really satisfied and love [the glasses] very much because [I] see very clearly. I can say that I love it more than my wife and my child.* Takeo

*These glasses are like having a perfect assistant.* Prey Veng

*I am really satisfied [with the glasses]. I have to take good care of them. [If] they break, my life will be hopeless again.* Takeo

*I like it because of the amber color, but the handle is easily broken, so I have to buy often. I don't have money to buy the expensive one like others. I always bought the cheap ones, around 3000 riel (less than 2 USD), that is why it is often broken.* Battambang

*I feel uncomfortable wearing the eyeglasses. The villagers always ask why I need to wear eye glasses.* Siem Reap

### Recommendation of Services to Others

Additionally, patients were asked if they would recommend the eye unit/vision center to others to acquire glasses. A total of 60 patients (96.7%) stated "yes" they would recommend that other people seek help for their vision at the health providers they attended. Several patients had already recommended the eye care services to other people. Many also mentioned they tried to dispel myths or fears surrounding seeking treatment. However, they often stated that the people did not go for treatment because of limited funds to pay for travel costs to the eye unit and because some patients did not "get better." This concern was particularly noted in Prey Veng Province.

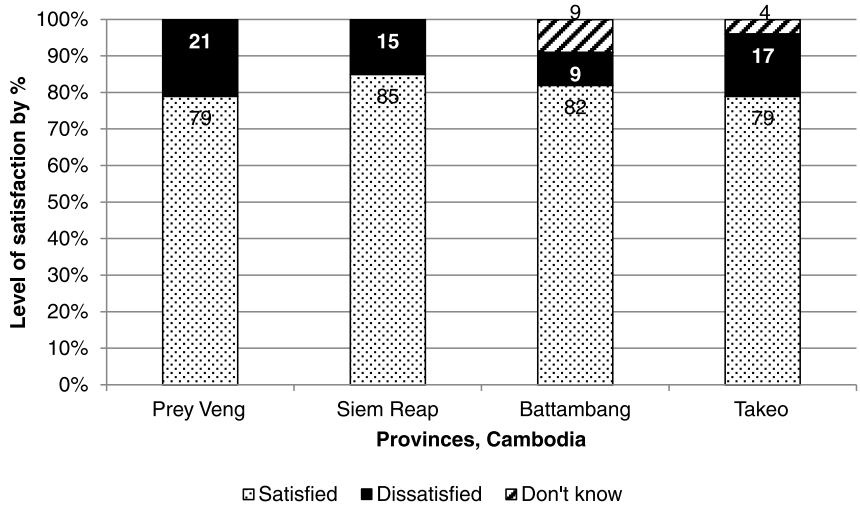



**FIGURE 1.** Levels of satisfaction reported among patients who acquired spectacles by province.


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*Some [people] do not want to go [to the eye unit] because they see that other people did not get better after getting eye treatment.* Prey Veng

*I told so many people and they said that if the eye unit comes to give treatment at the health center in the community, there will be a lot of eye patients. However, if the eye unit asks them to go to Neak Loeung, they will not go because they have to spend a lot [money] on traveling.* Prey Veng

Of the total group, only 2 people were uncertain if they would recommend the eye care services: one was from Battambang, and the other was from Prey Veng, as illustrated by the following comment:

*All eye patients received treatment, and they got better eye condition, except me. Now, my eye condition has become worse than before.* Prey Veng

### Costs

All patients incurred a variety of costs such as registration fees, treatment, medicine, meals, eye glasses (prescription reading glasses and/or sunglasses), transportation, and the loss of the day's wages. Most of the patients reported that they traveled at their own cost, although a few received free transportation from the health care provider. Some patients reported that other people were reluctant to go for treatment owing to concerns about the loss of income and survival; therefore, they would often "bear with the problem."

Not all patients reported all the costs they incurred; thus, it was not possible to calculate all the direct and indirect costs. Costs also varied widely depending on the province. The registration cost was generally about 4000 riels (2 USD). The median price of spectacles was 5000 riels. In Takeo Province, the cost ranged between 65,000 and 3000 riels. Several patients reported paying as much as 30,000 riels in Prey Veng Province. However, at least 35% of the patients did not pay for their spectacles. Three people (<5%) said they did not purchase eyeglasses although they were advised they needed spectacles. Specific reasons were not given.

## DISCUSSION

Determining patients' perspectives about their experiences acquiring refraction services and spectacles will help to improve the delivery of eye health care services, particularly in rural communities, by informing delivery approaches and possible policy changes.

The level of knowledge of cataract had significantly improved compared with the population-based study conducted in Takeo Province in 2009, when only 19% reported a correct answer.[8] This positive change would be expected, as these patients had attended eye health education talks given by community health workers, including a cataract removal campaign, and suggests that community education has an impact on patient knowledge.

Refractive services in some health systems are allocated to certain centers without considering the barriers to access for communities such as cost and difficulty of travel.

Patients provided a variety of descriptions about their expressed level of satisfaction with acquiring spectacles, including "improved vision to read," "carry out tasks about the home," "go to the field to work," "less eye strain," "less pain," "protection from sunlight, dust, and objects," and about the "quality," "style," "color," and "fit" of the spectacles. This adds a new dimension to the focus on vision correction that is usually used as a criterion for dispensing spectacles. Rural communities experience environments that ensure that spectacles can serve a broader role. This should be factored into the provision of eye wear for centers serving such communities.

A limitation of this study was the small sample size. However, the sample drawn from 4 provinces showed similarities and some differences in patients' descriptive comments about their experience of acquiring spectacles. Additionally, the refraction error was not tested for each of the patients. This information would have been useful to compare with patients' qualitative comments about their dislike of the spectacles. It seemed that many of the negative comments were associated with the "fit" or people's opinions.

Most people were positive about their experience wearing spectacles, but some described being criticized by other villagers: "they would laugh at me because of the big glasses." The reason for this criticism was not determined. However, in a previous study, wearing glasses was still associated with negative consequences of the Pol Pot regime.[8] This result identifies the fact that the quality of services alone is insufficient in motivating communities to access refractive services and spectacles in particular. Health promotion and awareness campaigns should be considered to create an enabling environment for the purchase and use of spectacles. Furthermore, it is appropriate to assess people's perspectives about issues of cost, color, style, and quality to inform the acquisition of suitable supplies.

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