



# Community Eye Health MSc



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All MSc students at the International Centre for Eye Health (ICEH) carry out a dissertation project as part of the Community Eye Health MSc course. Most of the dissertations are excellent pieces of original and valuable research work, sometimes the first of their kind in their authors' country or region.

The projects tend to focus on the VISION 2020 priority disease groups: cataract, refractive errors, trachoma, childhood blindness, and diabetic retinopathy.<sup>1</sup> The ideas for projects often stem from the students' own experiences in the delivery of eye care in their country or region. The projects include population-based surveys to identify the burden and causes of blindness; specific, hospital-based research measuring the outcomes and outputs of services; and evaluations of the impact and cost-effectiveness of specific programmes.

The studies used either quantitative or qualitative methods, or a combination of the two. Quantitative studies are designed to answer the question "How many?" and are dependent on the size of the sample for their accuracy. Qualitative studies are designed to answer the question "Why?" and information is sourced from persons affected by or involved in the situation (also called subjects). The accuracy of these studies lies in the explanations given, not in the number of people interviewed (the size of the sample).<sup>2</sup>

The conclusions and recommendations from these dissertations are often translated into action plans to reduce the burden of blindness; they therefore have an impact in the real world. In addition, ICEH considers project work to be the most important component of the learning process in the Community Eye Health course, as it builds on theoretical knowledge by allowing students to apply their skills.

The ICEH MSc projects summarised below, along with two projects from MSc students at the Pakistan Institute of Community Ophthalmology, are presented under the following headings:

**Prevalence:** In this group of studies, the methods used were mainly quantitative. A sample size was determined and the



The ICEH Community Eye Health class of 2005 with Course Organiser Daksha Patel. UK

Anne Koeber

## 'These MSc dissertations are often translated into action plans to reduce the burden of blindness: they have an impact in the real world'

data were collected using pre-designed data-recording forms. The actual methods used to find subjects ranged from using census data to using the key informant method. The data were analysed using specific statistics software packages.

**Prevalence and perceptions:** These studies used a combination of quantitative and qualitative methods. The students collected some of their baseline data using quantitative methods, such as counting how many operations had a visual outcome >6/12. Qualitative information, such as information about why leprosy patients did not come for cataract operations, was explored using interviews and focus group discussions with relevant individuals. The analysis of the qualitative data was done by immersion into what people had said and identifying common themes (a thematic framework).

**Assessing resources:** These studies looked at what resources were available and how facilities or staff were being utilised. The methods chosen to find the answer varied. Some cases required clear quantification, e.g. using a questionnaire to evaluate neonatal care facilities. Other projects required a flexible, qualitative approach that would allow the student to

obtain information from a number of sources, such as interviews or focus group discussions.

**Evaluation of interventions/programmes:** These projects looked at how effective a programme/intervention was at achieving its goal. A variety of methods were used. In evaluating the impact of health education, qualitative methods such as focus group discussions and interviews were used. In another study, identifying how many people had taken up trichiasis surgery clearly required quantitative measurement.

**Cost:** These projects involved the collection of quantitative information about the cost of providing a service. The data were collected through questionnaires. In addition, these studies required a complex calculation of time and cost per procedure, which was related to the visual outcome from the procedure.

### References

- 1 WHO. Global Initiative for the Elimination of Avoidable Blindness. WHO/PBL/97.61 Rev.2, 1997.
- 2 Smith P and Morrow RH (eds). Methods for field trials of interventions against tropical diseases: a toolbox. UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases. Oxford: Oxford University Press, 1993.

## Prevalence

### A survey of childhood blindness in three schools for the blind in Zambia



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**Aim:** To assess the causes and distribution of blindness in children in three schools for the blind in Zambia, and to estimate the average cost of primary education per child per year. The results of this study will be used to develop baseline data for planning a nationwide intervention.

**Methods:** This was a descriptive, cross-sectional study with a quantitative component, conducted in three schools for the blind in Zambia. The World Health Organization Prevention of Blindness childhood blindness proforma was used to collect data and a questionnaire on cost was developed and administered to the head teachers. The data were recorded in Excel and analysed in the Epi Info™ statistical software package, version 6.

**Results:** A total of 133 children were examined. The sex distribution was 91 males (68.4%) and 42 females (31.6%), giving a male to female ratio of 2.2:1. The age range was 6–24 years with a mean age of 13.9 years. A total of 64.7% of the children were below 16 years of age. Whereas 1.5% of the children were found to have no visual impairment, the majority (60.9%) were blind. The major anatomical site for visual loss was the retina (30.8%). Oculo-cutaneous albinism accounted for 68.3% of all visual loss affecting the retina. Hereditary diseases (36.8%) were the most common cause. Measles and vitamin A deficiency combined accounted for 65.2% of all causes due to childhood factors. A total of 60.2% of children were blind from conditions that could have been avoided. Fifty per cent of children changed visual status from blind to severely visually impaired after refraction. Overall, 23.3% of children were recommended for enrolment into mainstream education. The three schools had unique features, which meant there was a wide variation between them in the total yearly cost per pupil. It was therefore not possible to determine a yearly cost per child that could be used as a guide for the whole country.

**Conclusion:** If low vision aids are provided, a significant proportion of visually impaired children can be given the same opportunities and educational experiences as sighted children.

### Using the key informant method to investigate childhood blindness related to vitamin A deficiency disorder in six rural sub-districts in Bangladesh



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**Aim:** This study was undertaken to assess the prevalence, causes, and risk factors of childhood blindness related to vitamin A deficiency disorder (VADD) in six rural sub-districts in Bangladesh.

**Methods:** The study was carried out in rural sub-districts of Kishoreganj during June and July 2006. Risk factors of VADD-related childhood blindness were explored in six rural sub-districts. The key informant method of identifying blind children was used for the study. Key informants are unpaid volunteers from the local community who know their community very well. After receiving training from the field team of the Child Sight Foundation, the key informants had two weeks to identify blind children and motivate parents to bring the child for an eye examination. A cross-sectional study design was used to determine the prevalence and causes of childhood blindness for the Kishoreganj district. A case-control study was carried out to

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## QUALITATIVE AND QUANTITATIVE METHODS

### When to use which method

Qualitative methods	Quantitative methods
Use when the research question requires narrative data or data about meaning, e.g. patients' attitudes towards a new treatment, or the reasons that women do not come for cataract surgery	Use when the research question requires numerical data, e.g. the number of people affected by a specific condition or the risk factors for a particular disease
Use when the subject matter is unclear or unknown, e.g. health-seeking behaviour, personal experiences, or perceptions	Use when the subject matter is or can be clearly defined, e.g. blindness is defined as visual acuity <3/60 in the better eye
Use when variables are unknown or the definition is unclear, e.g. providers' or consumers' definitions of cataract blindness	Use when the condition can be measured, e.g. visual acuity can be measured with a Snellen chart
Use when there is a need to explain or relate aspects of behaviour to a wider context, e.g. lack of transport as a barrier to the uptake of cataract services	Use when there is no need to explain or relate findings to social or cultural settings because the situation is well understood, e.g. the prevalence of trichiasis cases in a region where trachoma is endemic
Use when a flexible methodology is needed which can expand as issues are explored in depth and which allows for the discovery of the unexpected	Use when the research is designed in advance and the methodology is to be repeated with accuracy at different times and places
Use when it is important to study issues in depth and in detail	Use when it is important to be able to generalise results and make comparisons across populations

### Comparing qualitative and quantitative methods

	Qualitative methods	Quantitative methods
<b>Methods</b>	In-depth interviews, focus group discussions, observation, etc; requires capturing data through field notes, audio/video recording and transcription	Examination and/or structured interviews, followed by recording of findings on a data-recording form specifically designed for the study
<b>Participants</b>	Individuals or groups identified as having insight, experience, or information relevant to the study	Clearly defined, selected sample which needs to be representative of the target population
<b>Sample size</b>	Not random sampling, but requires a clear sampling strategy to select appropriate respondents; sampling may continue until redundancy or 'saturation', i.e. when no new information is elicited	Uses a random sample of predetermined size which is decided at the outset of the study and should not be changed
<b>Analysis</b>	Interactive process that requires immersion in the raw data, identification of common patterns and themes, and interpretation of meanings; can be done manually or with qualitative data analysis software	Requires data entry into a database, followed by analysis using statistical methods