Assessment of Community Vision Centers in Bangladesh

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Abstract

By establishing community vision centers, the government of Bangladesh chose to include basic eye care in the range of primary health care services. Currently, eight base centers oversee the operation of 135 community vision centers under National Eye Care (NEC).

A mixed-method study design was conducted that included both quantitative and qualitative research. To establish the research strategy, a meeting of an expert committee was organized. The study team created a semi-structured questionnaire and checklists in accordance with the recommendations made at the expert committee meeting. From all 8 base centers—Gopalganj, Manikganj, Mymensingh, Cumilla, Chattogram, Barisal, Rajshahi, and Rangpur, data were gathered. 27 CVCs were chosen at random from among 135 CVCs (assumed to represent 20% of all CVCs) from all 8 base centers for this study. Ten (10) patients were chosen at random from each one. Interviews were conducted with 270 patients in total.

According to the Donabedian paradigm, a questionnaire and checklist were created in accordance with the recommendations made at the expert committee meeting for the following subjects such as structure (staff, equipment, supplies), process (provider-patient contact, prescription of medications and spectacle), and result (patient satisfaction, waiting time, and money saved).

In order to assess the present state of base centers and CVCs and to collect both quantitative and qualitative data, the primary investigator traveled to all eight base centers as well as twenty-seven CVCs. As part of the qualitative data, in-depth interviews with administrators, service providers, IT professionals working in CVCs, local elites, and hospital managers were undertaken. For the purpose of gathering patient data, one medical officer was designated from each Upazila Health Complex.

This Study uncovered some important information. It was observed that provider-patient interaction was very good in CVCs. The majority of patients were satisfied. The use of highly expensive, specialist equipment in CVCs can be avoided. Providing this expensive equipment to the base centers rather than CVCs would be more advantageous and cost-effective. Communication with the CVCs would have been better if NEC program managers/deputy program managers were involved only in the program rather than as clinicians. A workshop on sharing experiences amongst service providers at least once a year might help to solve a lot of problems. Linkage of CVCs with community clinics can have a special impact on referral networks and community involvement.

Prior to starting new CVCs, attention should be paid to finding solutions to current CVC issues.

It is expected that knowledge gained from this study will help in planning policies for further improvement of quality eye health care service delivery for people of remote areas.

Introduction:

The most vital sense for humans is vision, which has a significant impact on survival, well-being, economic growth, and sustainable development. Nearly 250 million individuals, including 36 million blind people, live with moderate to severe visual impairment worldwide. Due to a lack of reading glasses, more than a billion individuals suffer near vision impairment.[1]

The Global Action Plan (GAP) emphasizes strengthening Primary Eye Care (PEC) as an approach to achieving Universal Eye Health Coverage (UEHC). WHO defines UEHC as "ensuring that all people have

access to needed promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that people do not suffer financial hardship when paying for these services.2 It also highlights the integration of PEC to address primary health care using the health system approach.2 A good PEC program should also ensure equity, community participation, inter-sectoral collaboration, and long-term sustainability for wider impact and healthy communities.3

A large proportion of non-government organizations have come up with implementing UEHC through their PEC network of vision centers (VCs). VCs in India operate in line with India's National Program for Control of Blindness (NPCB). VCs are part of a larger eye care network and provides PEC in remote rural areas of the country. They are staffed by locally recruited, well-trained technicians and typically offer following core services: refraction and dispensing of spectacles, diagnosis of common eye conditions, and referral of cases needing further intervention to a hospital.4

Vision Centers are most effective if there is coordination, cooperation, and integration of the Vision Centre services with other levels of service, including outreach, and rural and regional hospitals. Vision Centers are a way of extending eye care into the community. They could be located in a district hospital, a community primary care clinic, or a stand-alone entity, depending on local requirements and norms.4

To provide community-level eye care and to accommodate local conditions in various nations, the Vision Center concept is customizable. The various health and eye care delivery systems in different nations, regions, and needy groups are accommodated and complemented by vision centers that come in a wide variety across the world.

Here are some examples that show how adaptable the Vision Center paradigm is:5

*   Service Population and Linkages: Each Vision Centre is designed to cater to the vision needs of a population of approximately 50,000 people. This ratio can be adjusted to accommodate local circumstances affecting accessibility and availability of services.

*   Physical Infrastructure and Equipment: The essential elements for a Vision Centre are an appropriate, accessible location and equipment to provide primary eye care and refractive care. Local outcomes and referral pathways are then tailored to fit within existing eye care systems and protocols.

*   Staffing and Procedures: Each Vision Centre is staffed by an appropriately trained, preferably local, person. Depending on the circumstances, this person may be an optometrist, a vision technician, an ophthalmic nurse, or another cadre of mid-level eye care practitioners. As perceived by those using the Centre, the success of the Centre is heavily influenced by the availability, timeliness, and quality of the service.5

The government of Bangladesh has adopted a model developed by "Arvind Eye Care System" for integrating primary eye care into the portfolio of primary health care services by setting up Community Vision Centers (CVCs) around a government tertiary eye hospital as base centers which would provide teleconsultation services, provide surgery, advanced investigations, and treatment to patients referred by the CVCs. The Bangladeshi government also decided that CVCs should be set up in Upazila health complexes and that general nurses should be chosen and trained to work at the CVCs as a result.6

At present one hundred and thirty-five CVCs are running under Eight base centers. Sheikh Fazilatunnesa Mujib Eye Hospital and Training Institute, Gopalganj; Manikganj Medical College Hospital; Cumilla Medical College Hospital; Mymensingh Medical College Hospital; Rajshahi Medical College Hospital; Rangpur Medical College Hospital; Barishal Medical College Hospital and Chattogram Medical College Hospitals are working as base centers for CVCs.

The aim of this study was to assess the current status and explore the potential areas for improvement of community vision centers in Bangladesh.

Methodology:

A mixed-method study design using both quantitative and qualitative research was adopted.

An expert committee meeting with representatives of national eye care, the ex-regional advisor of WHO SEARO, the Principal of Sheikh Sayera Khatun Medical College, and ophthalmologists were held to set the research plan.

The Donabedian model was adopted for the assessment of community vision centers. This model provides a framework for examining health services and evaluating the quality of healthcare.[7] This model assesses the quality of a service provided at VC based on three main categories: (a) structure (building, staff), (b) processes (patient pathways, referral patterns), and (c) outcomes (quality of life, morbidity, waiting times).

The semi-structured questionnaire and checklist were prepared by the research team as per the guidelines of the expert committee meeting. The questionnaire and checklist were prepared on structure (staff, equipment, supplies), process (provider-patient interaction, medicine prescribed, spectacle prescription), and outcome (patient satisfaction, waiting time, money saved).

Data were collected from all 8 base centers. Out of 135 community vision centers (CVCs), 27 CVCs (the thumb rule of 20% of total community vision centers) from all 8 base centers were randomly selected for this study. Ten (10) patients were chosen at random from each one. 270 patients from CVCs made up the research population.
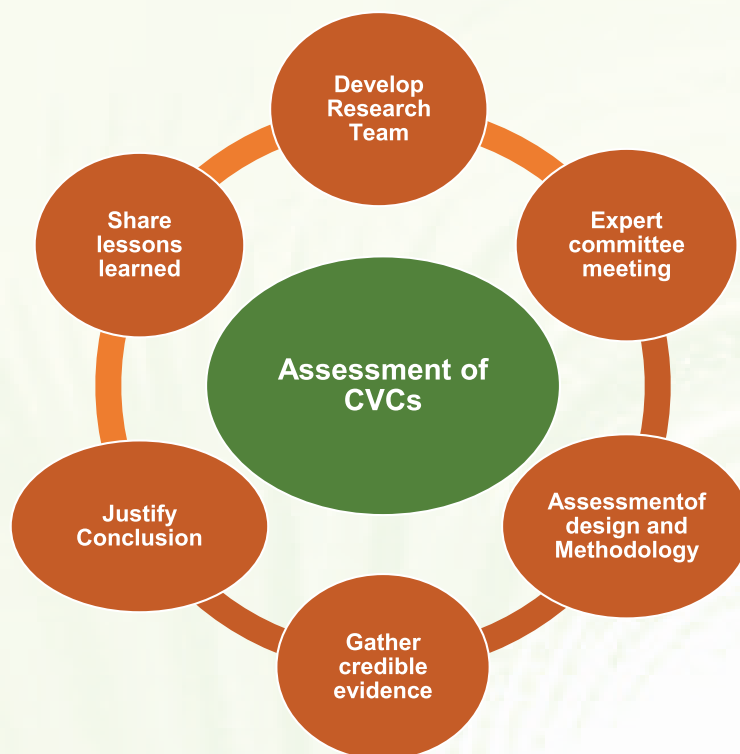
Figure 1: Steps of Assessment

**Figure 2: Location of Base Centers and Community Vision Centers**

Table 1: Lists of Base Centers and Community Vision Centers (CVCs)

Sl No	Name of Base Centers	Name of Vision Centers	Number of CVCs
1	Sheikh Fazilatunnesa Mujib Eye Hospital and Training Institute, Gopalganj	Kotalipara Upazila Health Complex, Gopalganj Mollarhat Upazila Health Complex, Bagerhat Lohagora Upazila Health Complex, Norail Rupsha Upazila Health Complex, Khulna	4
2	Barishal Medical College Hospital, Barishal	Agoiljhora Upazila Health Complex, Barisal Kolapara Upazila Health Complex, Potuakhali Amtoli Upazila Health Complex, Borguna Rajapur Upazila Health Complex, Jhalokathi	4
3	Chattogram Medical College Hospital, Chattogram	Potia Upazila Health Complex, Chottogram Lohagara Upazila Health Complex, Chottaogram Chokoria Upazila Health Complex, Cox's Bazar Ukhia Upazila Health Complex, Cox's Bazar	4
4	Rajshahi Medical College Hospital	Puthia Upazila Health Complex, Rajshahi Nacho, Upazila Health Complex, Chapainobabganj Manda Upazila Health Complex, Naogaon	3
5	Rangpur Medical College Hospital	Rjarhat Upazila Health Complex, Kurigram Parbotipur Upazila Health Complex, Dinajpur Taraganj Upazila Health Complex, Rangpur	3
6	Manikganj Medical College Hospital	Ghior Upazila Health Complex, Manikganj Kalihati Upazila Health Complex, Tangail Kaliakoir Upazila Health Complex, Gazipur	3
7	Cumilla Medical College Hospital	Chandina Upazila Health Complex, Cumilla	3

Results:

Availability of Medicine and Spectacles in CVCs

*   Medicines were available 100% in CVCs under Barishal, Gopalganj, Cumilla, Manikganj, Mymensing, and Rangpur base centers, 50% under Chattogram, and 67% under Rajshahi and Rangpur base centers.
*   The availability of spectacles in CVCs under the base centers in Gopalganj, Cumilla, Manikganj, and Mymensing were 100%. But in some CVCs spectacles were not available for 3 months to one year.


Figure 3: Availability of Medicine and Spectacles in CVCs
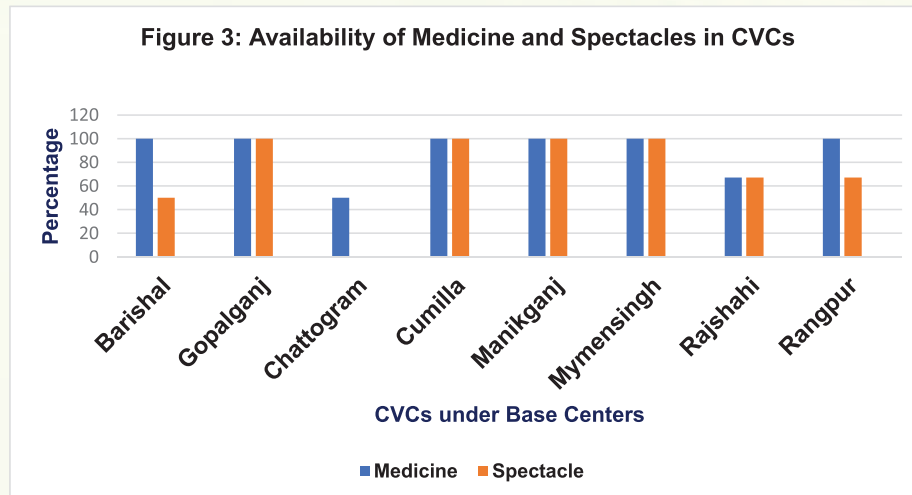
Provider-Patient Interaction:

To know the provider-patient interaction principal investigator observed the behavior of the nurses toward the patients. The responses were categorized as "(1) very good (2) good (3) satisfactory (4) not satisfactory. It was observed that provider-patient interaction was very good 91% and good 9%.

Also, three questions were asked of the patients: Did the Nurses provide enough time when discussing your problem? Did the Nurse examine your eye? Did the nurses explain the prescription? All the answers were "yes".

Patient waiting time for Prescription:

The base center facilities provide consultations and prescriptions to CVC patients. So, we learn how long it takes to receive a prescription from the base center. Depending on the availability of doctors at the base centers and the condition of the servers, patients have to wait for prescriptions in CVCs might range from 15 minutes to 2 hours.


Chart 3 : Patient waiting time for Prescription
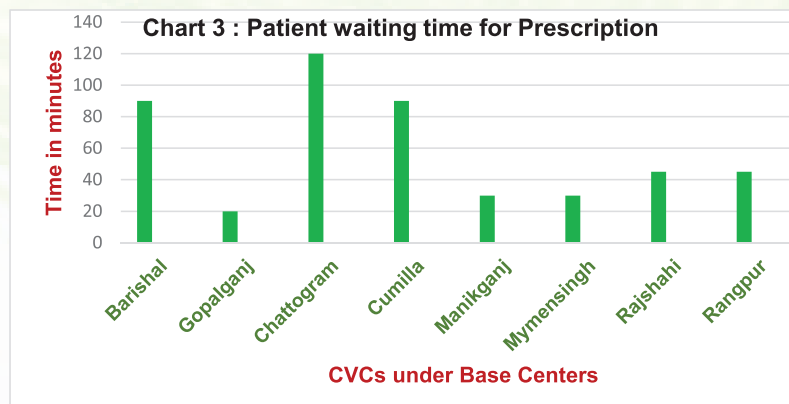
Saving money by utilizing CVCs services:

Patients were questioned about how much money they would have spent elsewhere for treatment if these services weren't offered here in order to determine how much money they would have saved by using CVC. Here, only out-of-pocket expenses are taken into account. We observed that using CVC for services results in savings ranging from 310 to 1200 taka.

Patients' Satisfaction with getting Services in a rural are

When seeking treatment, patients were asked if they were satisfied. Highly satisfied, satisfied, not satisfied, and poor were offered as the four response possibilities. The majority of patients—68%—were highly satisfied. Nobody selected "not satisfied" or "poor" as an option. 32% of patients expressed satisfaction, however, they wished they had received the prescribed spectacles.

Patients' satisfaction on getting services

- 32% — Highly Satisfied
- 68% — Satisfied
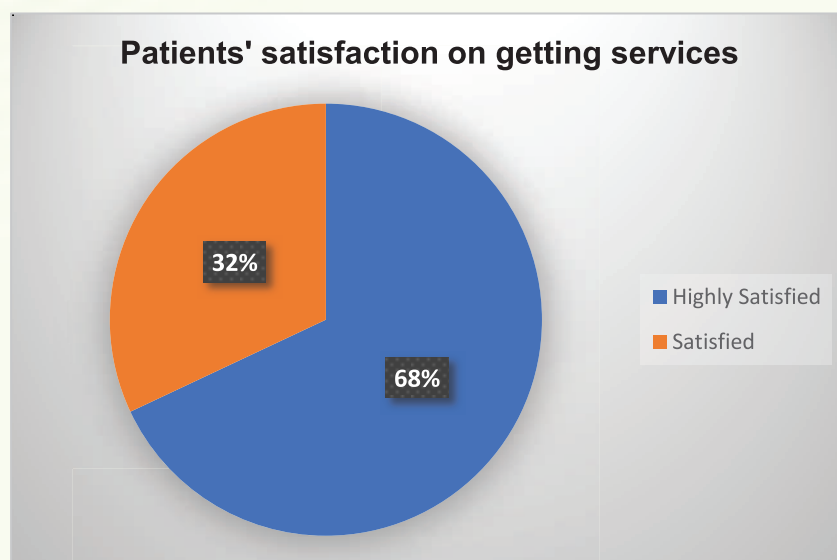
Challenges/Barriers and Areas of Improvement:

In order to pinpoint difficulties or hurdles and look into potential areas for program implementation improvement, qualitative data were gathered. Health administrators, service providers, IT staff members, and local elites were all approached for in-depth interviews. The following difficulties or impediments were identified.

- The major barrier for providing continuous services is the problem with the server. Due to server issues, doctors from base centers must make patients of CVCs wait a very long period for prescriptions. Their regular activities are so hindered. Patients, on the other hand, don't want to hold out for a long period to get a prescription.
- The Aravind Eye Hospital in India's server is being utilized in CVCs in Bangladesh.
- Physical servers are being used in CVCs. If the cloud-based modern server is not used, the patient will not get the desired services.
- There should be clear policies regarding server usage and information provision.
- A serious issue also arises when services are being given and the power supply is interrupted.
- Nearly all base centers lack sufficient doctors.
- There is no alternative plan or strategy in place for trained, competent nurses who are currently work-

ing on CVCs but are being promoted, or taking maternity leave.

- In one base center, some expensive equipment from the previous year wasn't installed. Additionally, the service providers lack training to operate this equipment. Thus, quality service delivery requires prompt installation and appropriate training of service providers.
- Many patients visit in order to receive free medicine and spectacles. Therefore, the lack of prescribed medicine and spectacles sent a negative signal. The CVCs must stock these products.
- In some CVCs patients who were referred to the base canter for further treatment were not willing to go there for several reasons
- Base center is far away from that CVCs
- Many NGOs organize eye camps
- Elderly patients could not move alone and family members were not interested to go to the base center
- For referred patients, it would be a good idea to make transportation arrangements.
- The majority of service providers screamed for refresher training. It would be less expensive if the individual base centers hosted these refresher training sessions.
- Workshops are essential for the experience-sharing of service providers, health managers, and NEC members.
- Linkage of CVCs with community clinics can have a special impact on referral networks and community involvement.
- Before establishing new CVCs, it could be crucial to resolve existing CVCs issues.

Discussion:

To the best of our knowledge, this is the first time CVCs have been assessed in Bangladesh.

One of its most significant components is the placement of the CVCs. In areas where NGOs and for-profit eye care facilities provide eye care services, installing CVCs ought to be avoided. In this analysis, it was revealed that when alternative eye care facilities are close to CVCs, patients who have been sent to the base centers do not go there. It is essential to determine and investigate the reasons why the referred patients are not present at the base centers.

It's critical to quickly resolve server issues. If this problem is not remedied, the base center physicians won't be able to do anything except watch everything else happen. Additionally, individuals in need of medications must wait hours. For security reasons, we ought to put up our own server. The time has come to set up server security to stop unauthorized users from accessing and copying data. The policies and memoranda of agreement relevant to CVC are subject to disclosure to the head of base centers and CVCs.

The administration of medications that cannot be used in CVCs (such as steroids and anti-glaucoma medications) is discouraged. If these medications are prescribed without a physical examination of the patient, there is a risk. The base center may get these medicines.

The use of expensive, specialist technology in primary eye care facilities such as CVCs may be avoided. Nurses, for instance, do not feel comfortable using an "Applanation Tonometer" to measure intraocular pressure (IOP). In that situation, IOP may be measured using a schizont tonometer. The usage of expensive fundus cameras in CVCs may need to be reconsidered in light of cost-effectiveness. Simple cameras or smart phones with a specific lens may readily record fundal pictures. The major goals of primary eye care services like CVCs are the treatment of simple eye conditions, early detection of potentially blinding

or complex eye conditions, and prompt referral to the best higher facility. Therefore, providing this expensive technology to medical college hospitals and institutes rather than CVCs would be more advantageous and cost-effective.

NEC members need to communicate with UHFPOs and CVC nurses more frequently. It is more appropriate for full-time program staff members to visit and maintain contact with CVCs than it is for clinicians. Numerous issues might be solved by a workshop on service providers exchanging knowledge at least once each year. High-quality services and sustainability would be CVCs' key goals. Prior to starting new CVCs, attention should be paid to finding solutions to current CVC issues.

Conclusion:

The expansion of the eye health sector and its integration into the primary healthcare system are being steered by significant governance mechanisms that the government has put in place. This evaluation may be useful in highlighting the problems and obstacles a patient encounters while trying to obtain treatment, pinpointing what influences patient happiness in rural areas, and pinpointing difficulties and roadblocks to program implementation and success. It is anticipated that the knowledge gathered from this study will aid in the design of strategies for further enhancing the delivery of high-quality eye healthcare services.

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