

Seeing is Believing (SIB) Child Eye Health Programme: Perceptions of training beneficiaries (teachers & nurses) in Kenya



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This is a follow-up study to investigate the outcome of a training program among teachers and nurses that took place in certain counties in Kenya in the year 2012. The program was undertaken by Seeing is Believing (SIB) in conjunction with the Brien Holden Vision Institute, the ministries of health and education for the development and implementation of a comprehensive Child Eye Health Programme.

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SECTION ONE

1.0 Contextualization of the Study

1.1 Introduction

Vision is important in the development and performance of a child¹, however 18 million children between the ages 0 and 14 years, globally, are vision impaired from all causes or eye diseases². Detecting ocular disorders in children is important because ocular disorders can result in serious health problems. Many studies have indicated the need for appropriate vision screening and its correction in children³⁻⁵. Visual acuity screening is widely used to identify children with reduced vision. Such screening programs for undetected correctable visual acuity deficits will inevitably identify some children with reduced vision due to causes other than refractive error, for example, cataract or amblyopia (a condition that could become permanent if not identified and treated early)⁵. For early detection and treatment of eye conditions, vision screening should routinely be done at school entry, midway through school and at completion of primary school⁶. Visual acuity screening programs vary with regard to the person carrying out the testing, for example teachers; nurses; the defined threshold for failure; and the setting³.

Vision problems can have an adverse effect on children's comprehension and performance in reading and writing,⁷ which constitute nearly three quarters of a typical school day. In the first few years of life more than 80% of what children learn is acquired through the visual processing of information⁸. When a child's vision is impaired, routine schoolwork and day-to-day activities are affected⁹, thus the child's quality of life is also impacted¹⁰. In many cases, teachers are the first to notice learning and vision problems in elementary-aged children, as they spend the majority of the working day with the child. School vision screenings for children are an important part of detecting major vision problems such as refractive error, abnormal phoric postures, strabismus, amblyopia, ptosis, unequal pupils, nystagmus, and gross eye abnormalities^{11,12}.

Teachers interact frequently with children and their parents and thus may be ideal vision screeners¹³. However, an important determinant of teacher screening programs in schools is the support received from teachers for participating in vision screening programs, which varies with each setting¹³. The utilization of school teachers to detect pupil's vision related problems was first documented in 1975; however since then many studies have documented the reliability and effectiveness of teacher's involvement in screening¹³⁻¹⁹.

1.2 Literature Review and Rationale

The problem

In 1999, estimates showed that 1.4 million children globally were blind²⁰. More recent estimates from Gilbert and Foster (2010)²⁰ indicate that the number of blind children had declined by 10% by the year 2010 to 1.26 million. However, estimates for Sub-Saharan Africa show that there has been a 31% increase in the number of blind children; with 419 000 children estimated to be blind in 2010. East Africa is home to an estimated 8,500 to 10,000 blind children - a disability that has serious effects on the educational and employment opportunities of children²¹.

Children in East African countries, specifically Kenya, Uganda and Tanzania are affected by a range eye conditions. Studies conducted in East Africa show that childhood cataracts is one of the leading causes of blindness in children. Estimates from Uganda showed that cataract was responsible for over 30% of all cases of blindness and visual impairment in children²². However, the results of surgery for cataract in Uganda were poor. Of those children for whom follow up data were available, 56% had a corrected vision of less than 6/60²³. In addition a study carried out by Sightsavers in schools for blind children in Uganda, Tanzania, Malawi, Zambia and Kenya found the common anatomical causes of childhood blindness to be corneal scars (19%), diseases of the whole eyeball (16%) and cataract (13%). The results are similar with data collected in three of these countries in 1995 and the major causes of blindness²⁴.

Child Eye Health issues however are not confined to childhood blindness and eye diseases; it also includes visual impairment from refractive error²⁵, which is the leading cause of correctable vision impairment in children. A refractive error arises due to the inability of the refracting components of the eye to focus incoming light at a single point on the retina. The condition causes blurred vision and is estimated to affect more than 12 million children aged 5-15 years old worldwide²⁶. Despite these conditions being easily corrected with a pair of spectacles; many children in developing countries still do not have access to them. A study conducted in South Africa in 2003, for example, showed that only 1 out of every 5 children who needed spectacles actually had them, meaning that 4 out of every 5 children went needlessly blind or visually impaired because they could not afford a pair of spectacles²⁷. This situation can be assumed to be the same in countries of East Africa where minimal research has been conducted to date.

The main causes and prevalence of childhood eye conditions in East Africa are estimated in Table 1 below. As shown in table 1, cataract, refractive error and low vision are some of the leading eye conditions affecting children between 0 and 15 years old in East African countries such as Uganda, Kenya and Tanzania. Other causes include cornea scarring, ophthalmia neonatorum and trachoma. Non-correction of eye conditions in the age group 5–15 years may be due to several factors, including the lack of access to eye health facilities and services, the lack of screening for ocular diseases and the lack of available and affordable correctional devices and methods.

Table 1. Estimates of the number of blind and low vision children

	U5 MR	Child pop	Birt hs in 201 2	Blindness		Low vision		Cataract		Refractive errors children aged >10years		
	in 200 5	0-15 yrs	100 0s	Preva lence	Magn itude	Preval ence	Magn itude	Ra te pe r 10 00 bi rt hs	Num ber	Pop	Preval ence	Mag nitu de
Ken	120	3,500	350,	0.8/1	2800	0.8/100	2800	5	175	1,15	2%	23,1

ya		,000	000	000		0				5,000		00
Uganda	122	5,600,000	644,000	0.8/1000	4480	0.8/1000	4480	5	322	1,848,000	2%	36,960
Tanzania	136	5,200,000	580,000	0.8/1000	4160	0.8/1000	4160	5	290	1,716,000	2%	34,320
					11440		11440		787			94,380
	<i>Note 1</i>						<i>Note 2</i>		<i>Note 3</i>			

Note 1 Need to use the under 5 mortality rate of 7-8 years ago to estimate the blindness prevalence

Note 2 About 50% of those with low vision will be blind. So the total blind + low vision: 11440 + 5720 = 17,160

Note 3 This is the annual number of NEW cases

Blindness by cause

		Cataract		Corneal scarring		Others	
		%	N	%	N	%	N
Kenya	2800	20%	560	20%	560	60%	1680
Uganda	4480	20%	896	20%	896	60%	2688
Tanzania	4160	20%	832	20%	832	60%	2496
	11440		2,288		2,288		6,864

The solution from the Eye Health sector

Strategies for screening ocular diseases and programmes have been identified as being central to the early detection of child eye health conditions, thus investments in comprehensive child eye health programmes that include visual screening, such as the Seeing is Believing Child Eye Health Programme in East Africa, are necessary.

The Seeing is Believing Child Eye Health Programme in Kenya

Two consortia comprising several organizations in eye health in East Africa were formed in 2012 to reduce the percentage of avoidable blindness and visual impairment in selected regions of three East African countries (Kenya, Uganda and Tanzania) over 4 years through the development and implementation of a comprehensive Child Eye

Health Programme directly reaching an estimated 4 million children aged 0 – 15 years leading to improved quality of the children’s lives and educational performance. This age category was selected based on the WHO’s definition of a child; which refers to any person from 0 to 15 (under 16) years of age²⁵.

The two consortia’s, which are led by the Christian Blind Mission (CBM) and the Brien Holden Vision Institute (BHVI), will work closely with the Ministries of Health and Ministries of Education in each of the three countries, to develop a coordinated and comprehensive approach to delivering child eye-health looking at the child’s needs, holistically. The CBM consortium will focus on addressing comprehensive child eye health, including clinical eye-care by providing 13 tertiary hospitals and 49 secondary hospitals with equipment to provide child eye-care services, as well as training the doctors, nurses and primary eye-care personnel to ensure high quality, integrated services for children. The Brien Holden Vision Institute consortium focused on developing a school eye-health programme for 6-15 year olds so that eye care problems can be identified through the education system. The consortium worked with maternal child health staff in order to identify pre-school children with eye-care problems and ensure that they are identified early for treatment of eye-care problems. By working with governments, the project aimed to make a long-term impact on the child eye-health services in the region by improving the institutional capacity of the public health services to address child eye health.

Table2: Training course was designed

Modules for Teachers	Modules for Nurses and MCH’s
The Significance of the Child eye health project	Basic anatomy and physiology of the eye
The Need For Good Child Eye Health	Common eye conditions and diseases in children
Structure of the eye	Common causes of visual impairment and blindness in children
Signs of unhealthy eye	Basic first aid

Vision and eye health screening	Eye health promotion
Referral pathways	Planning for a screening
Data reporting	Visual acuity & eye health
Eye health education and promotion	Referral systems
Practical sections in a school	Data reporting
	Practical session on screening in a health facility
	Feedback from the training.

How the trainings were conducted for the teachers and the nurses

Teachers training: The training was a one day activity which was conducted by two ToTs trained in Child eye health. The training took place at a common venue. Each teacher was provided with a training kit, a manual and a report tool. The training kits for the teachers contained a screening chart, torch, occluder, tape measure and a training manual for reference. The training sessions were divided into two; in the morning they were taken through the theory component on the topics mentioned above, while in the afternoon, they would go for a practical session in a school. This was to help them apply the skills learnt and evaluate themselves. The practical would be followed by an interactive session to give feedback on the training.

Nurses training: The training was a two day activity which was conducted by two ToTs. The training was held at the venue. Each nurse was given a training kit and a manual. The training kits for the nurses and MCH contained a screener E chart, torch, occluder, tape measure and a training manual. On the first day they were taken through the theory lesson while in the second day they would go for a practical session health facility, mainly the MCH section. The training was conducted with PowerPoint presentation. They also did role playing especially on the first aid and screening. All information was recorded using the data capture tools provided by MOH, more specifically, the 'MCH Booklet' to record data.

The Research

In consideration of the training programmes implemented by the SIB ChEH project, this study investigated the beneficiaries' (teachers and nurses) perceptions about the trainings.

Broad Objective:

The aim of this study was to investigate the perceptions of the SIB Child Eye Health Programme training beneficiaries (teachers and nurses), in Kenya, with regard to eye health training in schools, including training practicality and usefulness, and thereafter make recommendations for future eye health training programmes. The study also investigated the teachers and nurses perceptions regarding the SIB Child Eye Health Programme.

The specific objectives of the study:

1. To determine the perceptions of the nurses and teachers on the training that they received as part of the SIB Child Eye Health Programme, with regards to training content, materials provided, and the training quality (the efficiency of the trainers).
2. To assess the practicality, usefulness and applicability of the training skills gained by the teachers and nurses.
3. To determine the challenges that nurses and teachers had experienced post training.
4. To assess the nurses and teachers' perceptions about the changes in the children who received spectacles/ low vision devices through the programme.

SECTION TWO

2.0 Methodology

2.1 Study Design

The study employed a cross-sectional study design (rural and semi-rural) which included both quantitative and qualitative approaches to investigate the benefits/implications of the SIB ChEH programme school eye health training component. Quantitative data was collected through the use of closed ended surveys, while qualitative data was collected through open-ended interviews.

2.2 Study Population and Study Area

A total of 745 teachers and 354 nurses were trained as part of the SIB ChEH Programme in Kenya from July 2012 – June 2015. The numbers of teachers and nurses per the programme implementation areas are shown in table 3 below.

Table3: Training areas and beneficiary numbers

County	Teachers				Nurses & MCH		
	Total	Urban	Rural		Total	Urban	Rural
Migori	76	20	56		34	14	20
Homa Bay	76	19	57		34	10	24
Kisii	91	23	68		42	5	37
Kisumu	73	17	56		34	9	25
Bungoma	115	32	83		56	9	47
Trans Nzoia –Kitale	70	10	60		38	12	26
Narok	53	11	42		42	7	35

Kericho – Litein	91	13	78		37	8	29
Nakuru	100	23	77		37	24	13
TOTAL	745	168	577		354	98	256

Inclusion criteria

- Teachers in selected urban and rural selected areas who were trained by the SIB ChEH programme.
- Nurses and MCH's in selected urban and rural selected areas that were trained by the SIB ChEH programme.

Exclusion criteria

- All teachers, nurses and MCH's who were not trained via the SIB ChEH programme.

2.3 Sampling

An equal probability selection sampling technique was used to calculate the sample size. The choice of the sampling method was done in such a way to avoid over sampling in some of the strata which appear to be slightly bigger than others. The sample size was calculated as:

$$n = (Z)^2(1.0-P)(P)W / (2E + ((Z)^2(1.0-P)(P)W) / N$$

where P = 0.05% was the anticipated prevalence of perceptions of teachers and nurses, W= 2 is the design effect, Z = 1.96 for a 95% confidence interval and E = 0.4, was the accepted margin of error. Of the strata which were sampled, a 10% sample adjustment was taken into account for anticipated absenteeism and nonparticipation. Simple random selection was used to select counties by first assigning unique identities and taking into consideration the geographical location. Due to budget constraints, only five randomly selected counties were used for data collection. A higher margin of error was considered for a small sample size due to the budget constraints. From each strata, a

purposive sampling method was used to obtain the required sample. Table 2 shows the sampling selected county.

Table 4: The study sample in selected counties

County	Teachers				Nurses & MCH		
	Total	Urban	Rural		Total	Urban	Rural
Migori	39	10	29		18	7	11
Bungoma	58	16	42		29	4	25
Narok	27	6	21		22	3	19
Kericho – Litein	47	7	40		19	4	15
Nakuru	51	12	39		18	11	7
TOTAL	222	51	171		106	29	77

2.4 Data Collection Tools/ Materials

Questionnaires were used as a tool to elicit teachers, nurses and MCH perceptions, concerns and attitudes on the training that was received from the SIB ChEH programme. The questionnaires were used to gain insight into key areas of the training, materials provided, usefulness of the practical sessions, the quality of the sessions and the efficiency of the trainers. The questionnaires additionally attempted to gain insight into the current application of the training received in screening school children at schools (Appendix A).

Preparation for Data Collection

Arrangements to contact the study participants began after ethical approval was granted. Most of the phone and email contacts of participants were available from the African Vision Research Institute database. An introductory message was sent to all participants prior to a phone call (Figure 1). The introductory message contained a greeting, introductory remark on what the study was about, a request asking the participants if they would like to participate and contact details. A text message service portal specific for the study was setup to facilitate sending of bulk text messages and increase the participation in the study.

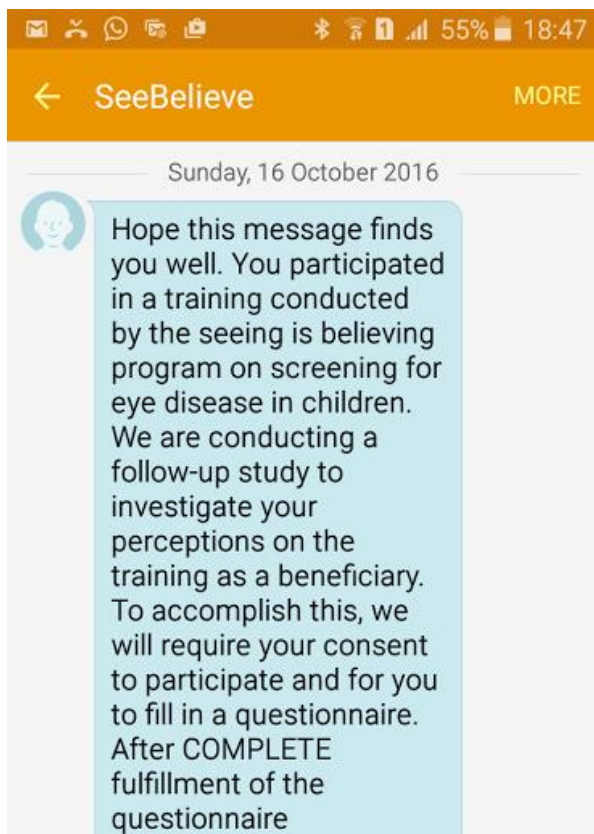


Figure 1: SMS portal, appearance on the phone

Messages were also sent from the investigators and enumerators' personal mobile phones during the study as the portal was server dependent and sometimes unreliable. The portal helped to reach participants who were suspicious of numbers unknown to them or fraud.

After sending the initial text message, all participants were contacted telephonically. A script of what needed to be communicated to the participants, which mirrored the initial text message was drafted. In addition, the enumerators and fieldworkers enquired from the participants what time and place would be convenient for them to participate in the study. This helped in planning the field visits and inventing more innovative ways of reaching the participants who were unavailable or had been relocated. By calling the participants we were able to find out that the teachers were conducting a national examination for the students and holidays would soon follow. During the holidays some of the teachers would relocate to visit family or for further studies. It was also discovered that some of the participants had been transferred from the work stations they were located in during the training in 2012 but they were still willing to participate in the study. Based on the information gathered from the participants during the phone call conversations, the participants were given choices of how they wanted to participate in the study. The choices included meeting the fieldworkers at a central place to fill the questionnaire (Nakuru- Nuru palace hotel, Litein- Sebuleni suites, Migori- Gabro hotel, Narok- Mara Link Hotel, Bungoma-Tourist Hotel Bungoma); delivering the questionnaire to the participant who could not make it to the central location; and finally sending the questionnaire to the participant by email where they would complete it under instruction over the phone by a trained enumerator, scan and email it. The message of the various options was conveyed through a text message to all the participants again and the participants sent their preferable options via text message or phone call. Those who did not respond were given a call to confirm their option. The participants who preferred to email were asked to send their email details. The information of the participant's choices was recorded and the spreadsheets were attached.

On the 20th of October 2016 emails and attached questionnaire as well as the consent form were sent out to the teachers and nurses who expressed interest in participating in the study via email. The participants were given up to the 6th of November 2016 to send in the completed questionnaires, however, many asked for an extension because they had several commitments. The last completed questionnaire was received on the 9th of December 2016 via email.

Training procedures

Training was organized for field workers who were selected to collect the data. The minimum qualifications for field workers included undergraduate students in Bachelor of Medicine and Surgery, Bachelor in Science, Bachelor in Sociology, and Bachelor in Psychology, Bachelor of Nursing and Bachelor of Pharmacy. All field workers who were collecting data were enlightened about the study aims, justification and the methods of collecting data in a seminar. The field workers familiarized themselves with the registration of participants and the data collection tools (questionnaire). The seminars comprehensively covered the study sections and a trial run was conducted with the field workers on how to register participants, collect data using the questionnaires from the participants and how to ensure completion of the tools.

Training of field workers/ research associates

The training of field workers was carried out on the 21st of October 2016. The training was led by the principal investigator of the study in Kenya. There were six field workers/ research associates trained (Figure 2). All the field workers were required to have read the proposal prior to the training. The training consisted of PowerPoint presentations of an overview of the study, the expectations of the field workers, work schedule of each day in the field, handling of questionnaires, encouraging and assisting the participants in filling in the questionnaire, handling of participants, attention to detail ethical considerations including taking consent and accountability. In the last part of the training the team went through the questionnaires made necessary corrections and clarifications.

The research associates were also requested to communicate with the principal investigator at least twice a day, in the morning and at the end of the day or when they required clarification.

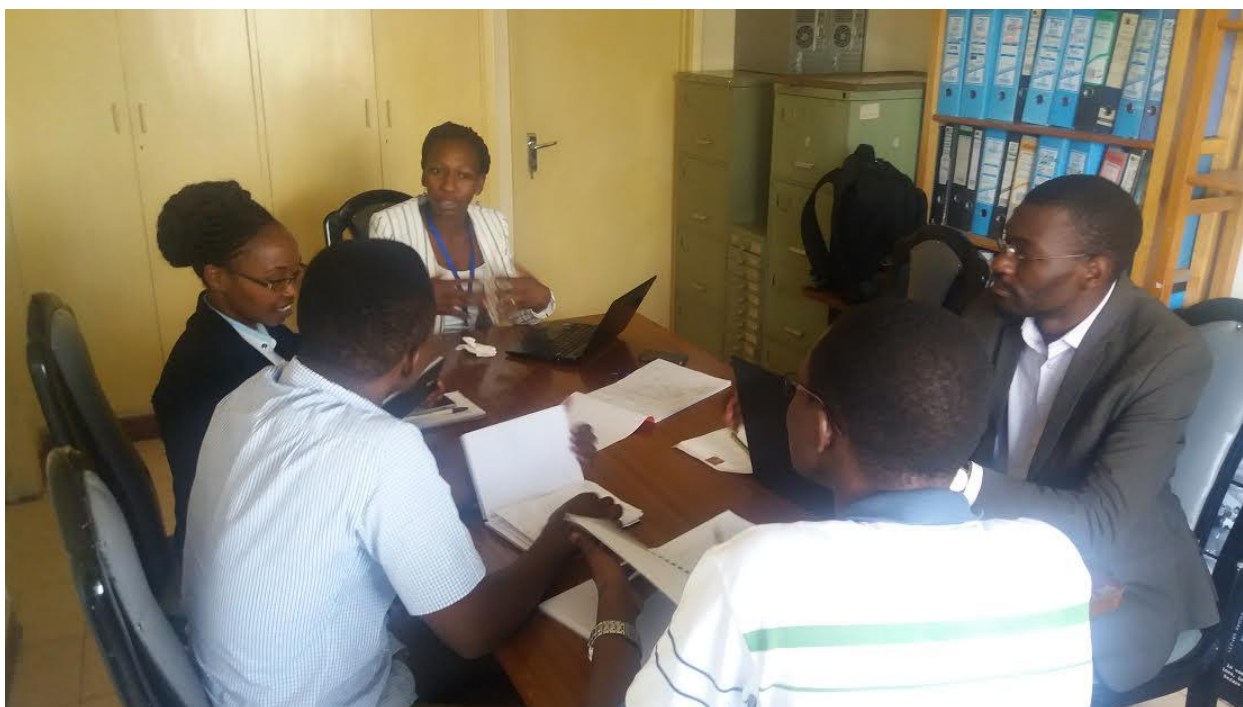


Figure 2: Training of field workers/ research associates

Data collection

Field visits and Courier

The Counties that were randomly selected for the study included Nakuru, Bungoma, Migori, Narok and Kericho-Litein. Departure to the field took place on the 24th of October 2016. The team was split into three groups to cover the different counties (Figure 3). Each group had two field workers/ research associates.



Figure 3: Departure to the field

Meeting at a central place to fill the questionnaire

The field visit was set up at a central location (Nakuru- Nuru palace hotel, Litein-Sebuleni suites Migori- Gabro hotel, Narok- Mara Link Hotel, Bungoma-Tourist Hotel Bungoma , where the participants were invited to come between 7 am and 7 pm to fill in the questionnaires (Figure 4). The research associates were organized in a way that one of them was stationed at the central location at all times and the other went out to find the various participants who could not make it to the central location as well as to organize courier services. The research associate stationed at the central location called up the participants to remind them to come to the central location, or enquire where they preferred to be met. In the specific county they were in, the research associate on the ground also attempted to call all the participants who had not responded to the previous calls prior to the visit. This further encouraged more participation in the study.



Figure 4: Research associate at a central location assisting the study participants to fill in the questionnaires

The study participants who came to the central location were guided by the research associate as they filled the questionnaire. The research associates ensured that the questionnaires were completed by the participants after which a facilitation fee was given to them in cash or Mpesa. A register of the participants at each study site was kept.



Figure 5: Participants enjoying a meal

Delivering the questionnaire to the participant who could not make it to the central location

One of the research associates went out into the field to interview participants who were unable to make it to the central location. The participants were phoned to ascertain their location and agree on a time they would be available for the interview. The research associate was paired with the field driver and they went out to interview the teachers. For places that were difficult to reach (a lack of knowledge of the place or it was too far, or if a time could not be agreed upon), a courier services/ company was contracted to deliver the questionnaire and the instructions issued over the phone.

Going out into the field gave more insight into the circumstances of the participants and they were able to share with the research associates their challenges and show them some of the children with eye complaints (Figure 6).

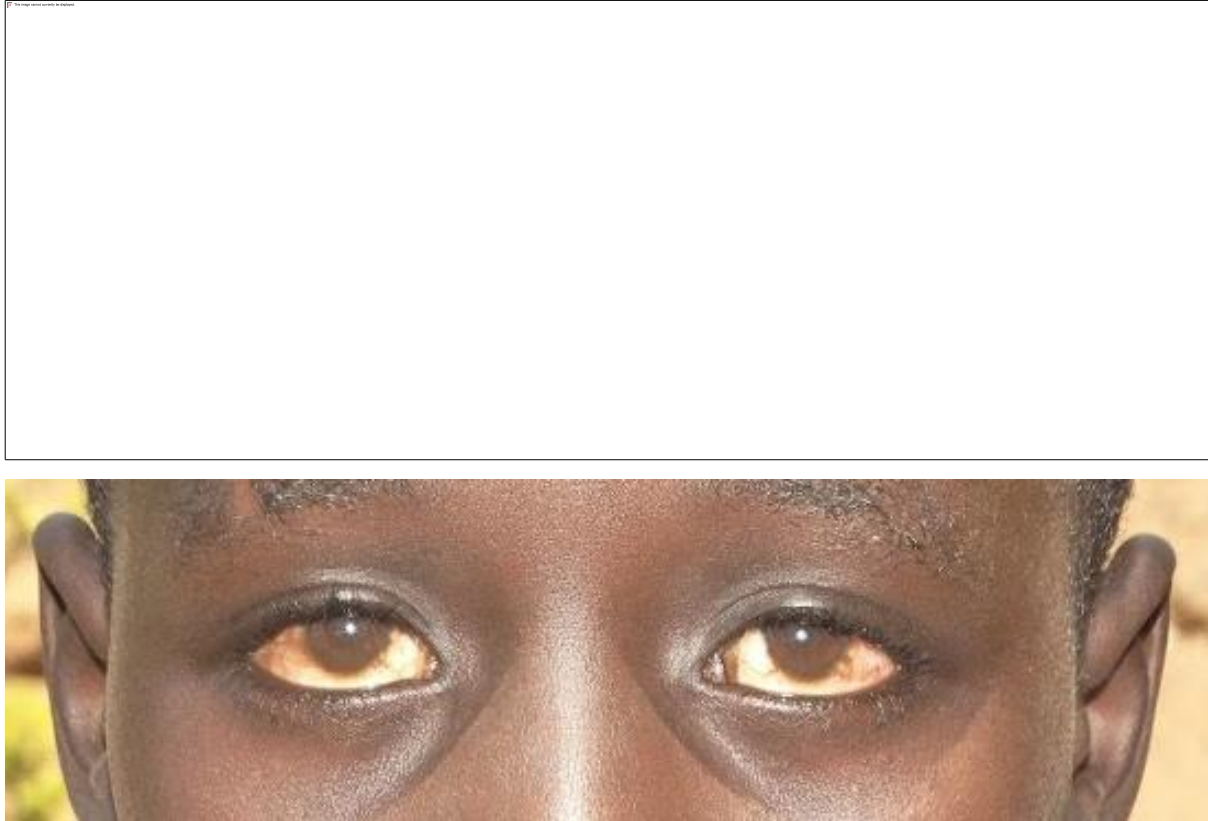


Figure 6. Some of the children with eye complaints in the schools

Group Discussions

A group discussion (not a focus group discussion) was held in each county among all available teachers and nurses (Figure 7). The group discussions were conducted by the field worker/ research associates using a discussion guide and recorded in a tape recorder. All meals, snacks and venue costs for study participants were catered as part of the research fund.



Figure 7: Group discussion with the study participants

Communication with the Principle Investigators during the field visits

The field workers/ research associates were required to communicate with the principal investigator by phone at least twice a day in the morning to summarize the days' plans and in the evening to summarize the day's events. The field visit ended on the 7th of November 2016.

Email

Participants who wanted to participate in the study by email had the consent forms, questionnaires and instructions on how to fill the questionnaires and contact details of the principal investigator for Kenya were sent to them from a common email address on the 20th of October 2016. The correspondence channels were also open on email if the

participants wanted any clarifications made. The email participants were expected to print the questionnaire, fill it in, scan and send it on the same email address or the principal investigator's email address. Some participants typed their responses on the questionnaires and consent forms and this was still acceptable. On receipt of the email responses from the participants, the principal investigator for Kenya and research associates ensured completion of the questionnaire and sent an acknowledgment. If the questionnaire was incomplete, the participant was informed as well as issued instructions, by phone and email. The participants had their facilitation fee sent to them by M-pesa once the questionnaire was complete.

The emails were stored in folders labeled with the participants' names and were attached. The complete questionnaires and consent forms have also been printed and sent. The email channel of response was kept open until the 12th of December 2016.

2.5 Ethical Considerations

Ethical approval was obtained from the Kenyatta National Hospital- University of Nairobi Ethics and Research Committee in October 2016. All teachers, nurses, MCH participating in the study were provided with information documents and informed consent forms. The study followed the tenets of the Helsinki Declaration, protecting the rights of human participants.

2.6 Data Storage and Management

The questionnaire surveys were checked for completeness and accuracy by the principal investigator in Kenya and were referred back to the appropriate individual/s if information was missing, to complete all the fields contained within the questionnaire survey. The data collected was coded and entered into an MS Excel data base by trained data entry technicians. All hard/ soft data and information are safely stored on encrypted storage devices at the Brien Holden Vision Institute (Kenya offices); duration of 5 years and only the data technician and the principal investigator/s will be able to access the hard/ soft data.

2.7 Data Analysis and Presentation

Quantitative information that were elicited via census figures, routine statistics and types of epidemiological information that is measured through the questionnaire survey were coded and captured into an MS Excel data base by training data entry technicians. The data entered into the database were exported to the statistical program, STATA 13.0, and analysed statistically. Descriptive statistics was conducted on the sample and in turn inferential statistics to extrapolate the results to the broader population was also conducted. Qualitative data was analysed thematically and several techniques were used to present analysed data, including graphs, figures and tables.

Challenges during Data collection and preparation

A major challenge was obtaining ethical approval as the time taken by the review board was lengthy. However, the comments received from the committee were valuable and contributed to the strengthening of the document.

Another challenge was that some of the teachers and nurses' phone numbers were not accessible either because they were too short, out of service or were incorrect. Other participants simply did not answer, despite the team texting or calling. The Narok county data sheet had no contacts of any of the teachers, however, the team managed to get the contact of most of the teachers by approaching the county Minister of Education of Narok. The County Minister of Education also took it upon himself to call up all the teachers who had participated in the training, thus the response was good.

The time allocated for data collection was also short. The primary school teachers were holding national examinations and shortly after were the long holidays were the teachers either relocate or go for further education. The team handled this challenge by having three teams in the field and offering alternatives such as email to participate. The time for sending emails was extended beyond a month after the team left the field.

Prior to visiting the field, the team had no contact details of the previous key persons on the ground who participated in the training in 2012. This was a challenge especially in getting the nurses to participate and could have contributed to the lower acceptance rate. As a result, some of the nurses were directed not to participate in the study as the teams were presumed to be imposters. This information was gathered by the team at the field from some participants who came under their own volition.

Some of the participants especially the teachers found the questionnaire difficult to understand, but the team was available for any clarification.

Factors Facilitating the Study

The factors that contributed to the smooth running of the study included, good communication including mobile and internet coverage, generous facilitation fee to participants and prompt payment of facilitation fee, convenient money transfer services. The field workers/ research associates were hard working, flexible, accountable and easy to work with. The teachers' administrative channels in the counties were very instrumental in getting the teachers to participate especially in Narok County where there were no contact details of the teachers who participated in the training.

Lessons

Childhood eye diseases present a major challenge due to their great magnitude and they weigh heavily socioeconomically. Since the training, the trainees were able to pick up numerous eye conditions among children, but lacked a referral system. One of the teachers in Narok even offered land to the consortia to build an eye hospital in his county. Through the group discussions, the teachers and nurses suggested we involve the county as well as parents in child eye health. Sensitization of the population through the Mass media could contribute to better child eye health. The training carried out in 2012 would also have achieved better success if more frequent follow-up with the trainees was carried out. The communication and technology has greatly improved in

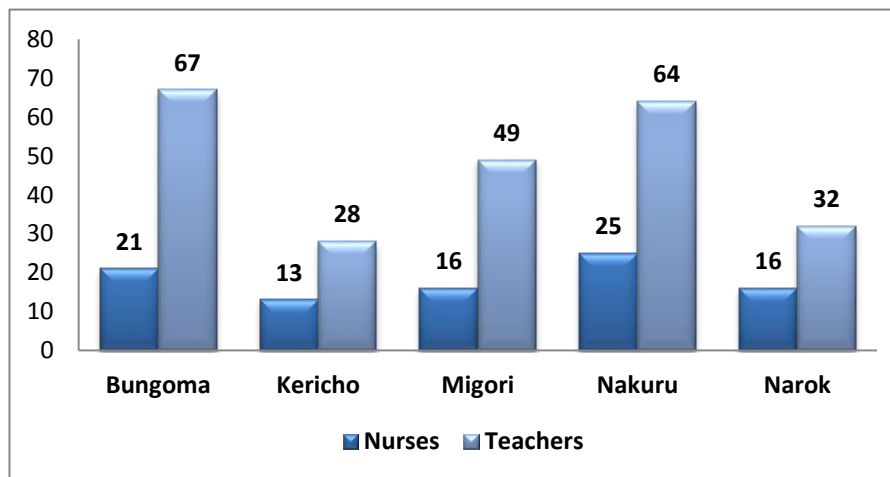
Africa and can be incorporated into research to improve efficiency, for instance, in the case of this study where we carried out a follow-up survey for all participants in the study.

SECTION THREE

3.0 Results

3.1 Respondents Background Information

Perceptions of this study were conducted in five (5) randomly selected counties which were Bungoma County (n=88), Kericho-Litein County (n=41), Migori County (n= 65), Nakuru County (n= 89) and Narok County (n = 48). These were selected taking into consideration the geographic location such that ultimately all clusters would be equally selected. Weighted proportion size of participants was used to for each county to randomly select the nurses and teachers for the study.



Proportionally Bungoma County has more teachers (76.14%, 67 out of 88) as compared to all other counties. Migori County had the least number of nurses per county (24.65%, 16 out of 65). Overall all counties were sampled proportionally with more teachers than nurses. The following fig. 8 shows how many teachers and nurses were involved each county.

Figure 8: Frequency of nurses and teachers

The comparison in terms of gender showed that there was more females in Nakuru (73.03%) and other counties were more equally distributed. Only Narok County had more males (58.33%) than females (41.67%). The following figure 9 shows the distribution of gender among all counties.

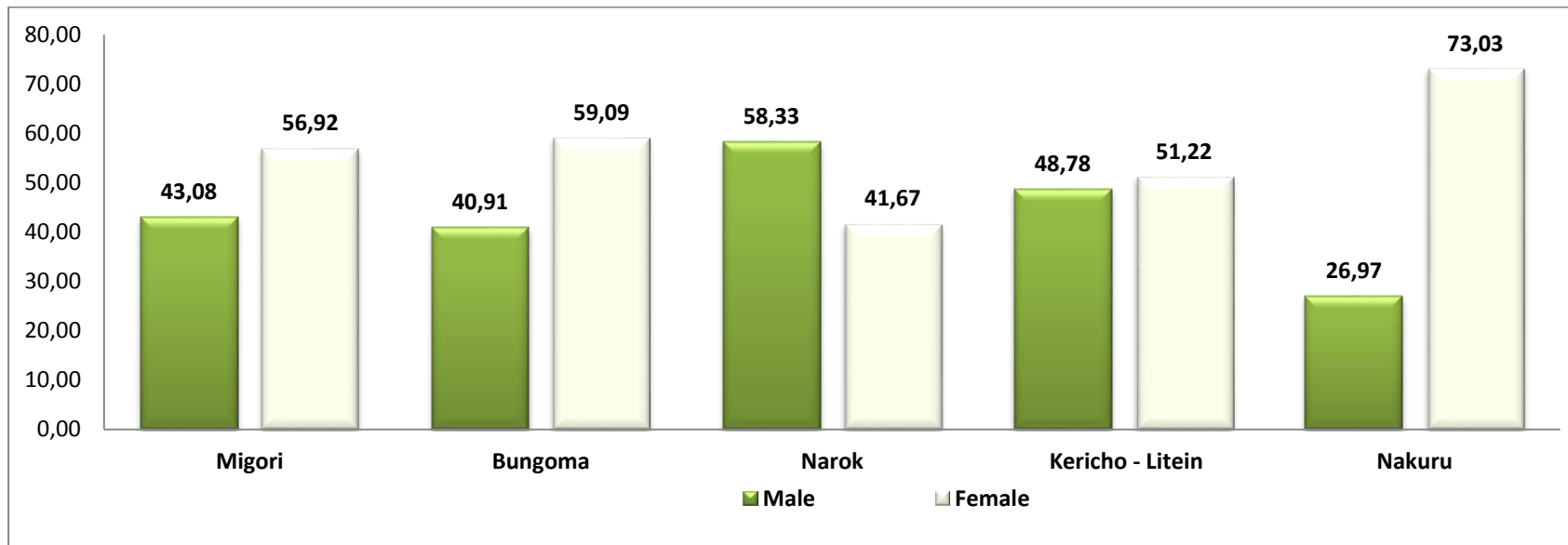


Figure 9: Males and females per County

Qualifications were reported as high school (A' level and O' level) a tertiary (Certificate, Diploma, Degree and Masters). Among all these reported, diploma was the modal qualification followed by degree. The least reported qualification was A' level, a lower level qualification.

All counties showed diploma as the modal qualification with Bungoma County (56.82%, 50 out of 88), Kericho County (63.41%, 26 out of 41), Migori County (53.85%, 35 out of 65), Nakuru County (47.19%, 42 out of 89) and Narok County (47.92%, 23 out of 48). There were more people with diploma in Bungoma County (28.41%, 50 out of 176) than any other county and the modal county for degreed qualification was Nakuru County (26.04%, 25 out of 96). Most participants with Masters Qualification were also in Nakuru County (41.67%, 5 out of 12). The least represented qualification was A' level (1.81%, 6 out of 331) and the modal qualification was diploma (53.17%, 176 out of 331). Figure 3 below shows the clear distribution of the qualifications per county and job type.

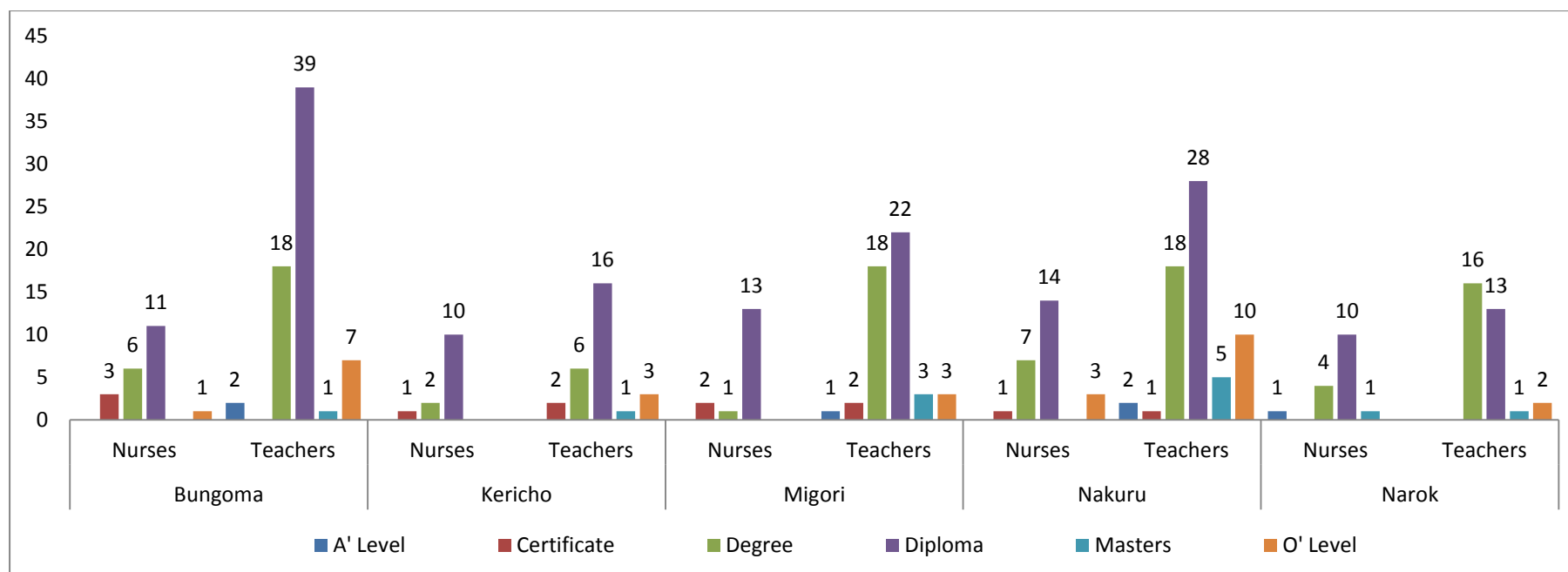


Figure 10: Different qualifications per county and job type

The distribution of the participants' present jobs showed that nurse and nursing officer were the common ones for nurses. The corresponding qualifications for these participants were generally certificate, degree, diploma and O' level. Postgraduate qualification was only reported from an Eye Clinic nurse from Migori County. A number of different job title were reported in one county such as Ophthalmic nurse (Migori County), Deputy Head Nurse, and Environmental (ENV) Health Officer (Nakuru County), (Nakuru County), Eye clinic nurse (Migori County), Nutritionist, Pharmaceutical Tech and Senior Nursing Officer (Bungoma County). Job titles such Clerical Officer, Nurse, Nursing Officer and Senior Nursing Officer were found in all counties.

Higher qualifications were mostly common among teachers, with of them having degrees, diplomas and masters credentials. Nakuru County reported a modal number of teachers will types of qualifications. Specialised job titles for teacher were Head (Special Needs) (Migori) and Teacher (Visual impairment) (Nakuru) and both had degree as the corresponding qualification. A more lucidly distribution of the job titles and general qualifications are show in table 5 below.

Table 5: Distribution of current jobs

Current Job (Nurses)	Bungoma	Kericho	Migori	Nakuru	Narok	General qualification
Chief Nursing Officer		1		2		Degree and Diploma
Clinical Officer	2	2	1	2	2	Degree and Diploma
Community Health Officer	3			1		Certificate, Degree and Diploma
Deputy Head Nurse				1		Degree
ENV Health Officer				1		Degree
Head Nurse			1	1		Diploma
Lab Technologist			1	1		Certificate and Diploma
Nurse	2	7	3	5	2	Certificate, Degree, Diploma and O' Level
Nurse (Eye Clinic)			1		1	Diploma and Masters
Nursing Officer	4	1	3	4	8	Degree, Diploma and O' Level
Nutritionist	1					Degree
Ophthalmic Nurse			2			Certificate and Diploma
Pharmaceutical Technicians	2					Diploma
Public Health Officer	4	1	1	4		A
Senior Health worker	2					Degree and Diploma
						Certificate and Degree

Senior Nursing Officer	1	1	3	3	3	A' Level, Certificate, Degree and Diploma
Current Job (Teachers)						
Assistant Teacher	3	7	9	9	5	Certificate, Degree, Diploma, Masters and O' Level
Deputy Head Teacher	1	5	3	4	3	Degree, Diploma, Masters and O' Level
EARC Co-ordinator	1		6	2	1	Degree, Diploma and Masters
Head (Special Needs)	1		1			Degree
Head Teacher	5	3	5	4	11	A' Level, Certificate, Degree, Diploma, Masters and O' Level
Primary Teacher				2	2	Diploma and O' Level
Retired Teacher	1			2		Degree, Diploma and O' Level
Senior Teacher	5	4	6	2	3	Degree, Diploma, Masters and O' Level
Teacher	25	9	18	35	5	A' Level, Certificate, Degree, Diploma, Masters and O' Level
Teacher (Special Needs)	25		1	3	2	A' Level, Degree, Diploma and O' Level
Teacher (Visual Impairment)				1		Degree

Regarding whether the participation was optional, most of the participants (74.92%, 248 out of 331) stated that the workshop was optional. In all counties, the comparison between teachers and nurses show that majority of the participants attended the training at their own will, with almost all nurses and teachers in Narok and Kericho counties. The distribution of the reasons stated is show in figure 11.

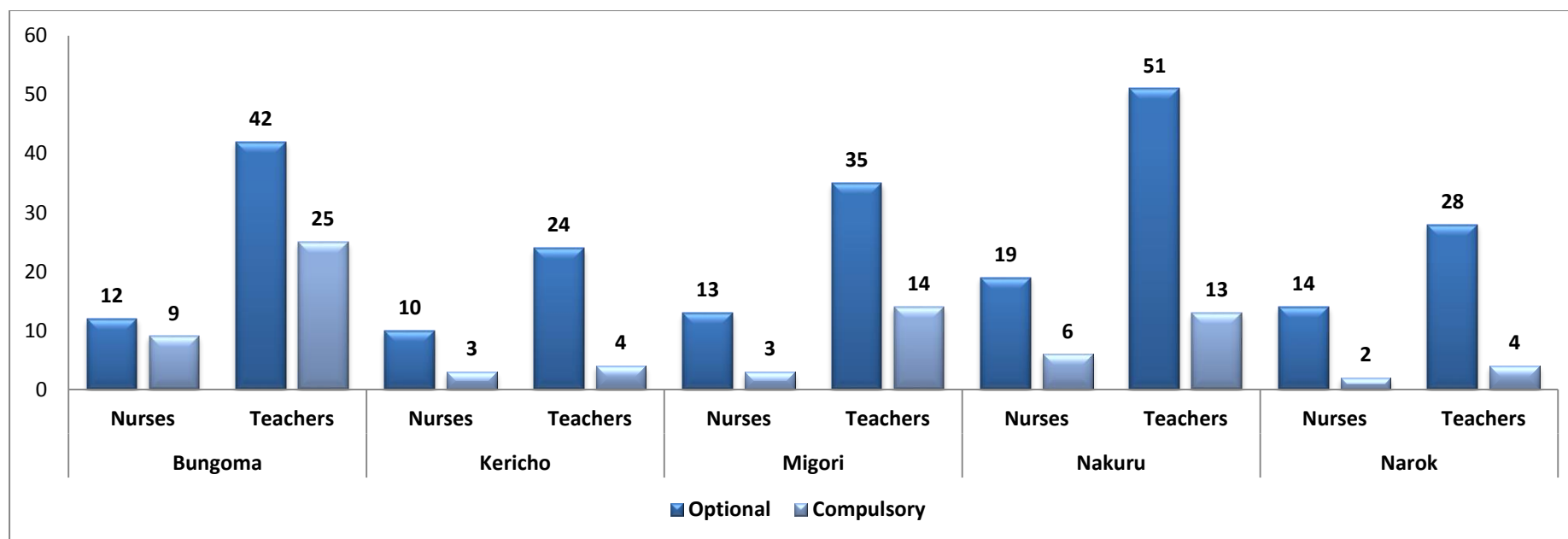


Figure 11: Reason for attending the training

Perception on the motive behind attending the training was assessed from both groups mainly checking if the reason was either for the opportunity to help identify eye problems in children, opportunity to learn new skills, professional advancement, to contribute to avoidable blindness and eye health and/or for personal enrichment.

Feedback from nurses showed that the purpose of attending the training, which was asked in a multi-respond question from different aspects, was mainly for development of personal skills to the opportunities of identifying eye problems in children. Most of the

participants stated they attended the training because there was a positive opportunity for them to learn on how to identify eye problems in children. A significant number in all counties also stated that the reason for attending was to contribute to avoidable blindness and eye health. Least reason stated across counties was that of personal enrichment.

These training skills for nurses are displayed in the figure below. Among the nurses who reported, highest frequency was reported in Bungoma County (95.2%) on the opportunity to help identify problems in children and the lowest frequency was reported on personal enrichment in Migori County (12.5%, 2 out of 16). The following figure 12.1 shows the distribution of all responses.

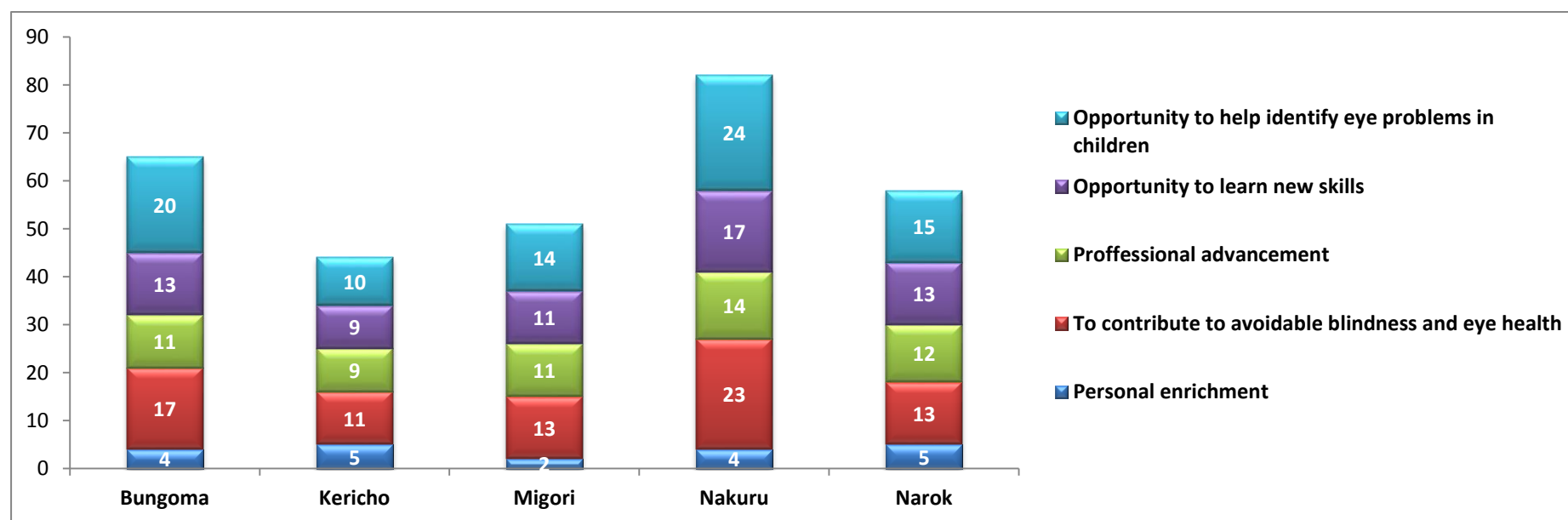


Figure 12.1: Reason for attending training (Nurses)

In all counties, there were more participants who responded to the question of opportunities to help eye problems in children than on personal enrichment. Among all teachers, highest frequency on the opportunity to help identify eye problem in children was reported in Kericho County (96%, 27 out of 28) and the least was reported in Kericho County (25%, 7 out of 28) for significance of the child eye health project. Highest frequency reported per count was on opportunity to help identify problems in children, Bungoma County (83.6%). The perceptions for the teachers on the same account are shown in figure 12.2.

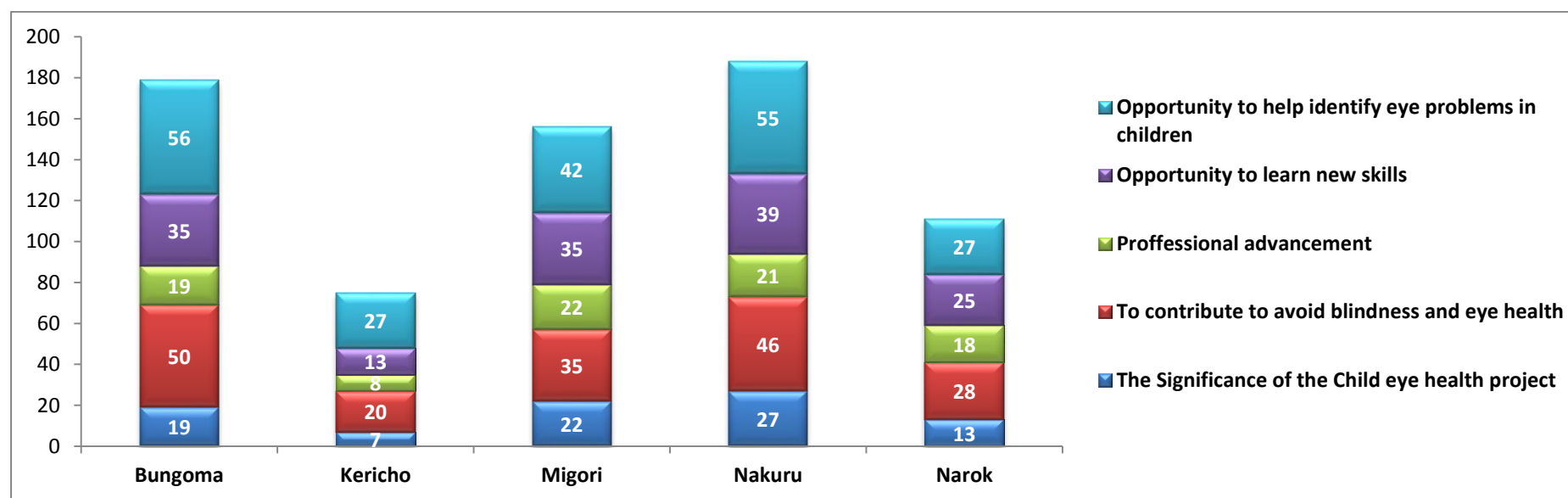


Figure 12.2: Reason for attending training (Teachers)

3.2 Perceptions on Training Content and Materials

3.2.1 Training Content

Perceptions of training content were assessed based on the skills obtained from the program provided and the skills involved child eye health (the significance of the child eye health project, the need for good child health), anatomy of the eye (structure of the eye, signs of unhealthy eye and basic anatomy and physiology of the eye), screening of the eye (vision and eye health screening, practical sessions on screening in a school and planning for a screening), data reporting and referrals (data reporting, referral pathways), common eye diseases (common eye conditions and diseases in children, common causes of visual impairments and blindness in children), eye care (eye health education and promotion and eye health promotion), diagnosis (visual acuity and eye health, and basic first aid).

The need for good eye health and significance of child eye health stated in all counties as skills which were provided by the programme. Modal frequencies were reported in a sample of teachers Narok (90.6) for significance of child eye health and a bimodal in both teachers and nurses in Migori (100%) and Narok (100%) on the need for good eye health. The least reported among all recorded opinions was on the significance of child eye health in nurses from Nakuru (56%). The following figure 13 shows the distribution of these two aspects in both teachers and nurses.

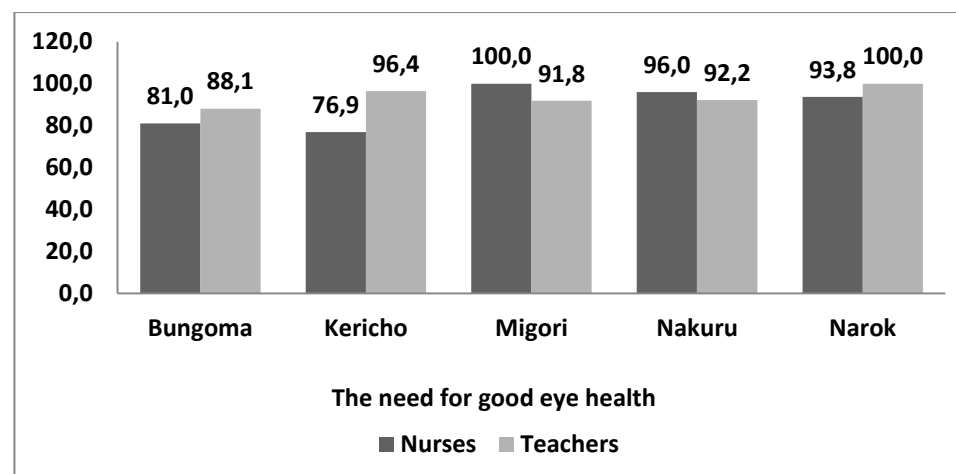
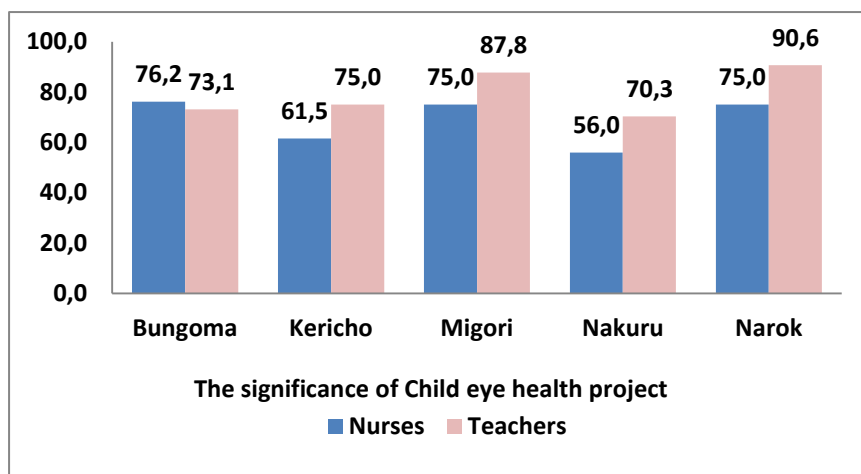


Figure 13: Child eye health project

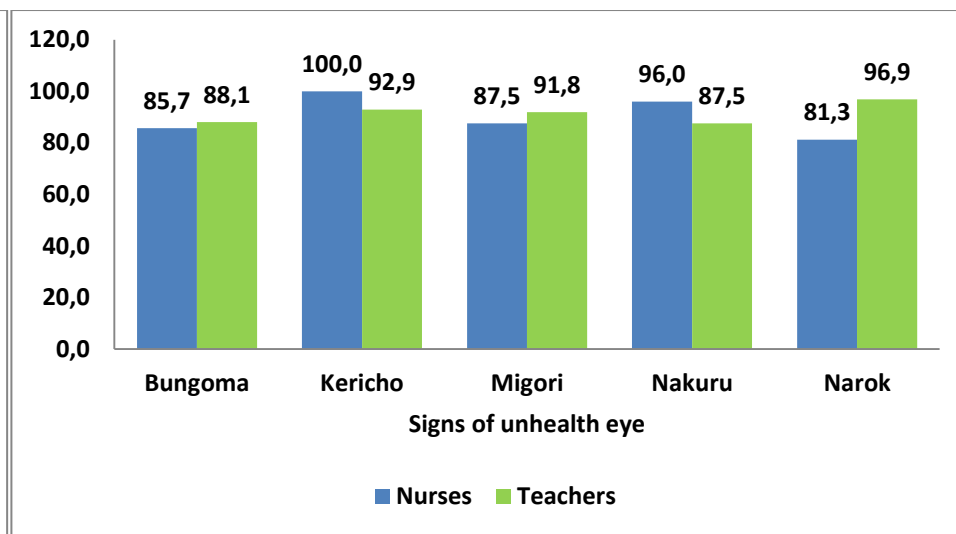
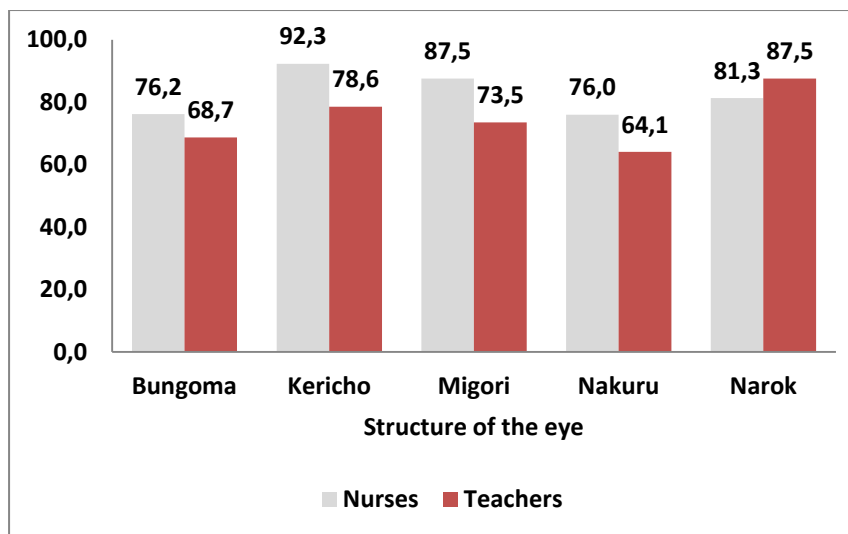


Figure 14.1: Anatomy of the eye

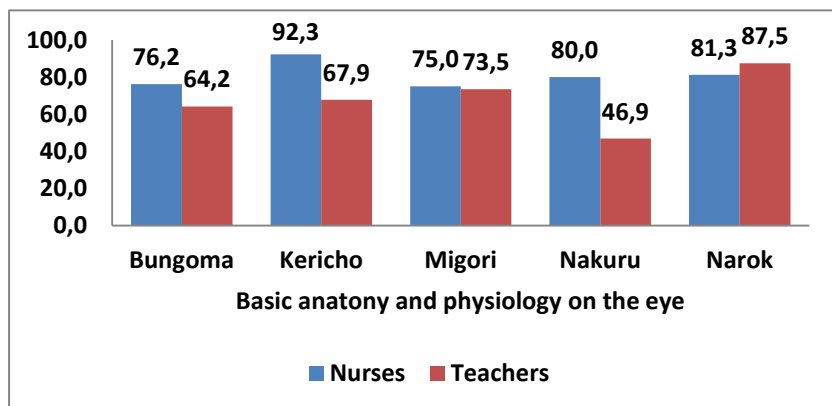


Figure 14.2: Anatomy of the eye

Skills learnt on the anatomy of the eye were combined as shown in fig 14.1 and fig. 14.2, where the modal frequency was reported in signs of unhealthy eye in Kericho (100%). The least reported on this section if anatomy of the eye was on the basic anatomy and physiology of the eye in Nakuru (46.9%) from a sample of teachers. Highest frequency on the structure of the eye was reported in Kericho (92.3%) and on basic anatomy was also Kericho (92.3%).

Vision and eye screening, and practical sessions on screening a school also show a high proportions of participants who reported stating that there were skilled learnt. The mostly reported between the two was in Kericho (100%) on vision and eye screening, and Narok (100%) on practicals on screening is a school whereas the least reported was in Nakuru (52%), from a sample of nurses.

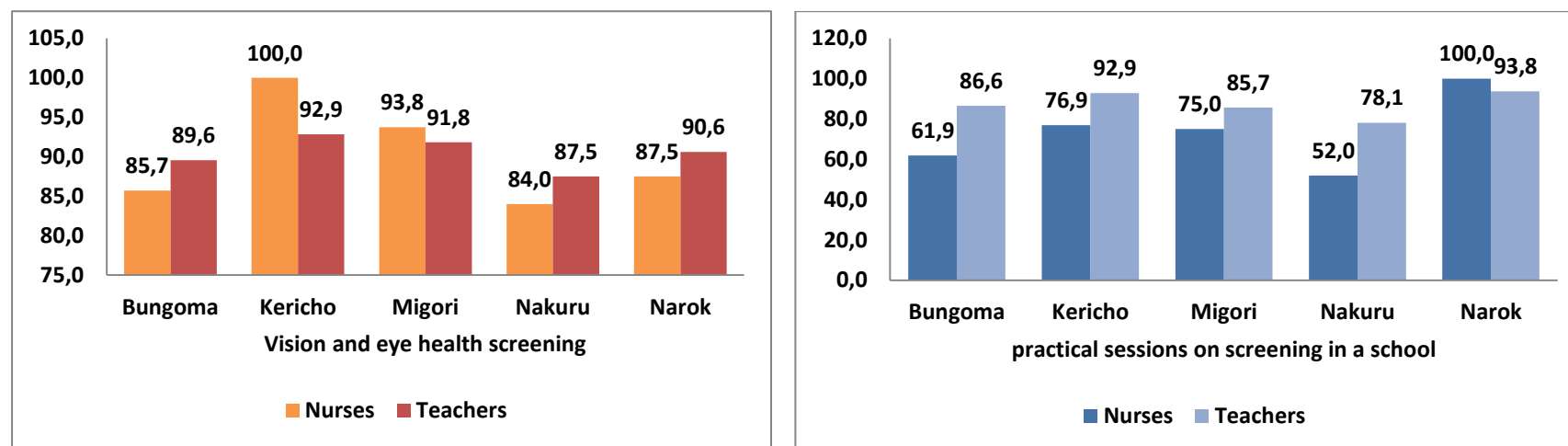


Figure 15.1: Vision and eye practical sessions

Participants in all counties responded positively on the skills learned on planning for screening and practical session on screening in eye health facility. A bimodal scenario was seen in Migori (87.5%) and Narok (87.5%), and both from a sample of nurses. The modal frequency on planning for a screening was reported in Kericho (92.3%), also from a sample of nurses. The results show that there were more nurses who reported gaining more skills than teachers. Figure 15.2 shows the distribution of the reported opinions on planning and practical sessions.

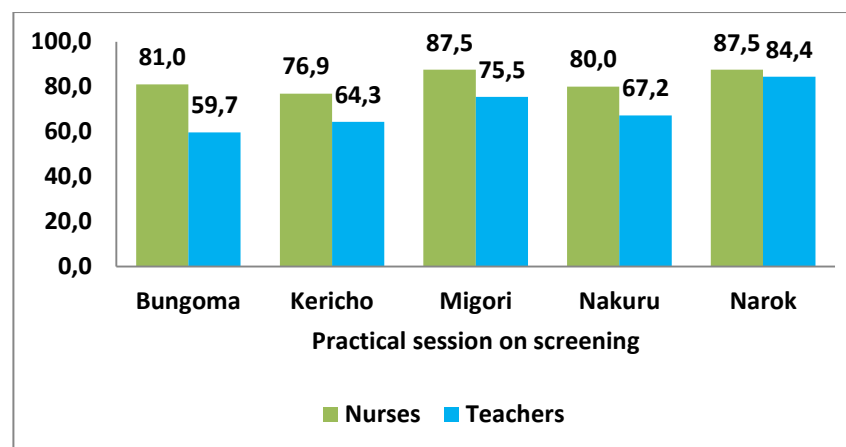
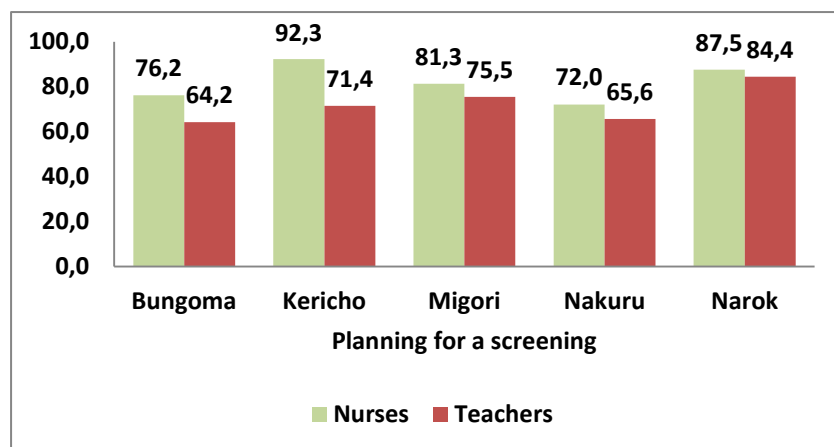


Figure 15.2: Vision and eye practical sessions

Data reporting and referral were both skewed towards the responses of nurses, with the modal frequency for planning for screening and practical session on screening being Kericho (92.3%). The least reported was also a high figure though Narok had the least from recorded (64.1). The following figure 16 displays the information.

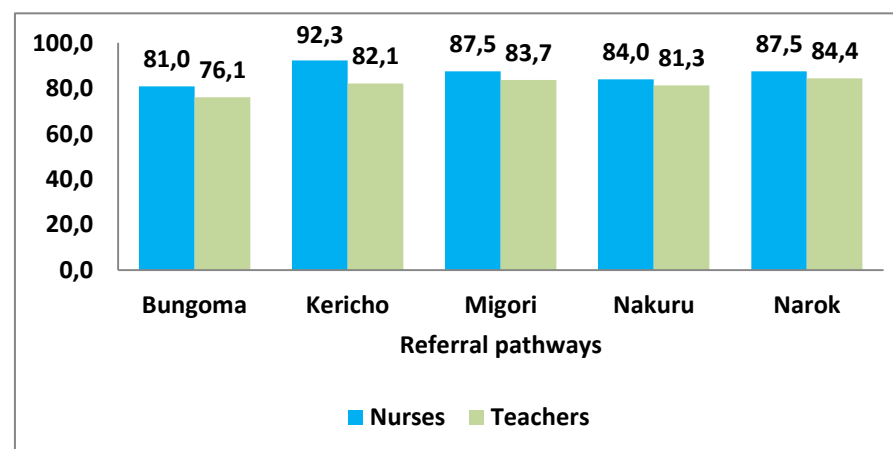
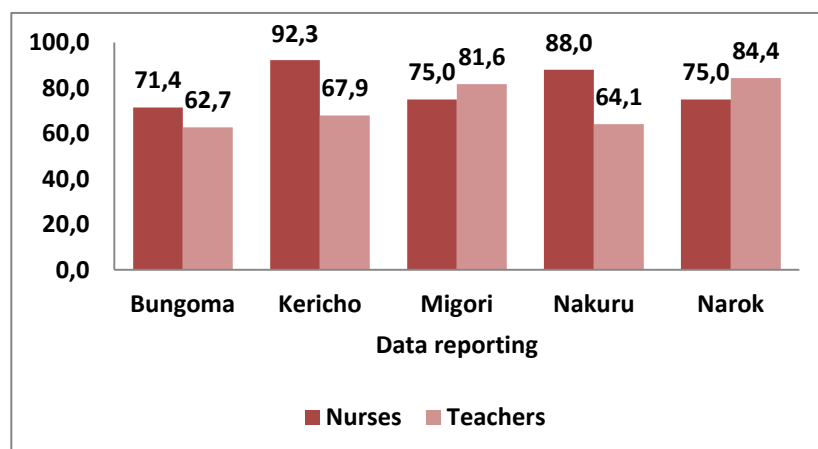


Figure 16: Data report and referrals

Eye health promotion and education was reported in both nurses and teachers with modal frequencies in Narok County. The modal frequency for eye health promotion was reported in Kericho County (92.3%) for nurses and Migori County (69.4%) for teachers. In both sections, there were more responses from nurses than teachers, Eye health and eye health promotion had highest frequency in Narok County for both teachers (96.6%) and nurses (100%). The least frequencies were reported in Nakuru County (67.2%) for teachers and (76.2%) for nurses. The distribution of the information is show in Figure 17.

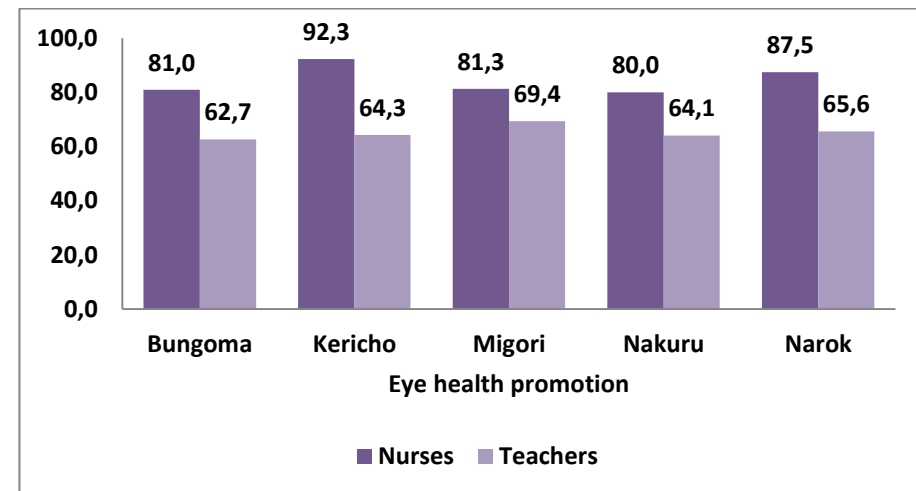
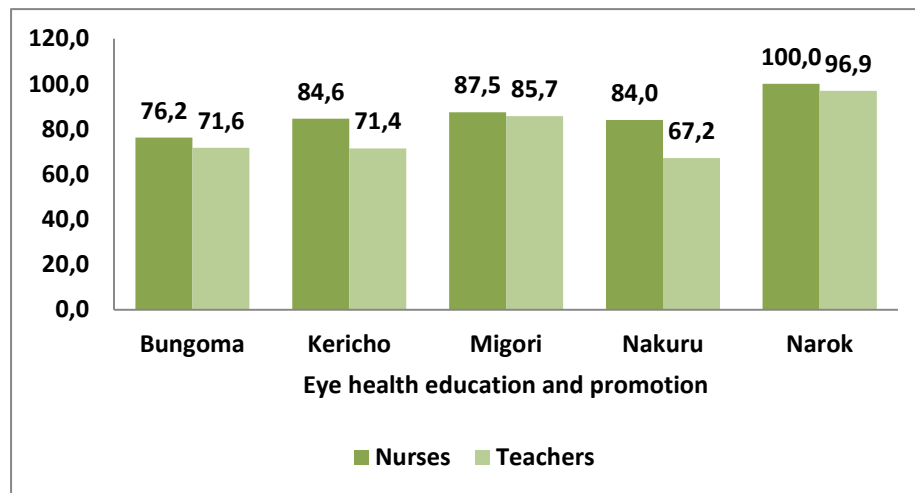


Figure 17: Eye health education and promotion

The common eye diseases and common causes of VI and blindness in children were both reported by almost all participants of the group of teachers and group of nurses. Highest frequencies on the common cause of eye health were reported in Kericho (100%) for teachers and for nurses, it was Migori County, Nakuru County and Narok County (100%).

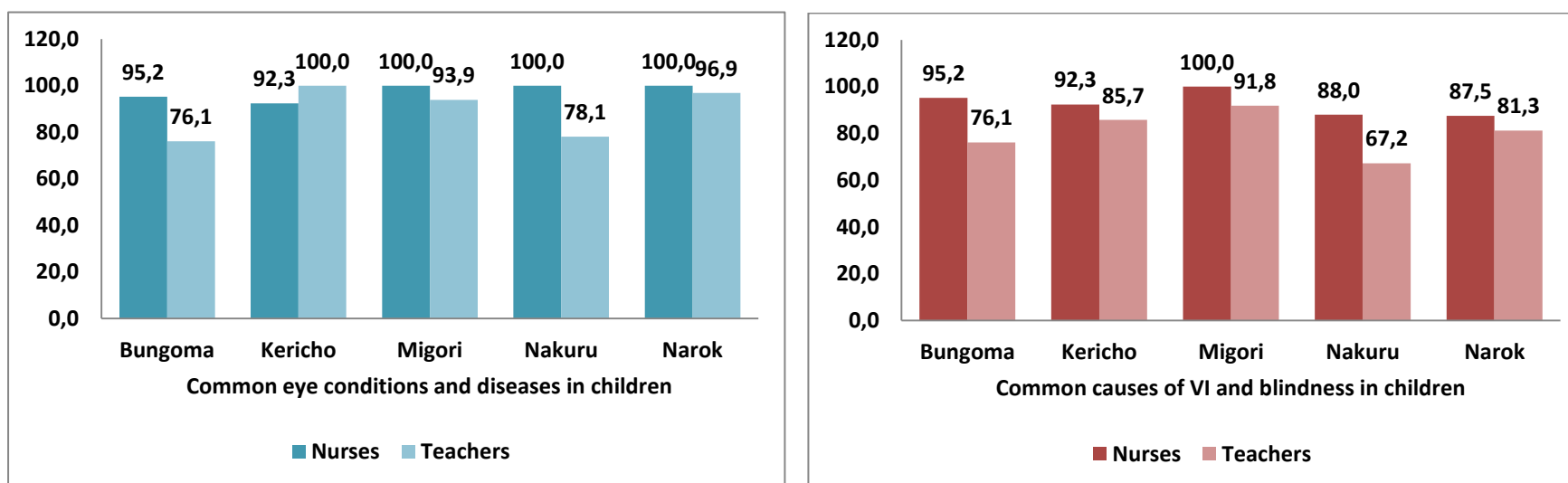


Figure 18: Eye health education and promotion

The distribution of eye health and basic first aid showed a bimodal frequency for visual acuity and eye health in Migori and Narok (93.8%) for nurses and a modal frequency in Narok County (78.1%) among teachers. Nakuru County had the least reported for visual acuity and eye health among teachers (53.1%) and nurses (72%). Basic first aid had highest frequency reported in Narok (93.8%) among nurses and Migori (79.6%) among teachers. Figure 19 show the distribution of the frequencies.

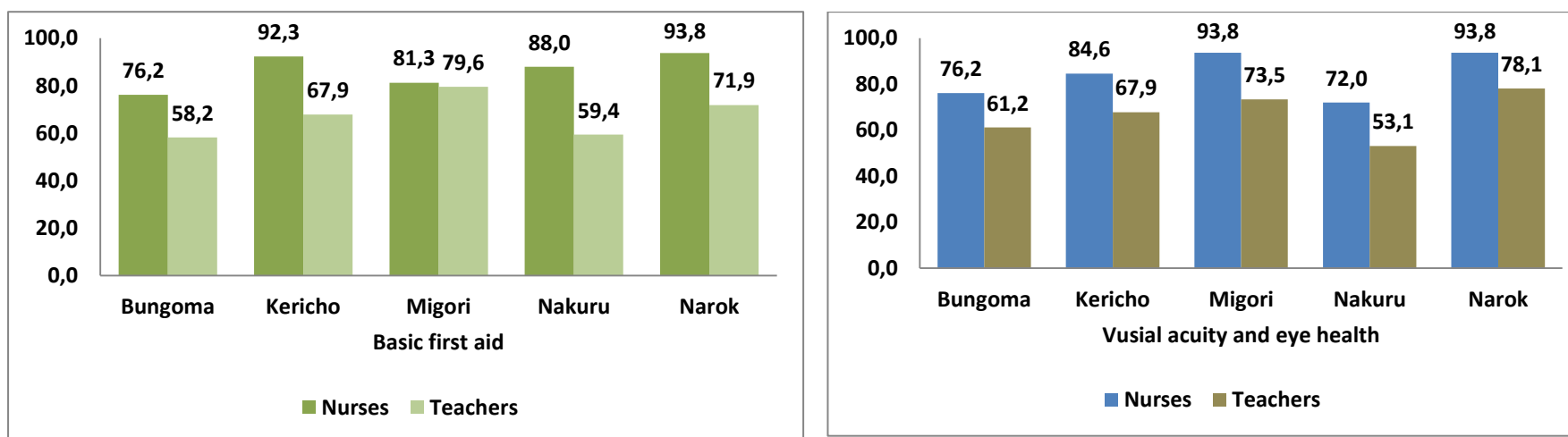


Figure 19: Eye health and basic first aid

The skills benefited but listed from the teacher side were behaviour change-on health promotion and prevention and promoting early service seeking behaviour, activity of daily living (ADL), mobility skills, and communication skills. Identifying objects like maps using

tactile skills. Ability to identify the shape of letters (capital and small, near and far distances), training on low vision module, use of the braille machines, how to measure distance when screening, how to use the manual to sensitize the community.

The other skills which were not listed for nurse were importance of using protective gears, effect of nutrition status and immunization in childhood eye care personal hygiene, lack of knowledge, practical session on screening in a school, treatment use for prophylaxis in Neonates, community Involvement and participation in child eye health project, assist in cataract surgery, use of fundoscopy, pre and post care of patients after surgery (cataract), and common drugs used in eye conditions.

3.2.2 Training Resources and Materials

The training material provided ranged from screening chart, screener E chart, torch, occlude, tape measure and training manual. Since this was a multi-response, almost all of the teachers in Bungoma County reported on the availability.

Screening charts and screening E-charts were both positively skewed for nurses and teachers with Migori County (100%) for both teachers and nurses on E-charts. Narok County and Kericho County also had absolute maximum frequencies (100%) for teachers on E-charts. The least reported frequency on E-charts for nurses was in Bungoma County (81%) and teachers (82.8%). Screening charts had highest frequency in Migori County (100%) for nurses and teachers it was in Narok (84.4%). The least reported frequencies for screening charts were reported in Nakuru County (62.5%) for teachers and in Bungoma County (61.9%) for nurses.

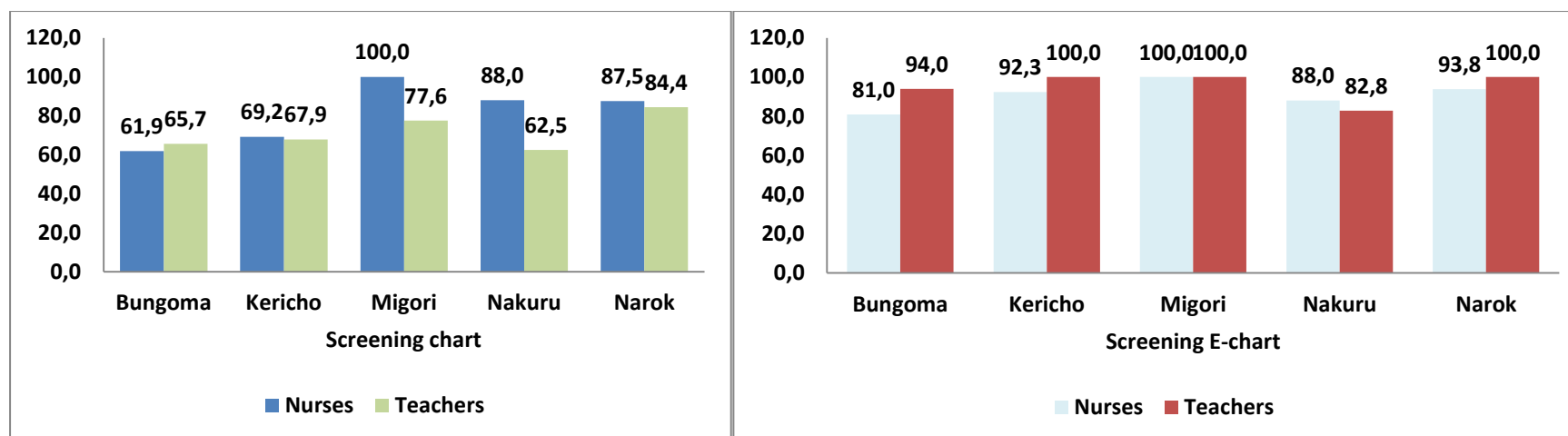


Figure 20: Screening charts and E-charts

Torches and occluder were reported in positively for both teachers and nurses for all five counties. Highest frequency reported for torch was in Kericho (100%) for teachers and a bimodal frequency for nurses in Migori County and Narok County (93.8%). The least frequency among all counties for torch was reported in Bungoma County with nurses (71.4%) and teachers (70.1%). Question concerning occluder had highest frequency in Kericho County (100%) for teachers and Narok County (93.8%) for nurses. The least frequencies were reported in Nakuru County for both teachers (67.2%) and nurses (52.0%).

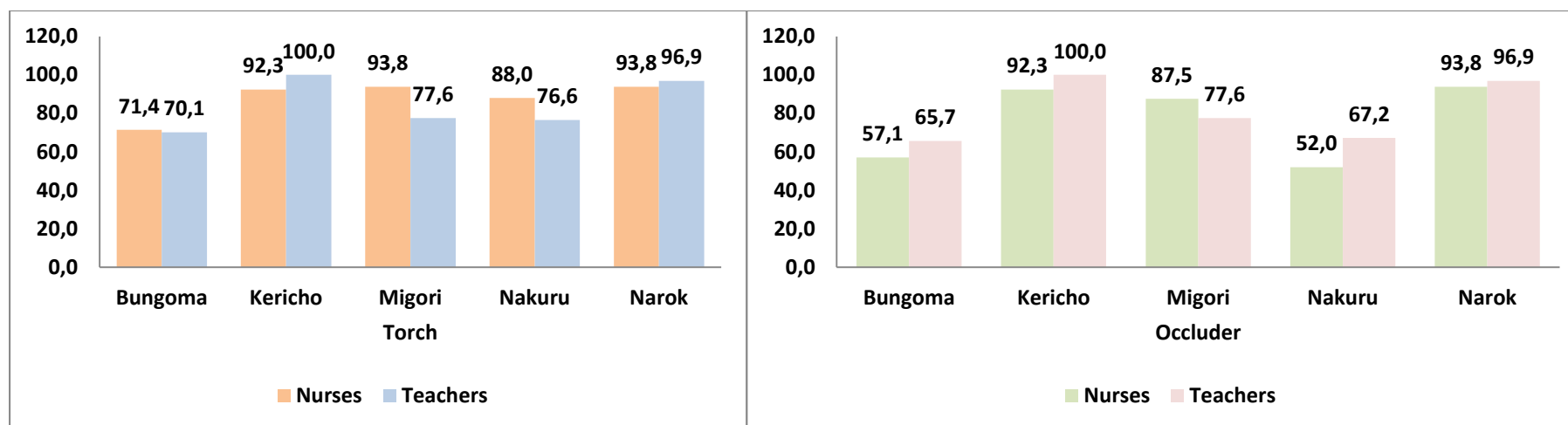


Figure 21: Torches and Occlude

Availability of tape measures and training manual were also reported positively skewed for all counties with the highest frequencies reported in Migori County (100%) for teachers. Highest frequencies for nurses were reported in Migori County (93.8%) for training manuals and in Kericho County (92.3%) for tape measures. Least frequencies were reported in Nakuru (75%) for teachers on training manuals and in Migori County (81.3%) for nurses on tape measure. The distribution of the information is shown in fig 22.

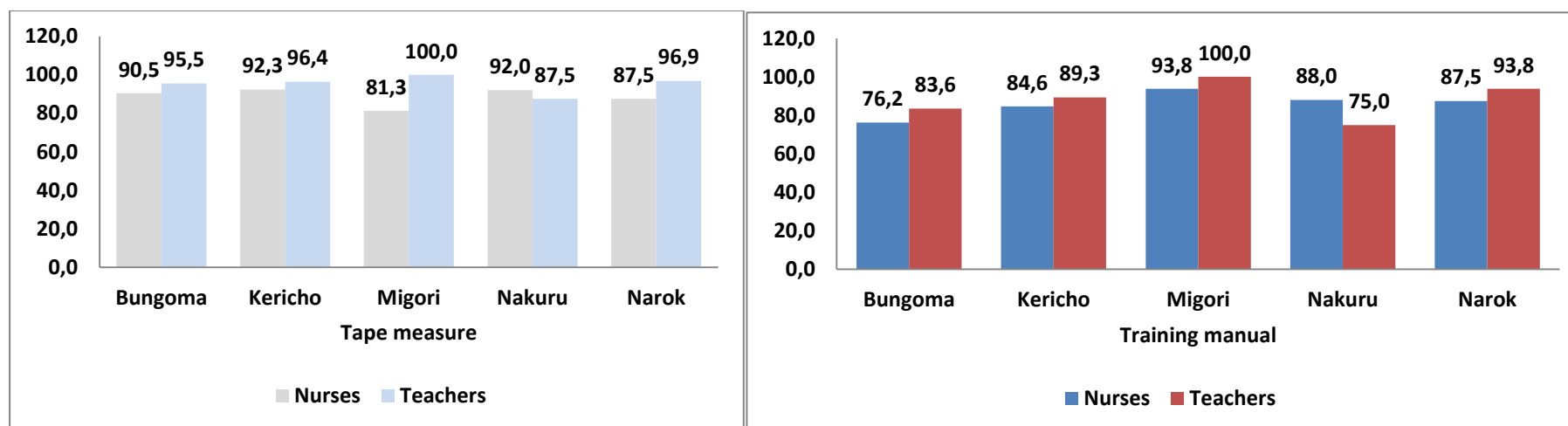


Figure 22: Tape measure and training manual

Availability of training material was rated using indicator such as strongly agree, agree, neutral, disagree and strongly disagree as displayed in Figure 8 below. Teachers in Nakuru had the modal frequency (16%) on 'strongly disagree' on the proposed statement and none of them stated their concerns on neutral. Most of the participants in both classes (nurses and teachers) had higher frequencies on 'agree' and 'strongly agree'. Among teachers, Migori County had the modal proportion (65.3%) of stated that they stated they 'strong agree' and the least 'strongly disagree' was observed in Nakuru County with (1.6%). Kericho County was the only one with mostly neutral to positive perceptions among all counties for nurses but overall all counties expressed positive opinions.

Nurses expressed positive sentiments on the same aspect except for Narok which 'strong disagreed' (6.3%) and disagreed (6.3%). The modal frequency was in Bungoma, where most nurses strong agreed that there was adequate access to training materials. The distribution on whether there was adequate access to material for nurses is presented in fig. 23.1 and for teachers in fig. 23.2 below.

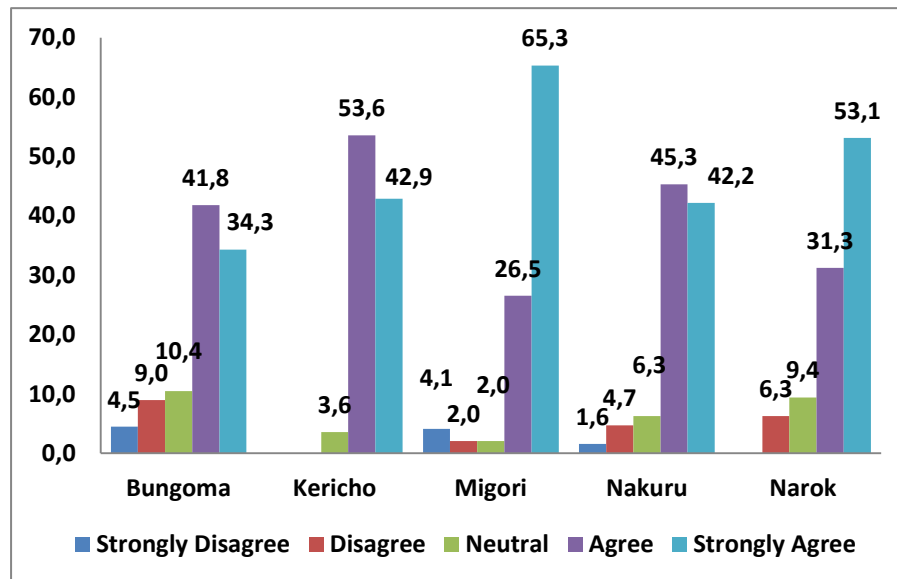


Figure 23.1: Adequate training material (Teachers)

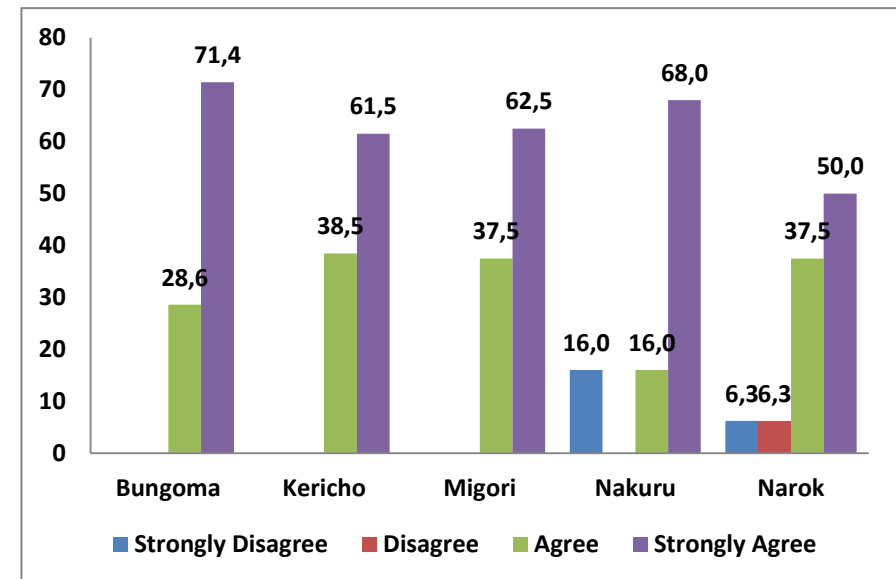


Figure 23.2: Adequate training material (Nurses)

On the aspect of the adequacy of training devices and equipment available for practical use the modal frequency for the nurses was Kericho County (76.9%) strongly agree. All counties were positively skewed suggesting that they were all in agreement with the statement in question. Majority of the nurses were of the positive opinion though few negative responses were reported in Nakuru (16%) and Narok County (6.3%).

Similar responses were reported by teachers showing positively skewed in their opinions with the modal frequency being reported in Migori on strongly agree (67.3%). Negative attitudes were reported in Bungoma County (7.5%), Migori County (6.1%), Nakuru County (6.2%) and Narok County (3.1%) though there few who were neither positive nor negative.

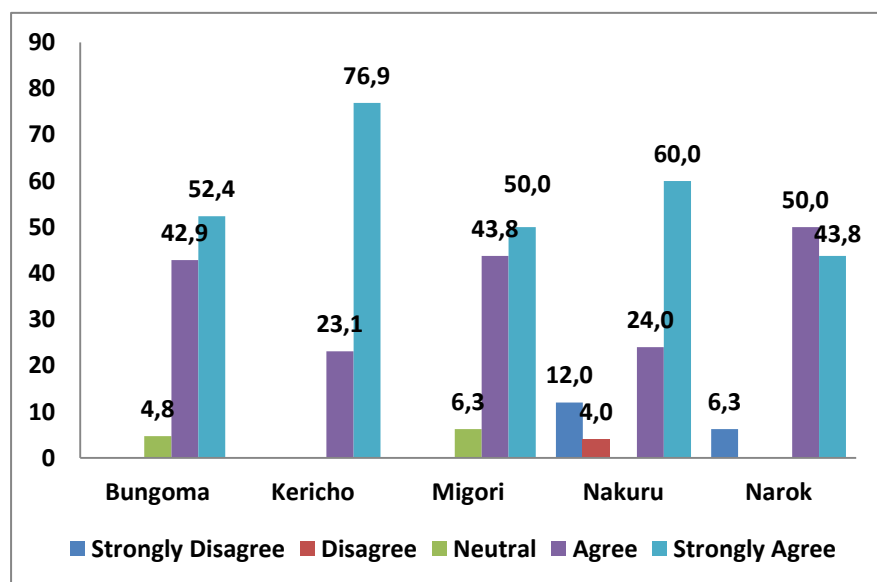


Figure 24.1: Adequate training devices (Nurses)

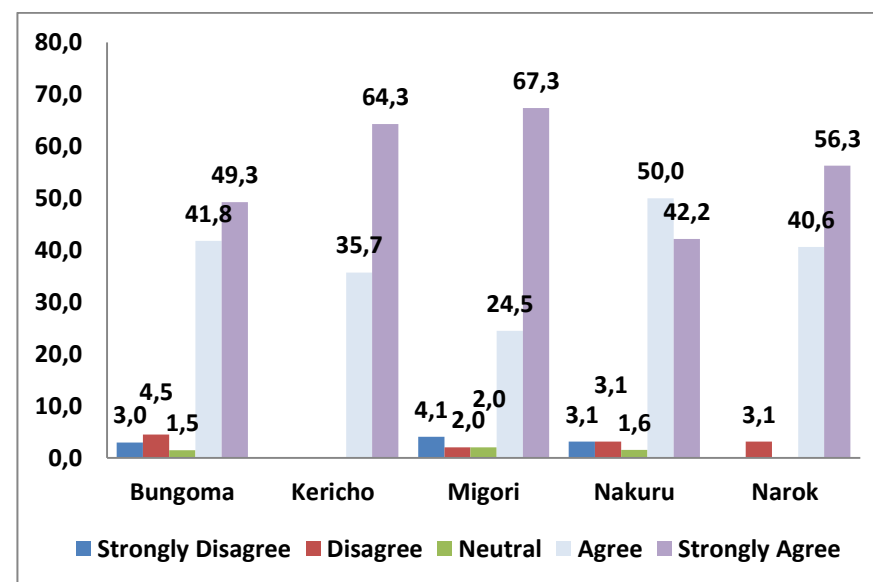


Figure 24.2: Adequate training devices (Teachers)

Opinions on reliability of training devices and equipment used were reported favourably by most of the nurses and teachers. The modal frequency for nurses was strong agree (69.2%) with Migori County and Narok County having an equal frequencies (68.8%). Negative

sentiments were reported on strong disagree (12%) in Nakuru County, implying that there was a small group which was not impressed with reliability of training devices and equipment.

Teachers' opinions were likewise positively skewed with Migori County having the modal frequency on strongly agree (69.4%), followed by Kericho County (67.9%). Few participants were of a strong negative perception whereby Bungoma County (4.5%) and Migori County (2%) and Nakuru County (1.6%). The distribution based on the Likert scale of the sentiments is displayed in fig 17.1 (nurses) and fig 17.2 (teachers). The distribution of reliability of training devices is shown in fig 17.1 (nurses) and fig 17.2 (teachers).

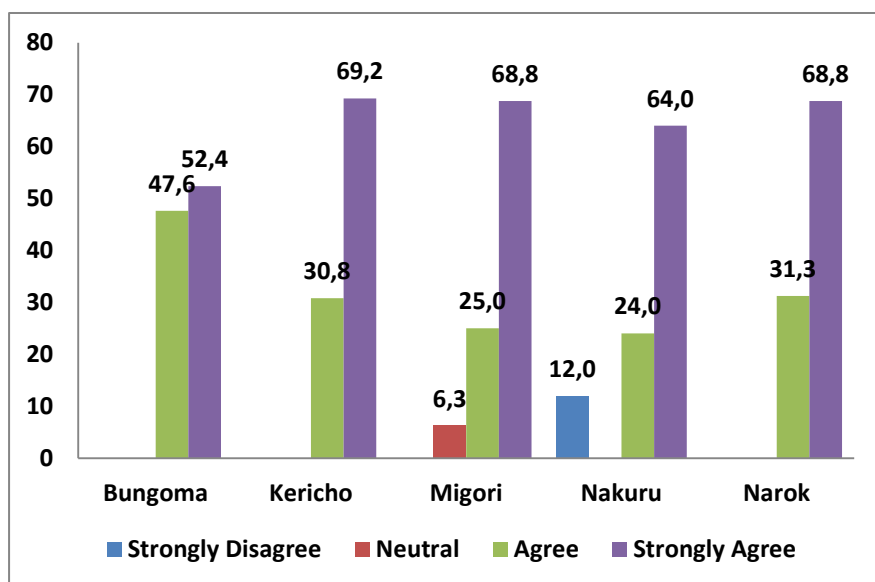


Figure 25.1: Reliability of training devices (Nurses)

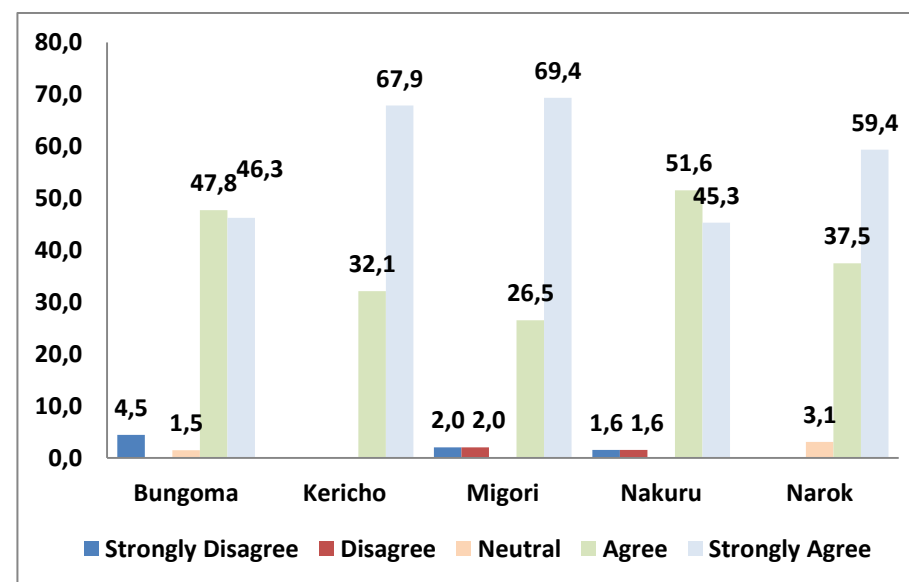


Figure 25.2: Reliability of training devices (Teachers)

Whether there was adequate opportunity to use the equipment within allocated training time was skewed to the positive both for teachers and nurses. The modal class among all counties was the strongly agree class in Kericho County (61.5%) followed by those who reported agree from Bungoma County (57.1%). A significant percentage was of different opinion which was in Nakuru (24%) and Migori (6.3%), stating that they do not agree with the proposed statement. The perceptions of teachers were also positively skewed with the modal frequency of the participants who agree (59.4%) from Nakuru.

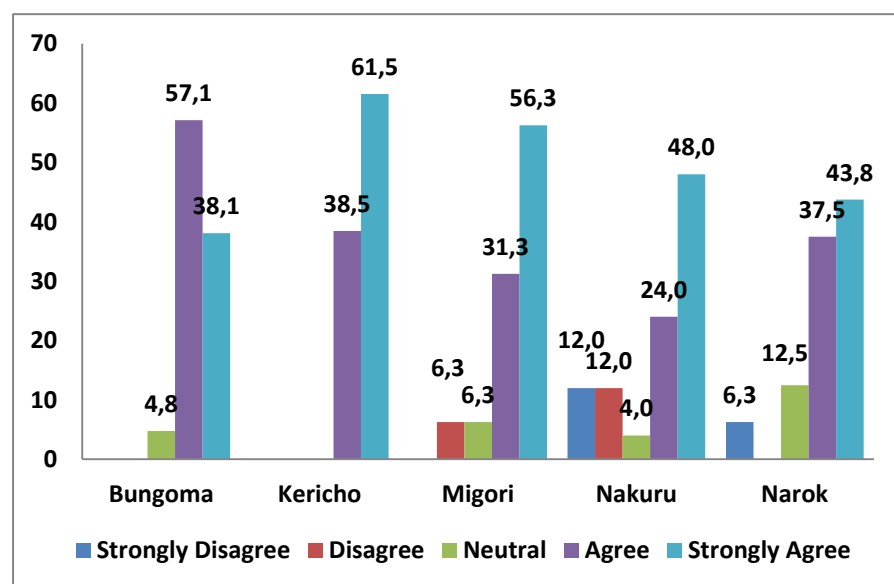


Figure 26.1: Adequate opportunity to use equipment (Nurses)

Among those who strongly agree, the modal frequency was in Migori (42.9%) for teachers and Nakuru County (59.4%) for agree.

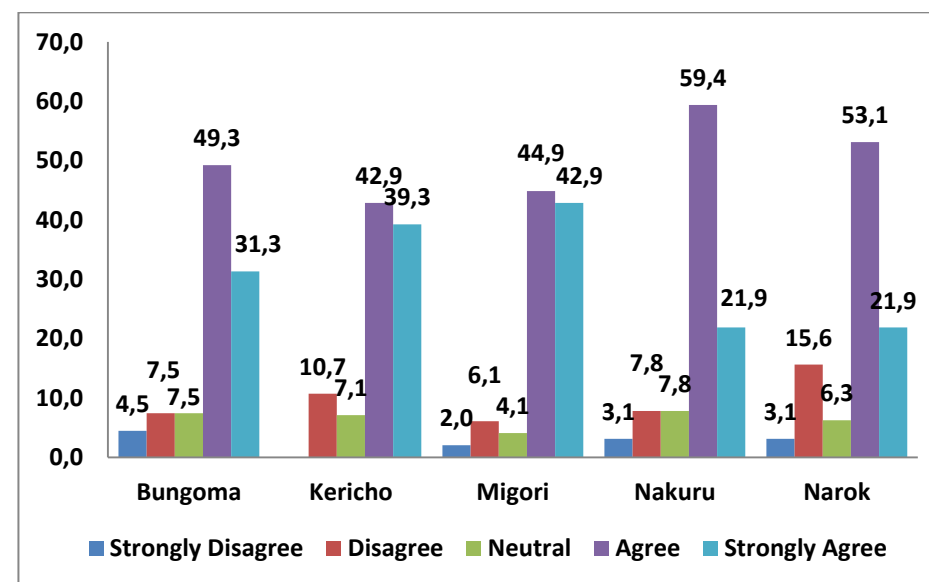


Figure 26.2: Adequate opportunity to use equipment

The participants were asked to comment on the appropriateness of the venue of the workshop. In all countries with the exception of Bungoma County, the nurses strongly agreed that the site was appropriate. However the nurses in Nakuru County had the highest percentage (12%) of the workforce who strongly disagreed on the selection of the venue. The nurses in the two countries Kericho County and Migori County were in their totality positive about the venue selections and had response ranging from 'agree' to 'strongly agree'.

The teaching professionals in all the countries had the modal response of 'strongly agree' with the chosen venues. Narok County had the highest percentage (9.4%) of teacher who thought the venues were not appropriate for the training workshop. Overall, they were more teachers who were neutral about the choice of the venue as compared to the nurses.

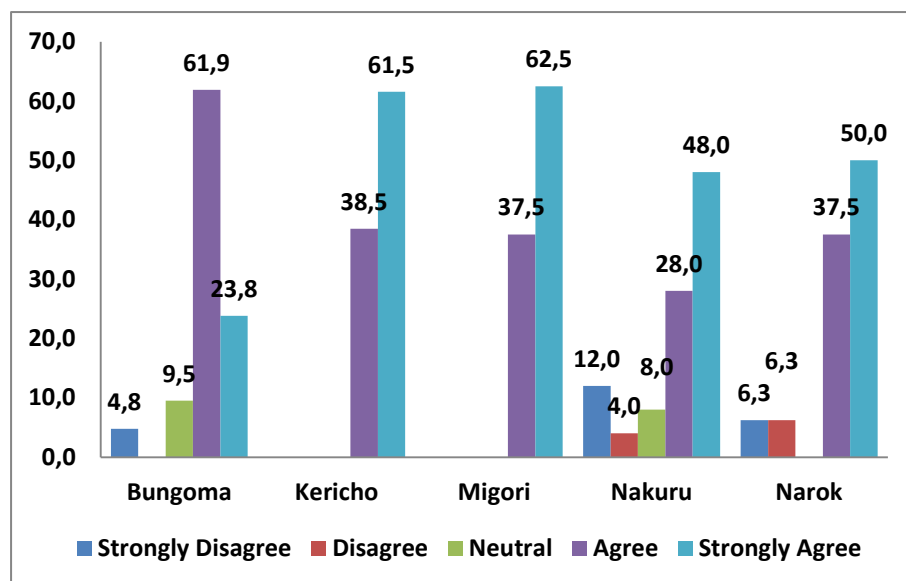


Figure 27.1: Venue provided (Nurses)

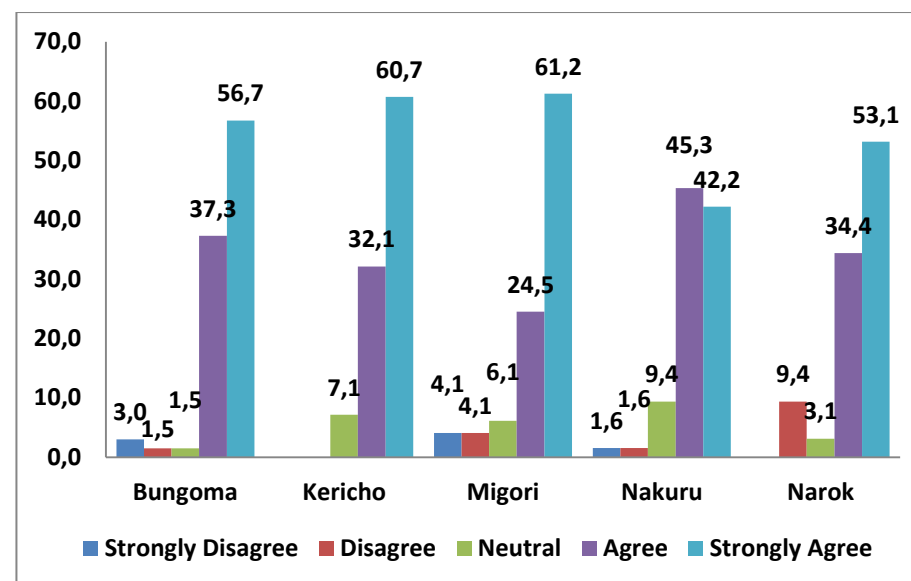


Figure 27.2: Venue provided (Techers)

The training material was received well by the participants however there was an overwhelming request that more materials ought to be provided in the future. The highest request for more materials was recorded from the nurses in Narok County (75%) followed by the teachers in Migori County who shared the same sentiments.

In Kericho County, 7.7% of the nurses strongly disagreed to the idea of providing more material. These nursing professionals felt the material was adequate and the objectives of the workshops were realised with the available resources.

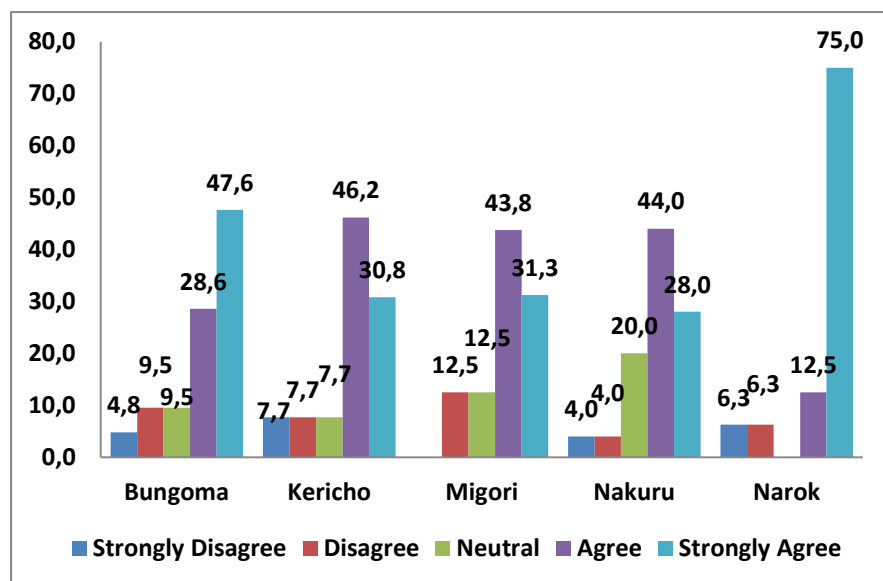


Figure 28.1: Amount of material (Nurses)

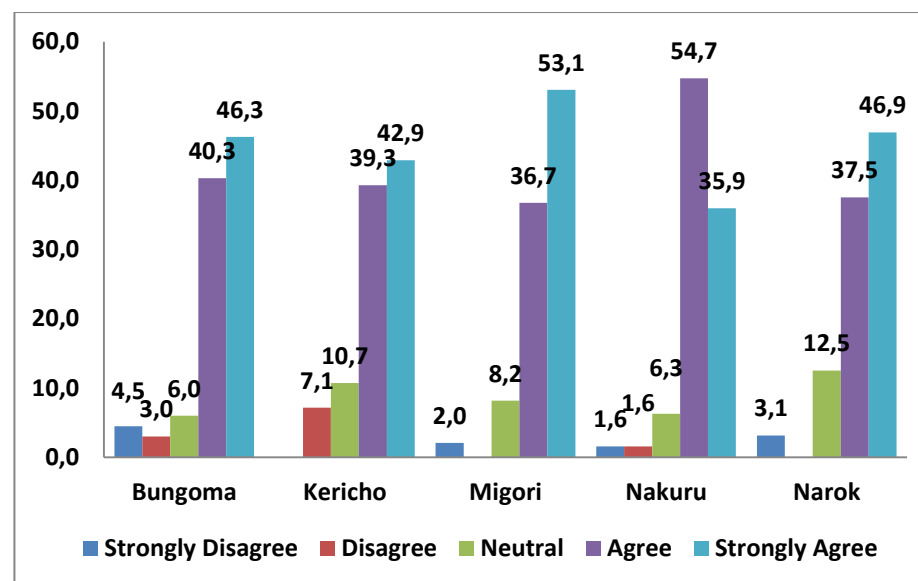


Figure 28.2: Amount of material (Teachers)

Part of this training workshops, required the participant to carry out practical tasks and undergo critique from trained professionals. Practical activities enhance understanding through a hands-on exposure and analysis and learning by discovery. The practical sessions of the training programme were rated adequate by the majority of all nurses and teachers in all the countries.

However a substantial percentage of the nurses said the practical session were inadequate. Those who disagreed with the amount of practical assessment done were recorded from nurses in Narok County (25%), Nakuru County (18.8%), Kericho County (17.9%) and also a high from teachers in Nakuru County (20%) among others.

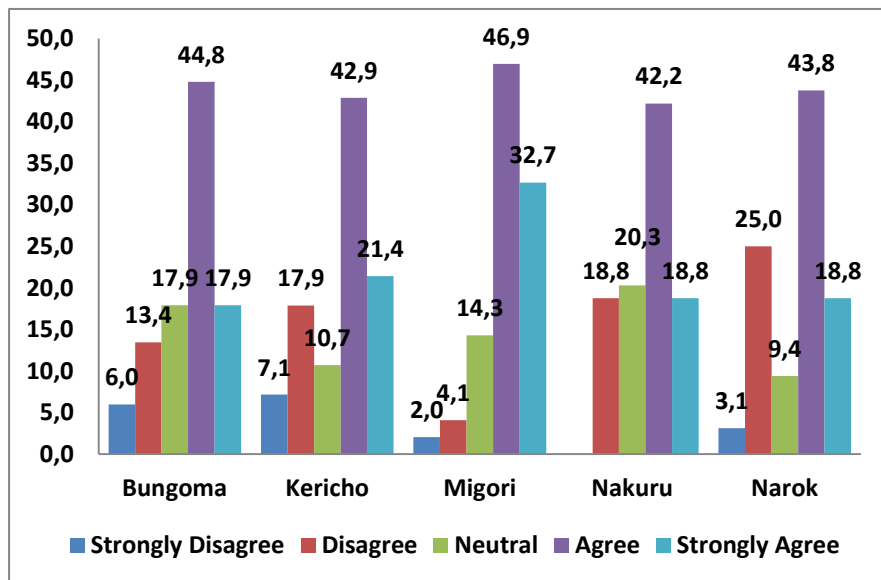


Figure 29.1: Practical sessions were adequate (Nurses)

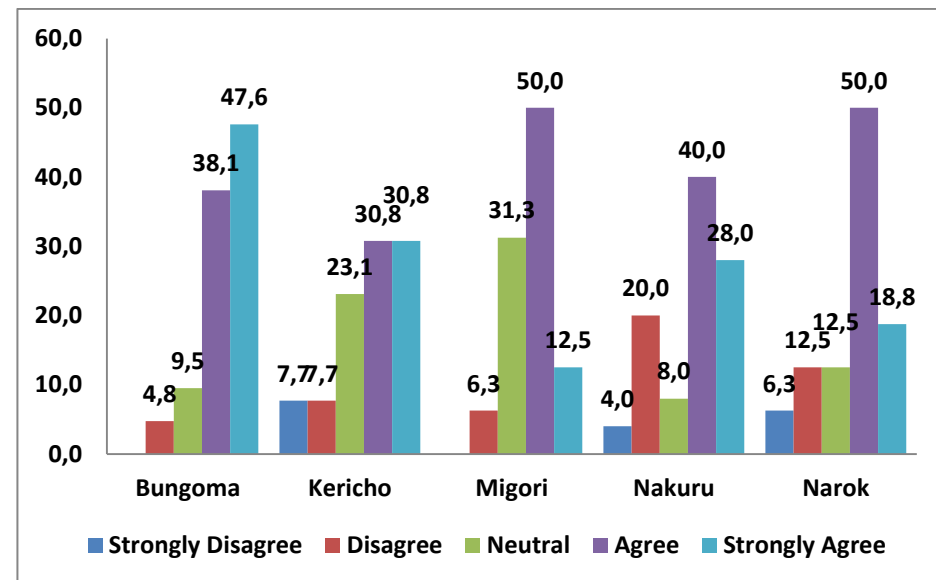


Figure 29.2: Practical sessions were adequate (Teachers)

On the aspect of training resources and material needing improvement, the modal frequencies were recorded from the teachers in Nakuru County (60.9%) and the nurses in Narok County (56.3%) where they agreed. However, on the contrary there were a significant proportion of both nurses and teachers in all countries who disagreed that the material needed some improvements

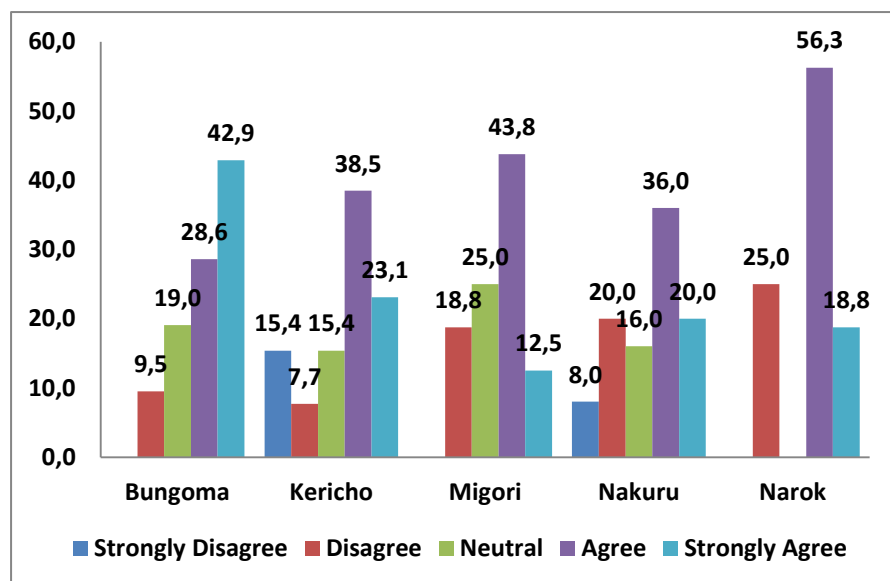


Figure 30.1: The training resources need improvement (Nurses)

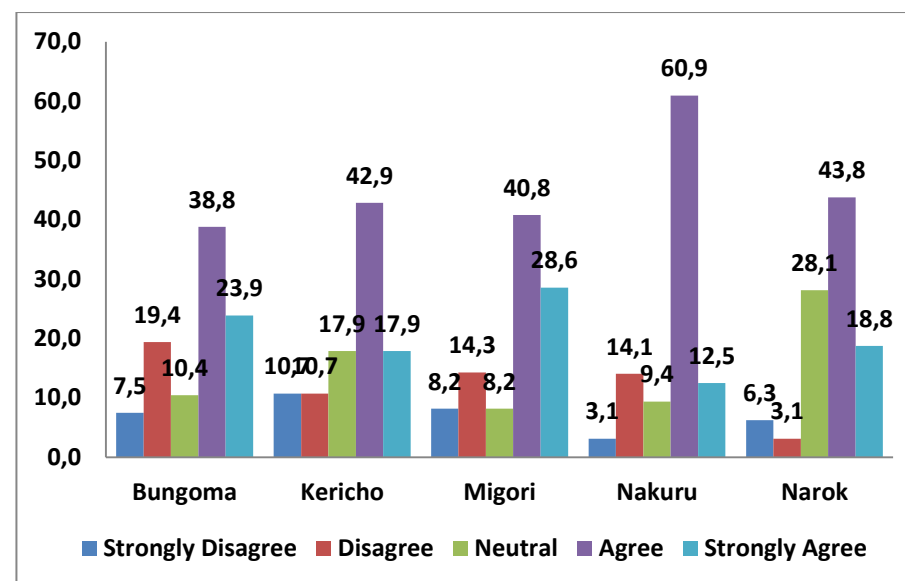


Figure 30.2: The training resources need improvement (Teachers)

The nurse reported that resources and infrastructure should be improved to ensure a better training experience, different reasons were pointed out. These include availing the equipment and resources in time during the training to every participant, and also possibly by providing more time as well. Some stated the need of doing training in a hospital setup with more resources in terms of drugs, eye drops and ointments. The use of technology was also suggested as in introducing technology where any new condition can be shared via media and diagnosis made at higher level (smart phone technology). Venues for trainings were also suggested to be close to hospital so that it can come easy for practical sessions. Provide a bag for carrying equipment during work, also the health workers to be provided with

transport during field work, especially for those who go to rural areas. There should be a refresher training and training of all staffs that come into contact with children.

Issue of refresher courses to see how things are moving was also raised by teachers. More time should be allocated because time was short and also information should reach participants on time for preparation. It was also raised that there was not enough equipment for practical sessions especially for the disability ones. Things like batteries for use with the pen-torch and time for training was raised as an issue also for teacher since they pointed out that more time was needed with more audio visual equipment e.g. (compact disc) given to the trainees and PowerPoint slides being given out. The room was small with inadequate light and provide a larger screening chart.

3.2.3 Training Quality

Training quality was rated on the difficultness ranging from extremely difficult to very easy. Sentiments of nurses were all more positively skewed with the measures of central tendency displaying the modal class for Kericho County (61.5%) and Bungoma County (47.6%) on somewhat easy, Migori County (37.5%) and Nakuru County (44.0%) on neutral and Narok County was bimodal on somewhat easy (37.5%) and neutral (37.5%).

The opinions of teachers were positively skewed with the modal class being neutral (neither easy nor difficult) and for Migori County (32.7%) being somewhat easy. Among all counties, extra difficulty was reported only in Migori County (2%) with also the modal frequency on somewhat difficult (26.5%)

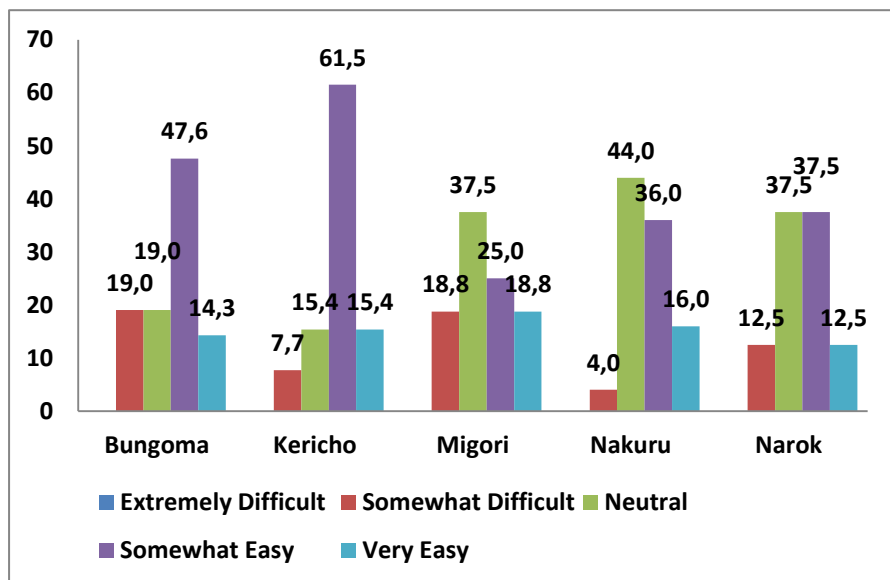


Figure 31.1: Overall difficulty of the program (Nurses)

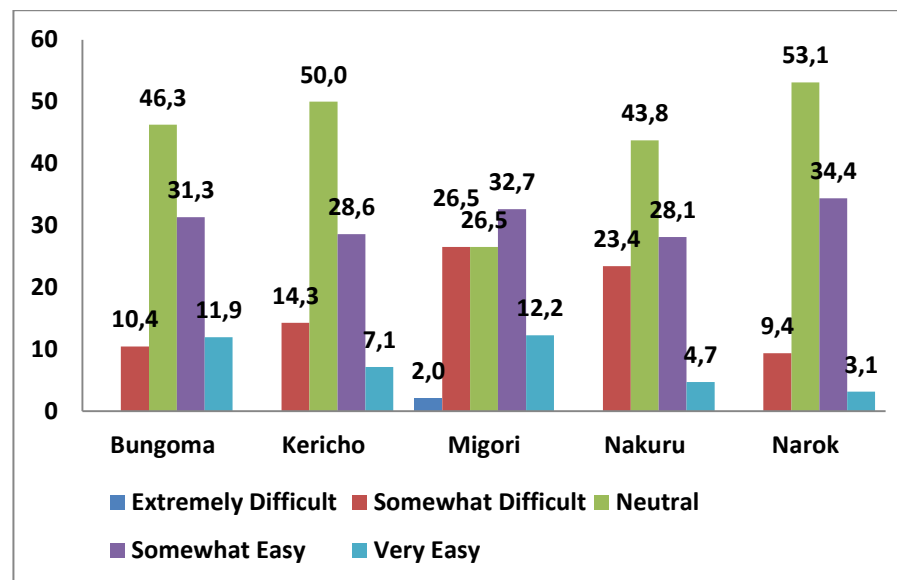


Figure 31.2: Overall difficulty of the program (Teachers)

Both the nurses and teachers in Bungoma, Kericho and Narok counties showed the highest frequencies for the opinion that the learning objectives of the course were clear to very clear. 0838805950

The teachers in Migori had the modal frequency (44.9%) on the opinion that the learning objectives were very unclear. Sharing the same sentiment with them were the nurses from Nakuru and Migori and teachers from Nakuru, with proportions of 36.0%, 31.3% and 29.7% respectively that vowed the learning objectives to be very unclear.

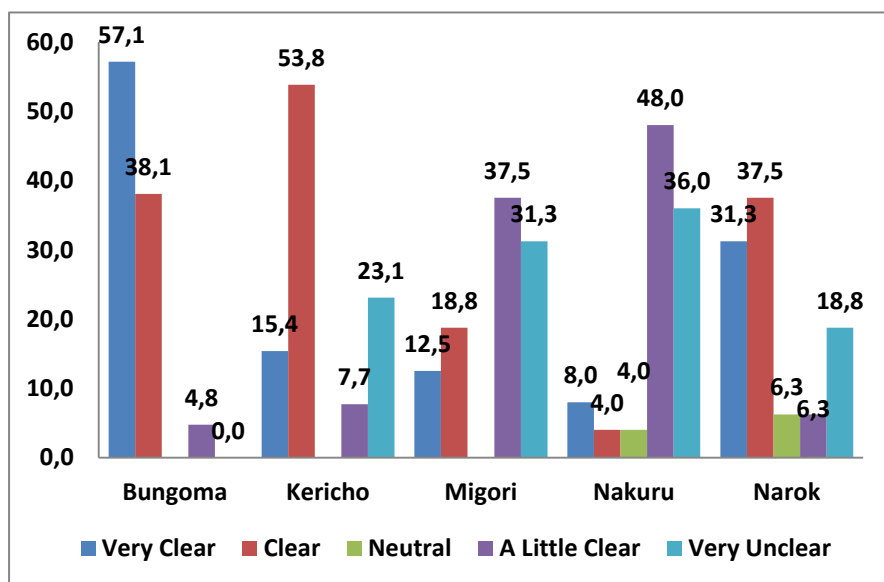


Figure 32.1: Clarity on learning objectives (Nurses)

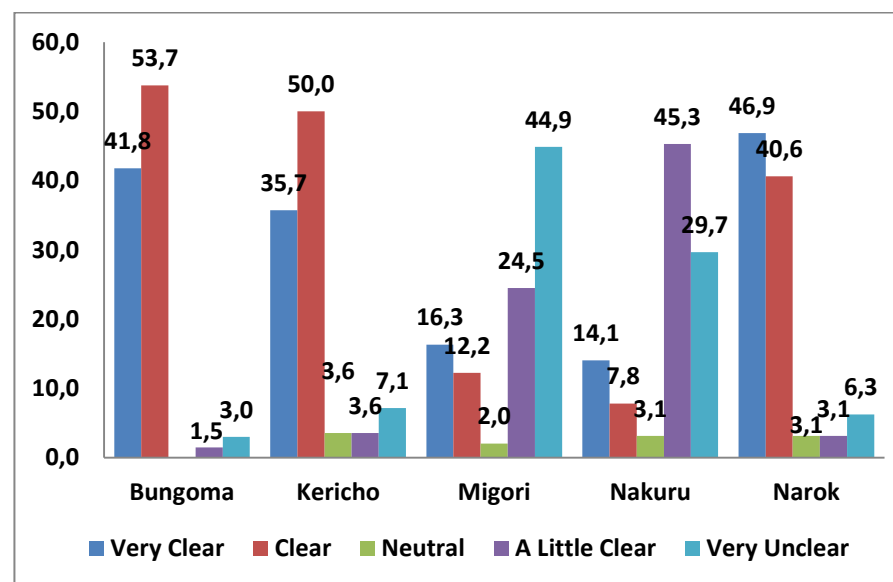


Figure 32.2: Clarity on learning objectives (Teachers)

Assessment on whether knowledge learned at the training has changed views on the need and importance of eye health school screenings were confirmed positive by almost all participants except two (one from Bungoma County and the other one from Nakuru County)

Nurses stated that through the knowledge obtained from the training, they can now offer eye health education and promotion. This was stated in the form of clear observation and the ability to detect the eye problems especially in school going children then refer them to specialists. On the same note, most teachers appreciated the fact that they can now detect the eye problem a child might be having and assist by placing them in a special class. Awareness of eye health and signs of unhealthy eye were also pointed out as a special need in child eye health so through the training, a number of teachers stated that they are now aware about its importance. Some teachers said through the knowledge obtained, they are confident of screening their school children regularly and refer should there be a need.

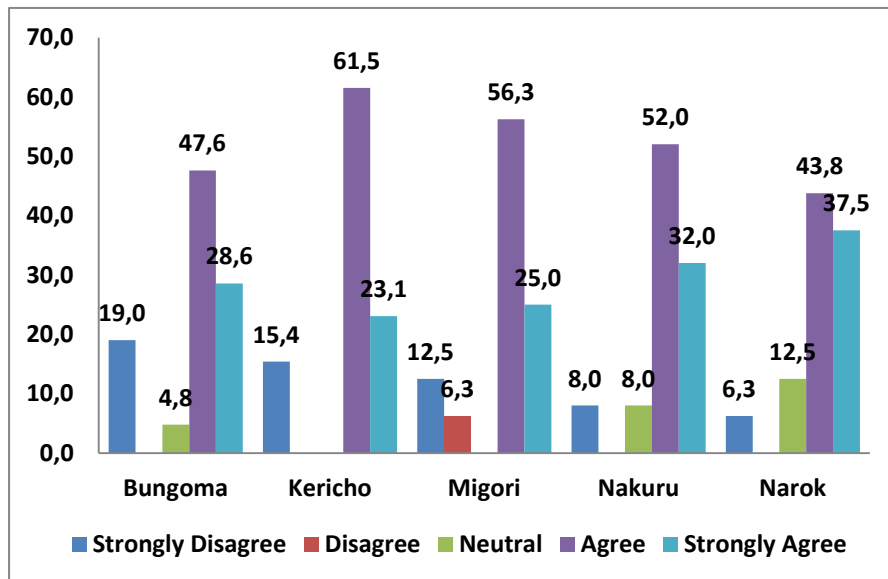


Figure 33.1: Theoretical aspect (Nurses)

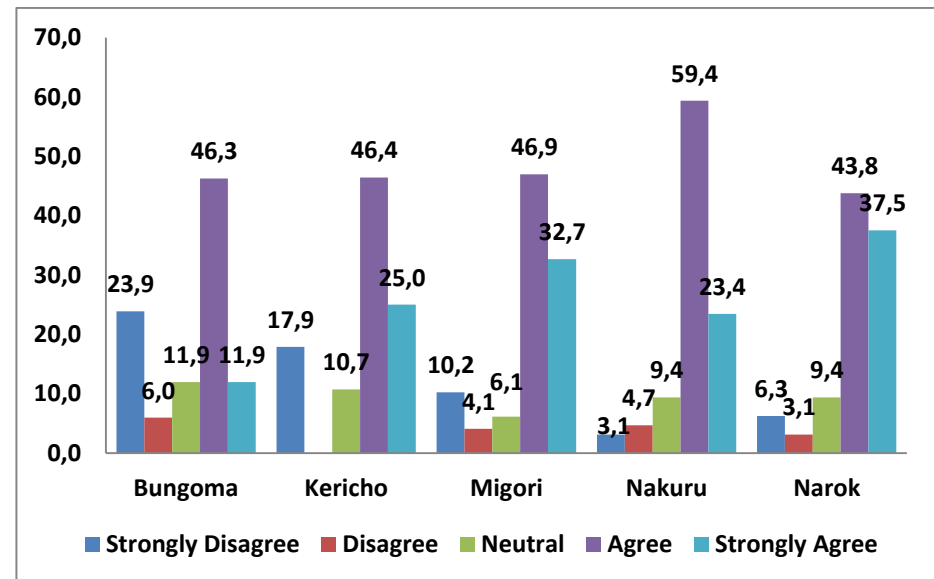


Figure 33.2: Theoretical aspect (Teachers)

On the aspect of workload manageability, in all counties and across the two professions, there was a resounding opinion that the workload was manageable. This was evidenced by the fact that in all countries response with the highest frequency was agree

In both populations, the percentages who disagreed with the opinion that the workload was manageable were low, with the highest proportion of 28.1% recorded in Narok from the teacher component.

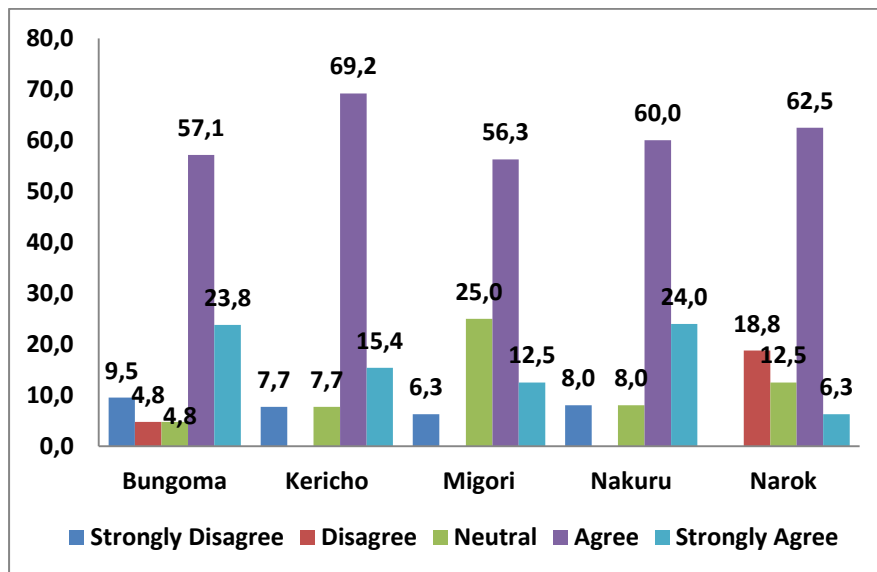


Figure 34.1: Work load manageability (Nurses)

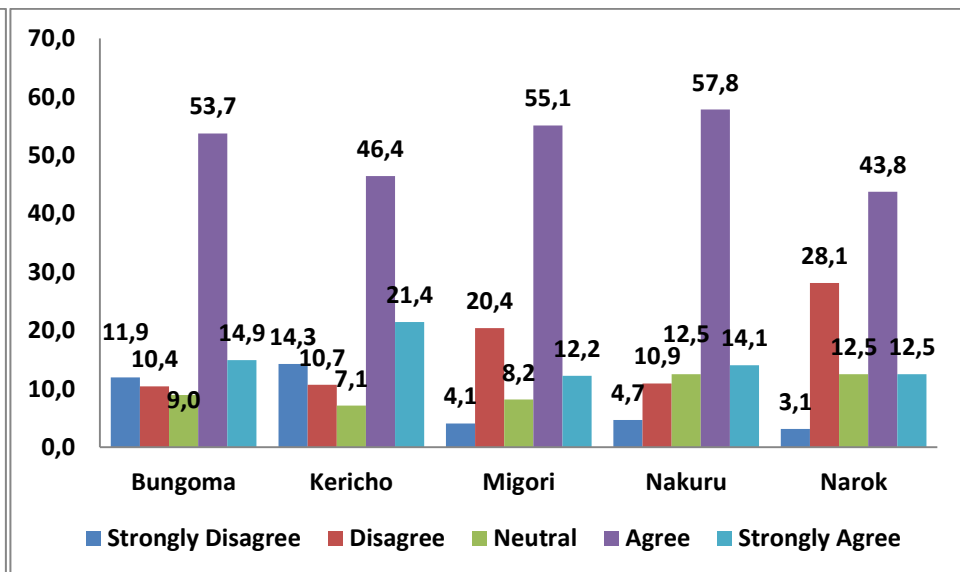


Figure 34.2: Work load manageability (Teachers)

Another criterion that was used to evaluate the overall impact of the sessions was to ask the participants if they thought they were allocated enough time for self-study during the exercise. For the nurses, those who agreed and strongly agreed constituted the greater population of the nurses' population in all the counties. Narok County (81.3%) and Nakuru County (48%) recorded the highest and lowest percentages of those who agreed and strongly agreed for the nursing professionals. agreed. This observation could be due to the fact that many nurses have sound background knowledge of eye health and hygiene and so they did not require much time to go through the study material.

In all the countries, there were more than 26% of the respective teacher populations that disagreed and strongly disagreed. This view can be attributed to lack of background knowledge of eye health science amongst many teachers.

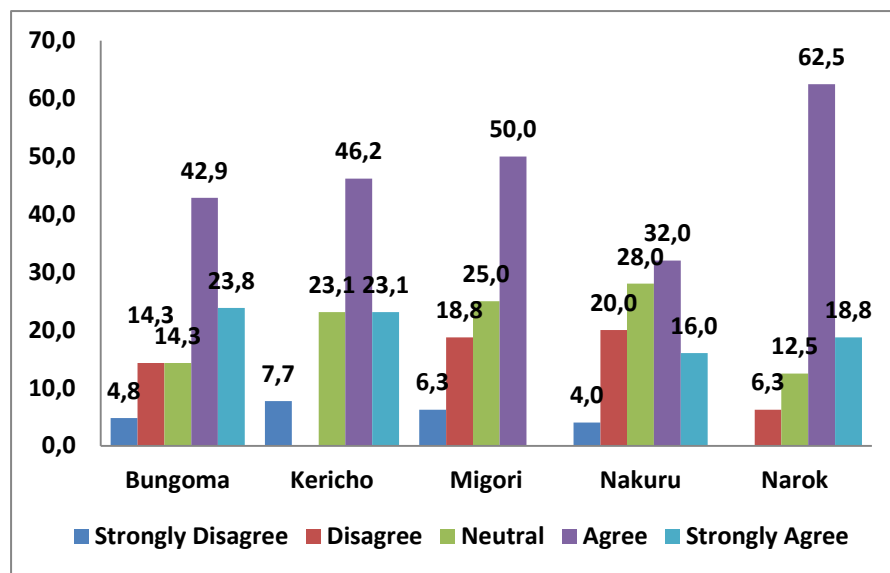


Figure 35.1: Self-study time (Nurses)

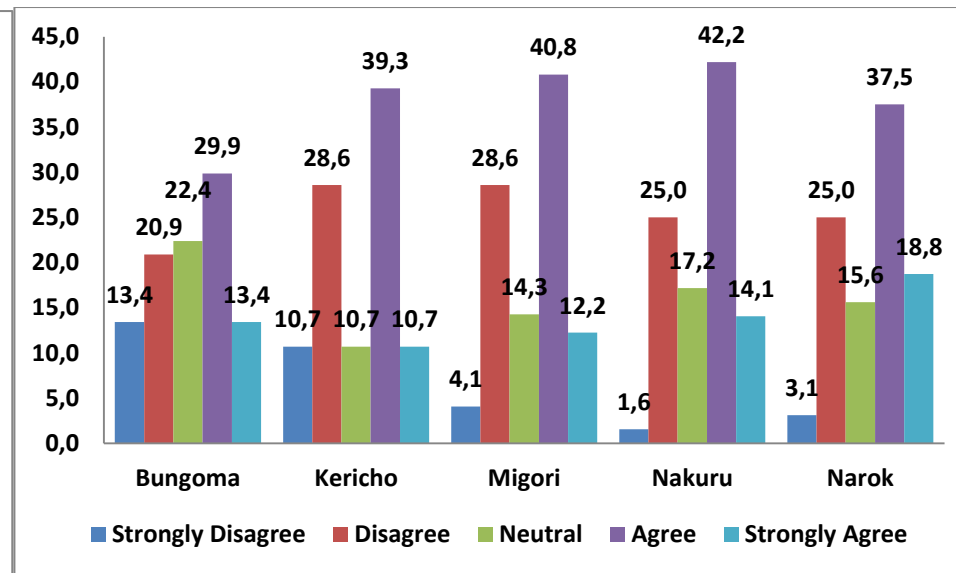


Figure 35.2: Self-study time (Teachers)

The participants were also given a chance to comment on the overall content of the training workshop. The nurses in Narok County had the highest frequency of 81.3% of those who “Agreed”.

Amongst the teachers, the most common response was ‘Agreed’ in all the counties with the mode of 56.3% recorded in Narok County. Teachers constituted the greater percentage of those who disagreed with the highest observation of 7.3 % realised in Nakuru County.

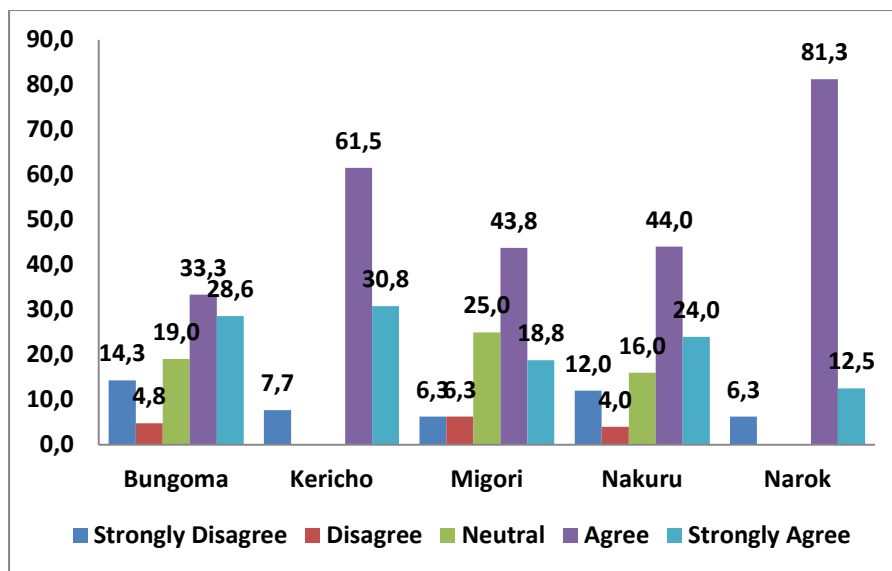


Figure 36.1: Overall content (Nurses)

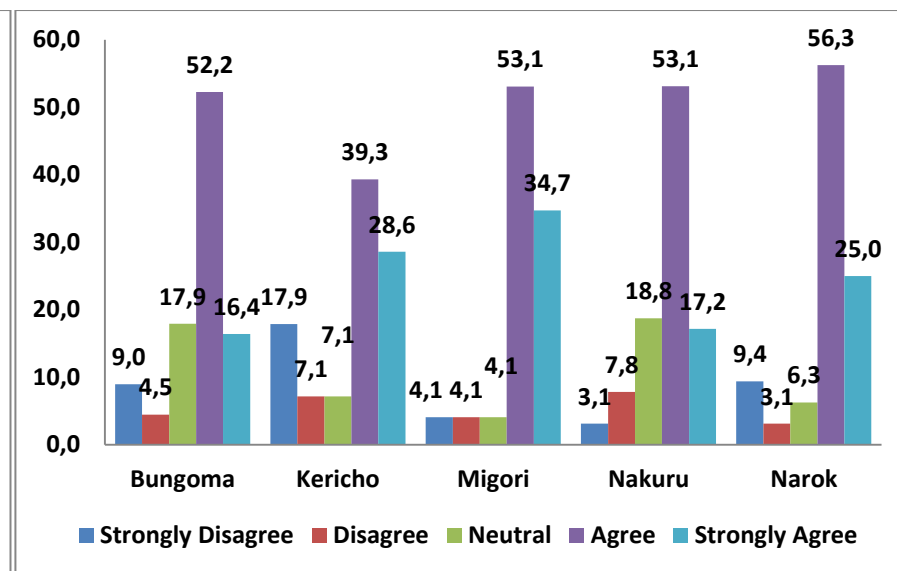


Figure 36.2: Overall content (Teachers)

The nurses in all the countries agreed that the level of content was acceptable for the participants. Across the counties only nurses in Bungoma and Nakuru counties recorded more than 20% of their respective population disagreeing with the level of the content. On the contrary, the teachers in Migori County recorded the highest percentage of 59.2% of those who 'strongly agree'.

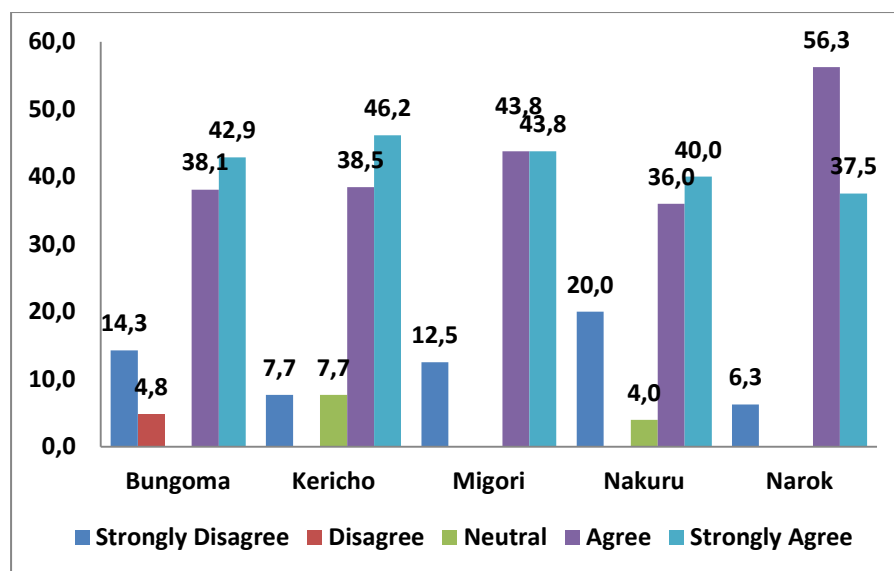


Figure 37.1: Level of the content (Nurses)

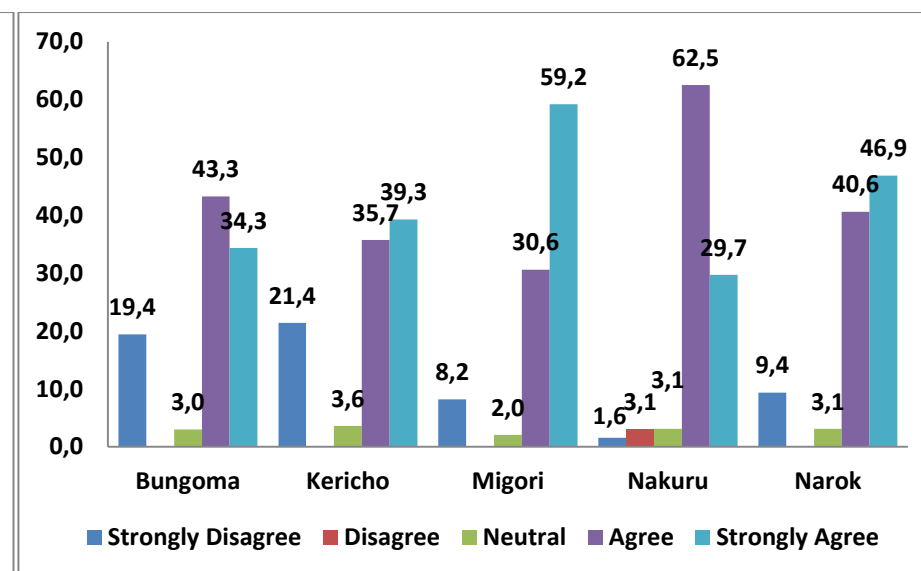


Figure 37.2: Level of the content (Teachers)

The overall arrangement of the course topics was appraised by all the participants in the two professional disciplines in all the counties. The most common response by both teachers and nurses was 'Agree'. The topics were linked well and it made it easy for both groups to follow the presenters throughout the training sessions. Nurses in Migori County had the modal percentage of 68.8% of participating nurses agreeing that the topics were linked to their satisfaction.

The highest opposition to the link between the topics was noted from the nurses and teachers in Bungoma County as well as the teachers from Kericho County. These participants preferred the topics to have been arranged in order of complexity even though they acknowledged that all the topics were relevant.

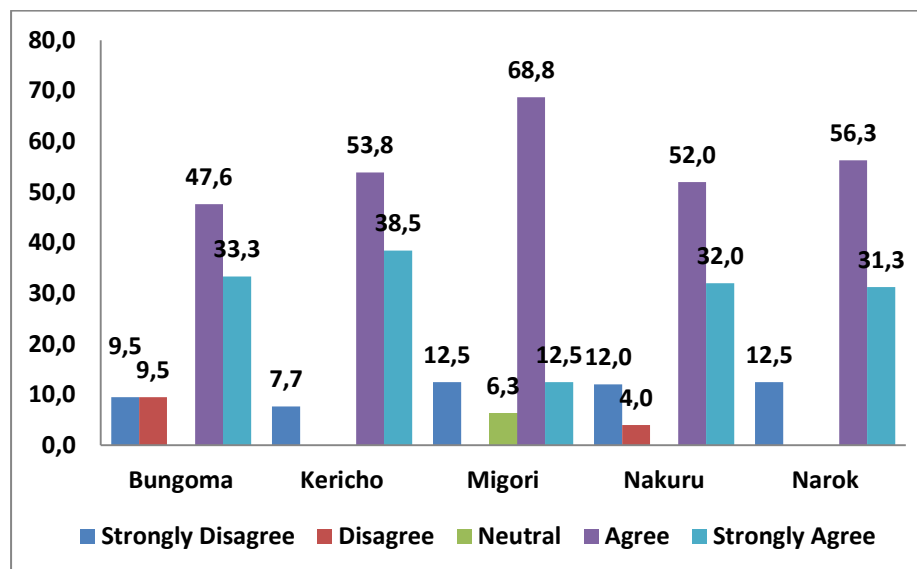


Figure 38.1: Linkage between topics (Nurses)

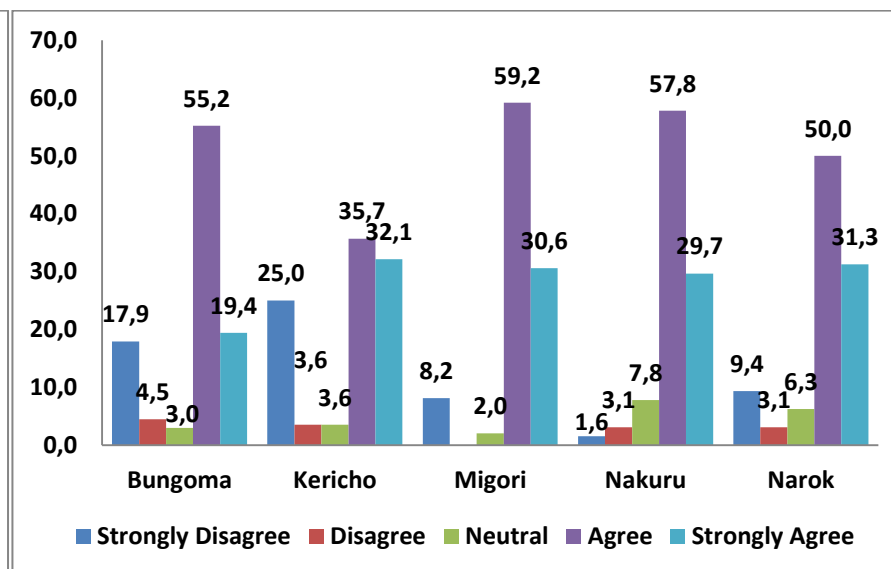


Figure 38.1: Linkage between topics (Teachers)

The workshop adequately equipped the participants with the knowledge and skills to be able to perform eye screening exercises with confidence. The nurses in all the countries reported that their skills were boosted by the interactive sessions and active debates that characterised the whole duration of the workshop. In Bungoma County 23.8% of the nurses' responses, however, felt the exercise was not conclusive to equip all the participants with the know-how to perform eye screening.

The teachers from all the counties were impressed with the presentation and vowed that their view on eye health will never be the same again. The majority of the teachers said they gained knowledge that will go a long way in identifying learners with eye problems and

advise them to seek professional help earlier. The skills obtained in the workshop will help teachers identify learners with barriers due to sight problems and give the attention and assistance that they require. The teachers in Nakuru County had the highest positive opinion (97%) that they can, with confidence perform eye screening on the students. However, 25% of the teachers in Kericho County disagreed that the skills attained were adequate to perform screening exercises.

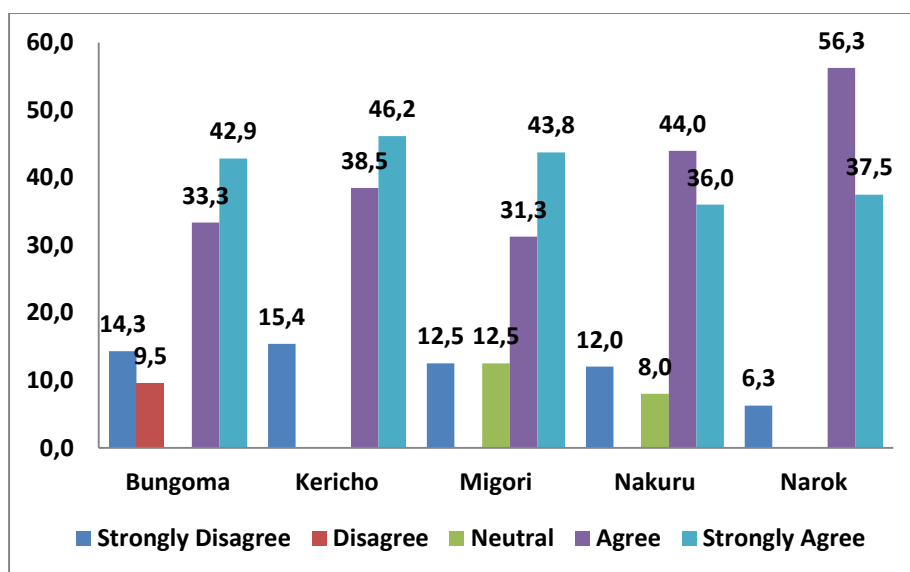


Figure 39.1: Adequate for eye screening (Nurses)

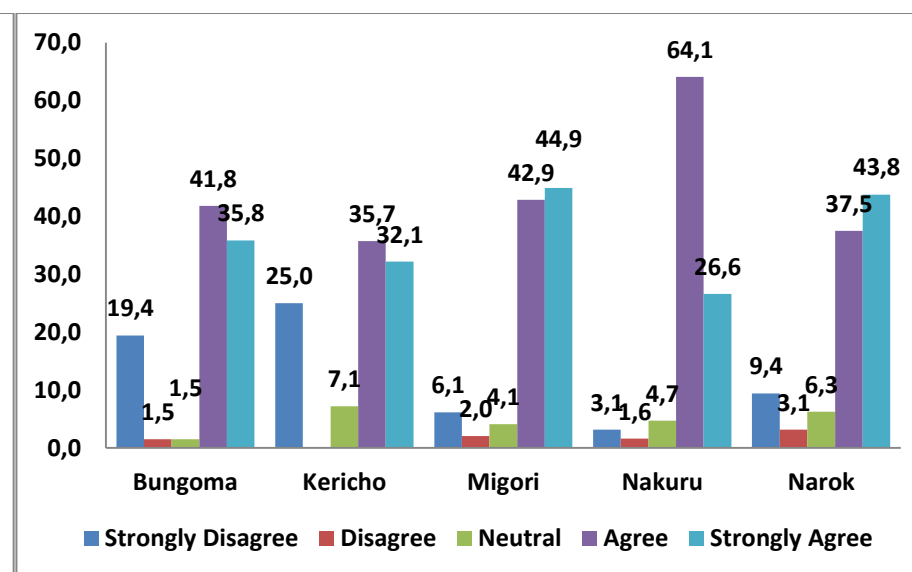
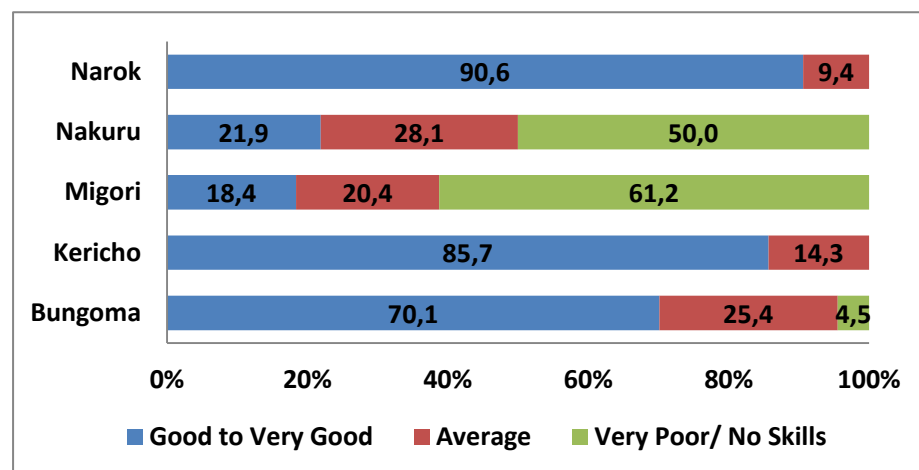


Figure 39.2: Adequate for eye screening (Teachers)

3.2.4 Trainer's Skills

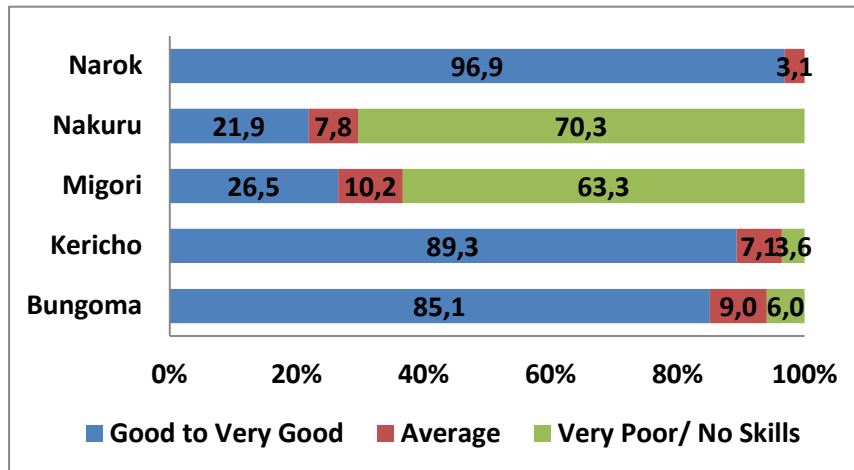
3.2.4.1 Skills for Teachers

All the teachers who participated in this exercise were afforded an opportunity to comment on the skills and knowledge displayed by the facilitators of the program. Most of the responses were positively skewed although in Nakuru County, there were a significant proportion of participants who expressed negative opinions on most of the questions.



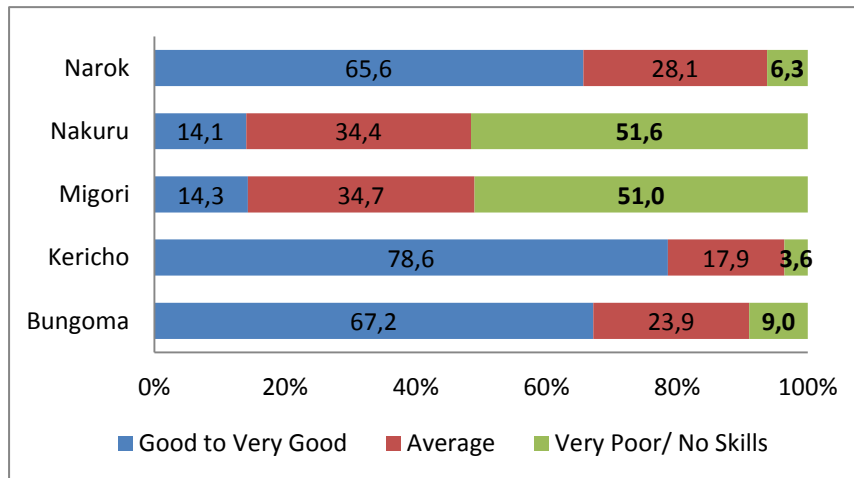
First the teachers were to respond if the trainers managed to portray the significance of the child eye health project. In Narok (90.6%), Kericho (85.7) and Bungoma (70.1%), the majority of the teachers were in agreement that the trainers were fully aware of the significance of the project. In Nakuru, 50% of the teachers were of the opinion that the significance of the project was not well cut out and the other half viewed it otherwise. However, 61.2% of the teachers in Migori responded that the trainers had very poor skills pertaining to the project.

Figure 40: Significance of the child health project



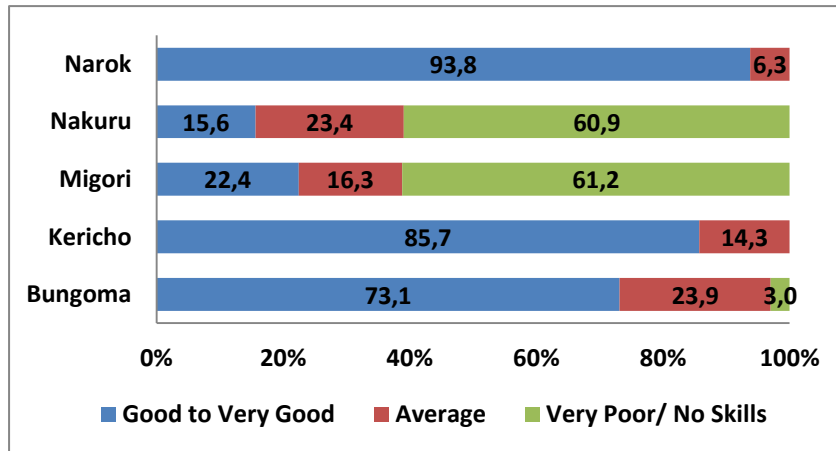
The trainers in Narok, Kericho and Bungoma counties successfully managed to convince the teachers in these regions of the need for good eye health in children. However 70.3% and 63.3% of the response from the teachers in Nakuru County and Migori County respectively, revealed that the facilitators were not adequately skilled to relay this section of the training.

Figure 41: Need for good child eye health



Very high percentages of teachers in Narok, Kericho and Bungoma counties vowed the trainers had very good knowledge about the anatomy of the eye. An overwhelming 78.6% of the responses in Kericho showed the highest satisfaction of the facilitators' expertise on the structure of the eye. In Nakuru and Migori, the trainers managed to convince only 50% of the population that they know the subject matter well.

Figure 42: Structure of the eye



The teachers who participated in this project also rated the trainers' knowledge on the signs and symptoms of an unhealthy eye. In Narok County, 93.8% of the participants were convinced that the trainers presented well on the signs of unhealthy eyes. This was the highest proportion of the teachers in all counties that rated the trainers to be good to very good. However, the participants in Nakuru and Migori counties revealed 60.9% and 61.25% level of dissatisfaction respectively, in the presenters' knowledge to diagnose impairments in eyesight.

Figure 43: Signs of unhealthy eye

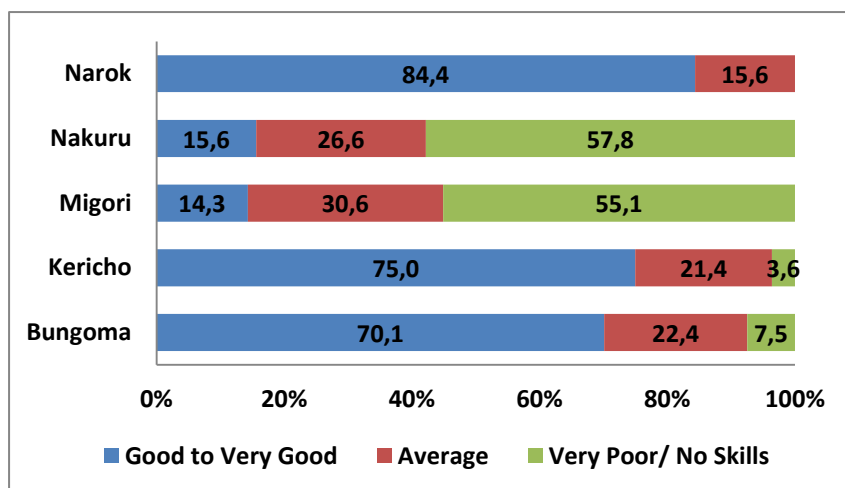
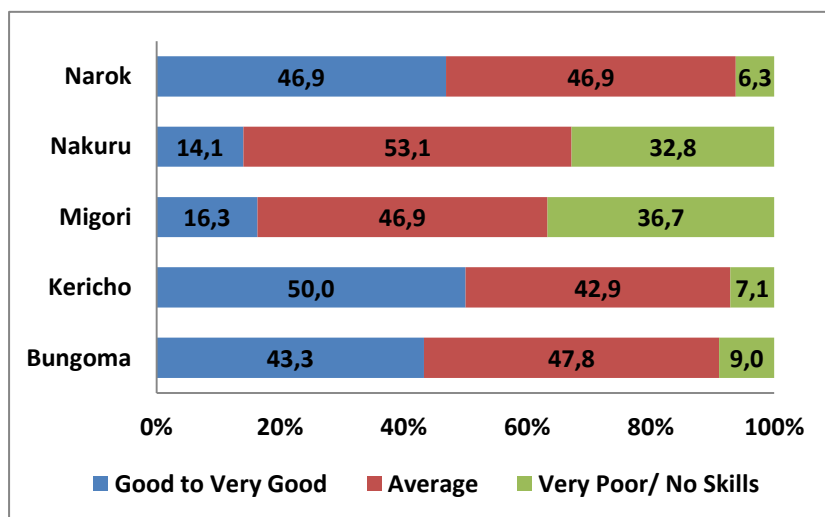


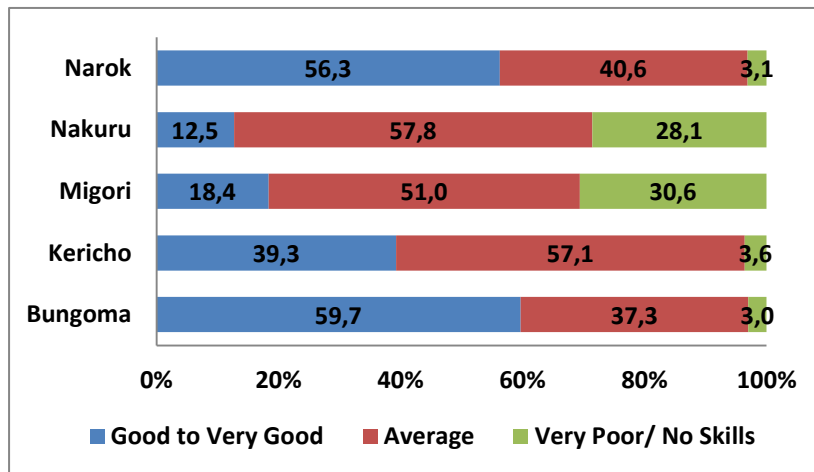
Figure44: Vision and health screening

The trainers received above 70% approval from the teachers in Narok, Kericho and Bungoma counties on their presentation on vision and health screening. 57.8% of the response from the Nakuru County teachers suggested that the facilitators had very poor skills on the subject.



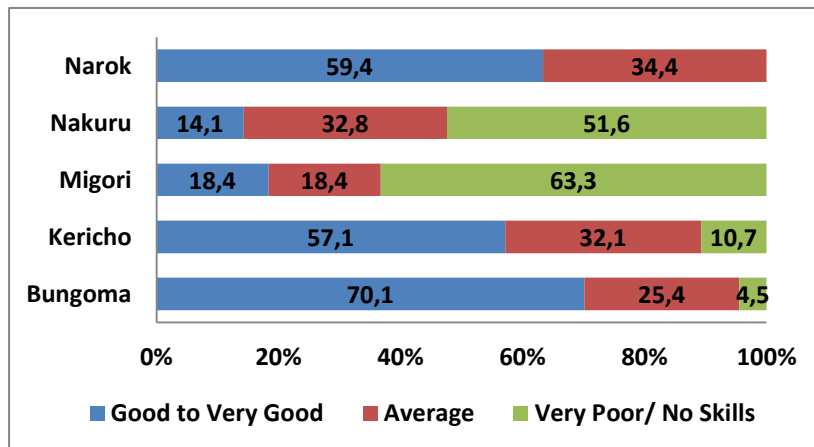
The modal dissatisfaction was expressed by the teachers in Migori County (36.7%) and the highest frequency for “good to very good” was in Kericho County (50%). Reported frequencies from all counties were mostly of the positive opinion of “average” to “good to very good”. Highest frequency of “average” was reported in Narok County (53.1%).

Figure 45: Referral pathways



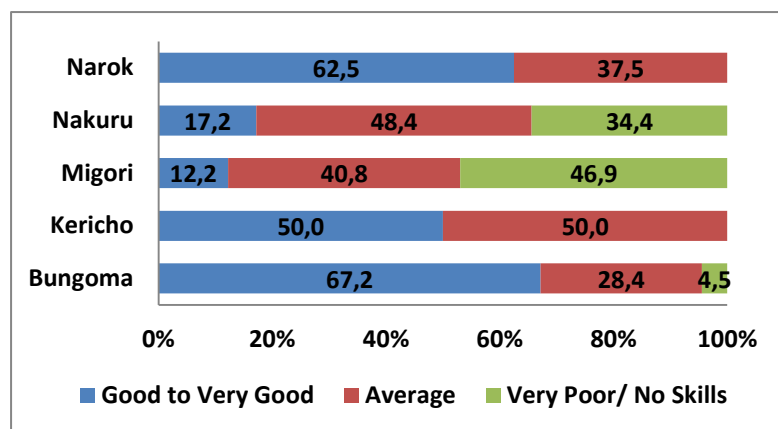
The modal frequency for the participants in Bungoma (59.7%) showed that majority of them were of the opinion that data reporting was properly done. A significant proportion was reported in Migori (30.6%) and Nakuru (28.1%). All the counties expressed positive opinions even though some of the participants were of different sentiments.

Figure 46: Data reporting



95.5% of the teachers in Bungoma agreed that the campaign to promote eye health was a success as opposed to 63.3% of the teachers in Migori who were of a different opinion, and also Nakuru (51.6%). All the participants in Narok expressed positive opinions about good eye health education and promotion.

Figure 47: Eye health education and promotion

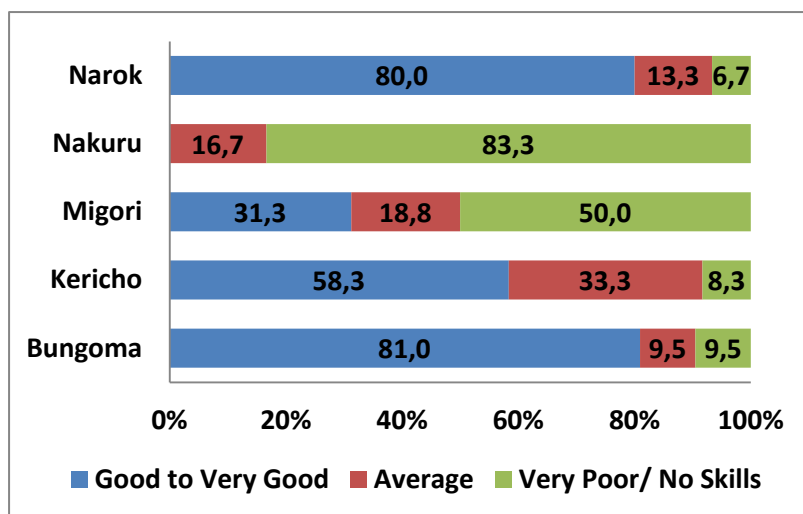


The practical sessions on screening showed that all of the counties were positively skewed with the modal frequency on good to very good being in Bungoma County (67.2%). Narok and Kericho counties showed ultimate positive opinions from all participants. Very poor or no skills had a modal frequency in Migori County (46.9%) with Nakuru County (34.4%) showing also a significant proportion. fig. 40 shows the distribution of the responses on practical sections on screening in a school.

Figure 48: Practical sections on screening in a school

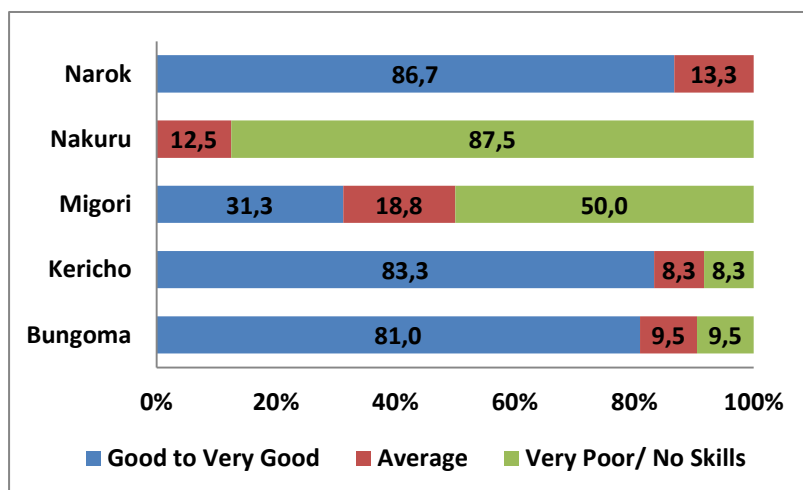
3.2.4.2 Skills for Nurses

All the teachers who participated in this exercise were afforded an opportunity to comment on the skills' and knowledge displayed by the facilitators of the program. Most of the responses were positively skewed although in Nakuru County, there were a significant proportion of participants who expressed negative opinions on most of the questions.



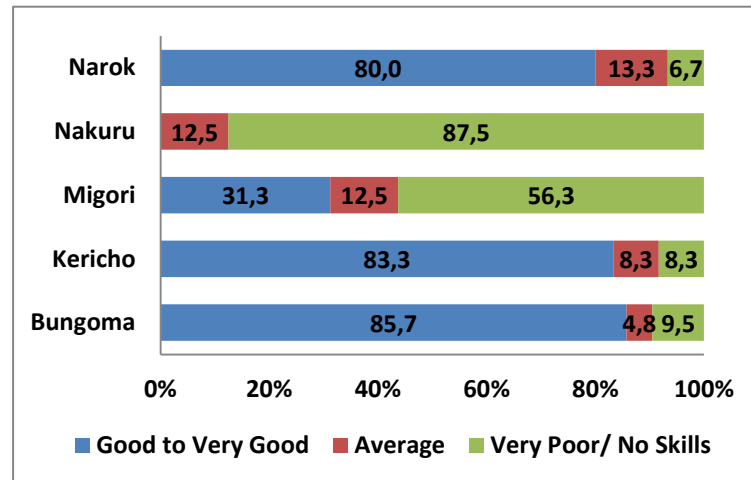
The question pertaining to the basic anatomy and physiology of the eye was asked focusing entirely on nurses. Most of the nurses expressed positive opinion with the modal frequency of good to very good being reported in Bungoma County (81%) and Narok County (80%). A greater percentage of participants who reported on very poor/no skills were seen in Nakuru County (83.3%).

Figure 49: Basic anatomy and physiology of the eye



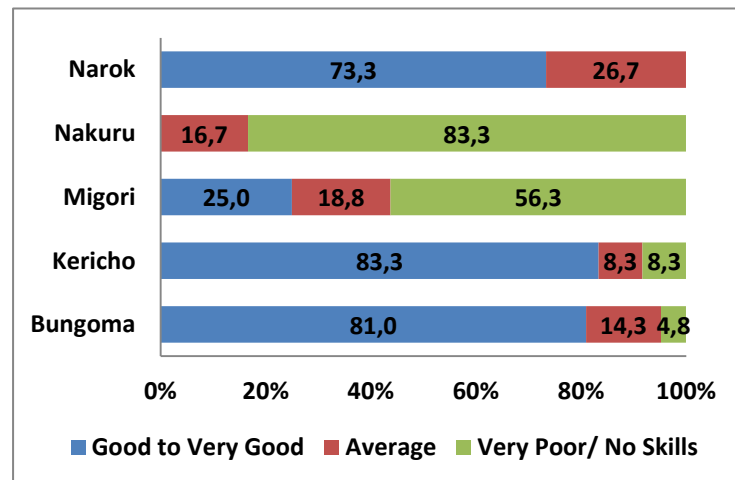
The nurses in the three counties, Narok County (86.7%), Kericho County (83.3%) and Bungoma County (81.0%) reported 'good' to 'very good' about the trainers being well-informed about the common eye conditions and diseases in children. These three groups of participants rated the trainers above the eightieth percentile competent level. Only the nursing participants who attended in Nakuru County (87.5%) expressed their negative feelings.

Figure 50: Common eye conditions and diseases in children



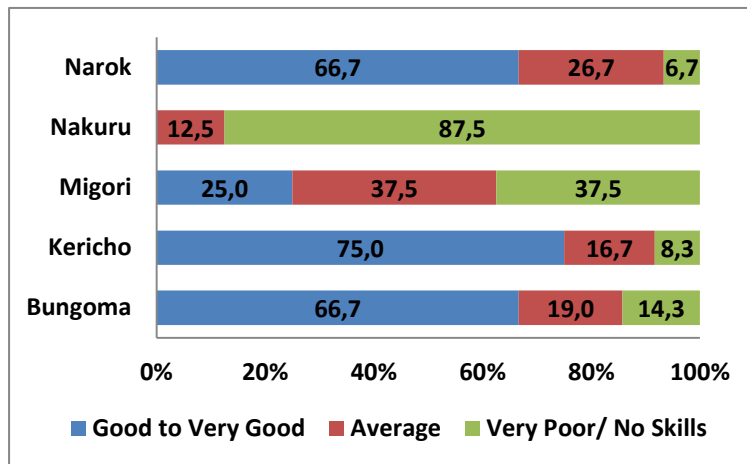
The training personnel had the very high scores on their presentation on the common causes of blindness in children. Their presentation were positively rated as follows; Narok County (80%), Kericho County (83.3%) and Bungoma County (85.7%). The participants in Nakuru County, however, found this part of the workshop less informative. Almost all the nurses in Nakuru County (87.5%) reported a negative opinion on the knowledge of common causes of VI and blindness in children.

Figure 51: Common cause of VI and blindness in children



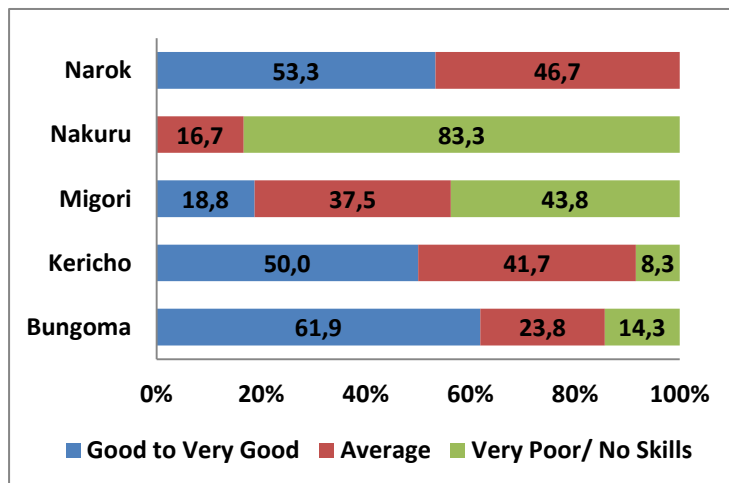
On the aspect of basic first aid, there was a positive skewness on all counties except Nakuru County (83.3%) of the participants reporting negative opinions. In Nakuru County, things were different; the nurses reported that the trainers did not give clarity in their presentations. Highest frequencies which were reported on “good to very good” was in Kericho County (83.3%).

Figure 52: Basic first aid



Among almost all counties, with exception of Nakuru County, the participants reported a positively skewed opinion regarding the promotion of good eye health. The combined scores of those who rated the trainers ‘average’ and ‘good’ to ‘very good’ were as follows: Narok County (93.4%), Migori County (62.5%), Kericho County (91.7%) and Bungoma County (85.7%).

Figure 53: Eye health promotion



The trainers’ presentation on planning for a screening was rated around 50% successful in all the counties. This is not a bad score nevertheless. Planning for screening was reported positively by most of the participants with the exception of Nakuru County (16.7%). Modal frequency was reported in Bungoma County (61.9%) as “good to very good”.

Figure 54: Planning for a screening

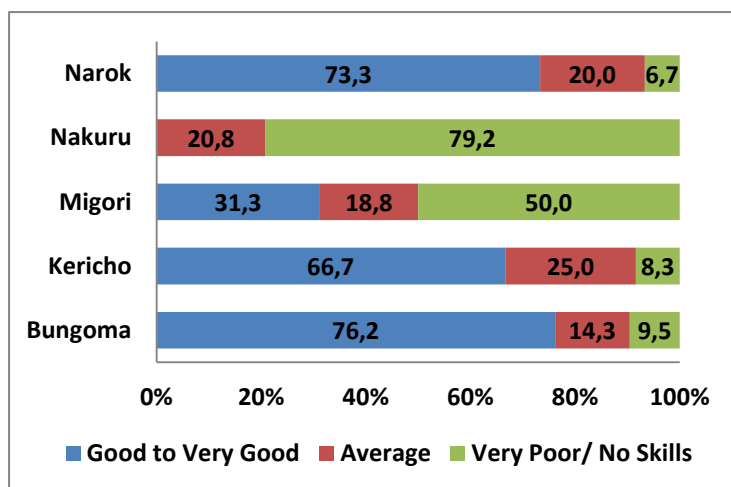


Figure 55: Visual acuity eye health

On the aspect of visual acuity and eye health, the nurses in Narok County (73.3%), Kericho County (66.7%) and Bungoma County (76.2%) reported as 'good' to 'very good', with Narok County only having positive on average (20.8%). Negative sentiments were reported in Nakuru (79.2%) and Migori (50%).

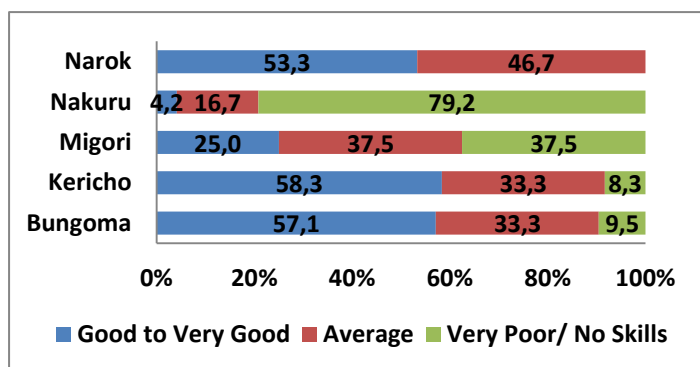
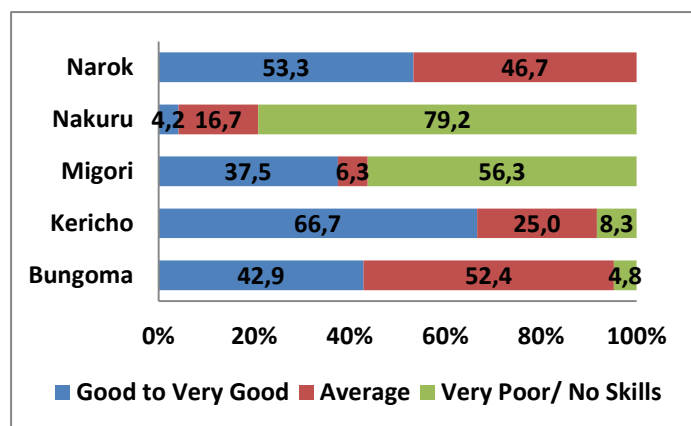


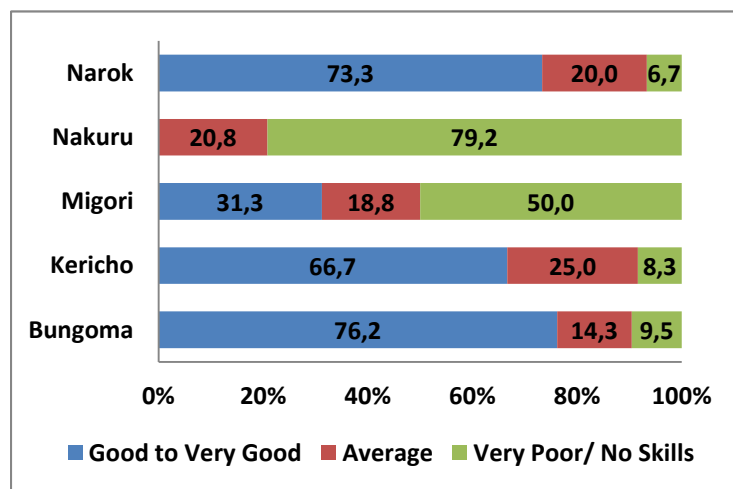
Figure 56: Referral systems

The referral systems were rated positively by majority of the participants from all counties except from Nakuru. Modal frequency for 'good' to 'very good' was reported in Kericho (58.3%), whilst the modal for "very poor/ No skills" was Reported in Nakuru County (79.2%) with the least reported in Bungoma County (9.5%).



Except in Nakuru County, the statistics from the other four counties revealed that the facilitator were well skilled and critical on their presentation of data reporting. The aspect of data reporting has an impact on the functionality of any institution and its planning into the future. The trainers received the lowest scores on this part of their presentation in Nakuru County (20.9%) and Migori County (43.8%). The nurses in these two districts rated the facilitators to be having poor skills on data reporting. See figure 57 below.

Figure 57: Data reporting



On the aspect of having practical sessions in a health facility, the nurses in Narok County (93.3%), Kericho County (91.7%) and Bungoma County (90.5%) reported 'good' to 'very good'. Nakuru County (79.2%) reported negative opinions on "very poor/no skills" and the least for this particular section was reported in Narok County (6.7%).

Figure 58: Practical sessions on screening in a health facility

3.3 Training Practicality, Usefulness and Applicability

In all the five counties, and across the teaching and nursing staff, there was strong confirmation that the training practical, useful to the community and that what they learnt can be applied in daily living to help the children and minimise risks of sight loss. All the teachers in Narok unanimously agreed about the positive impact of the training. Of note is the fact that there was very little to no opposition that the training was useful. This is a true revelation that the topics covered in the course were all empowering.

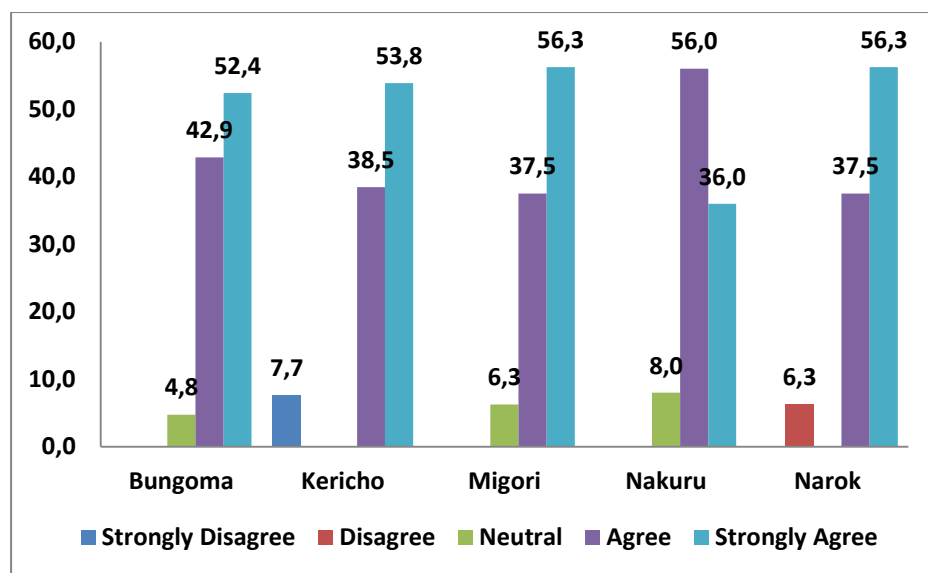


Figure 59.1: Training covered relevant topics (Nurses)

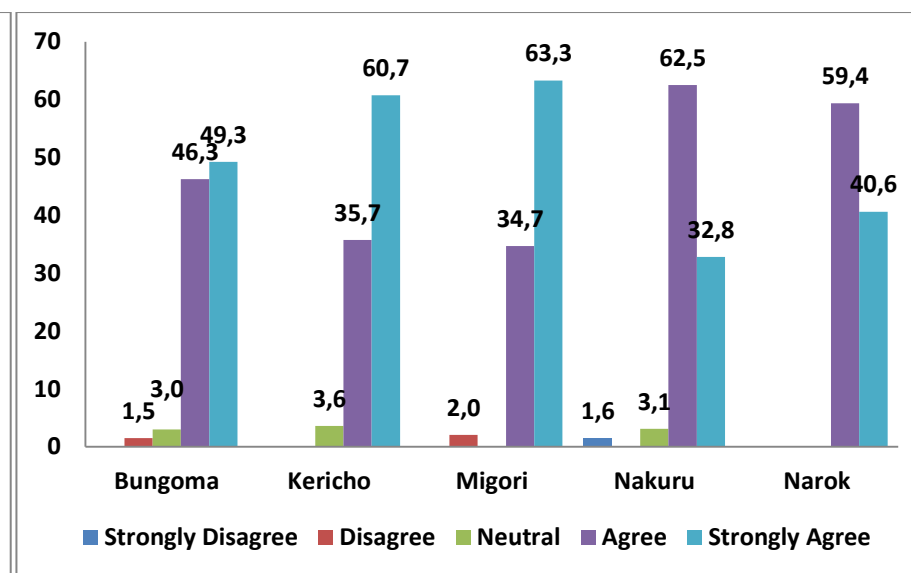


Figure 59.2: Training covered relevant topics (Teachers)

80% of the nursing staff in Migori County attested to the fact that the training was interesting and challenging. In these centres, except at Narok County, where 12.6% on the nursing staff disagreed and strongly disagreed to this question in the questionnaire, there was generally overwhelming concurrence. The teachers in the entire counties shared the same sentiments with their nursing counterparts. The graph below shows that more than 95% of the participating teachers in total across all countries agreed that the workshop was stimulating and challenging.

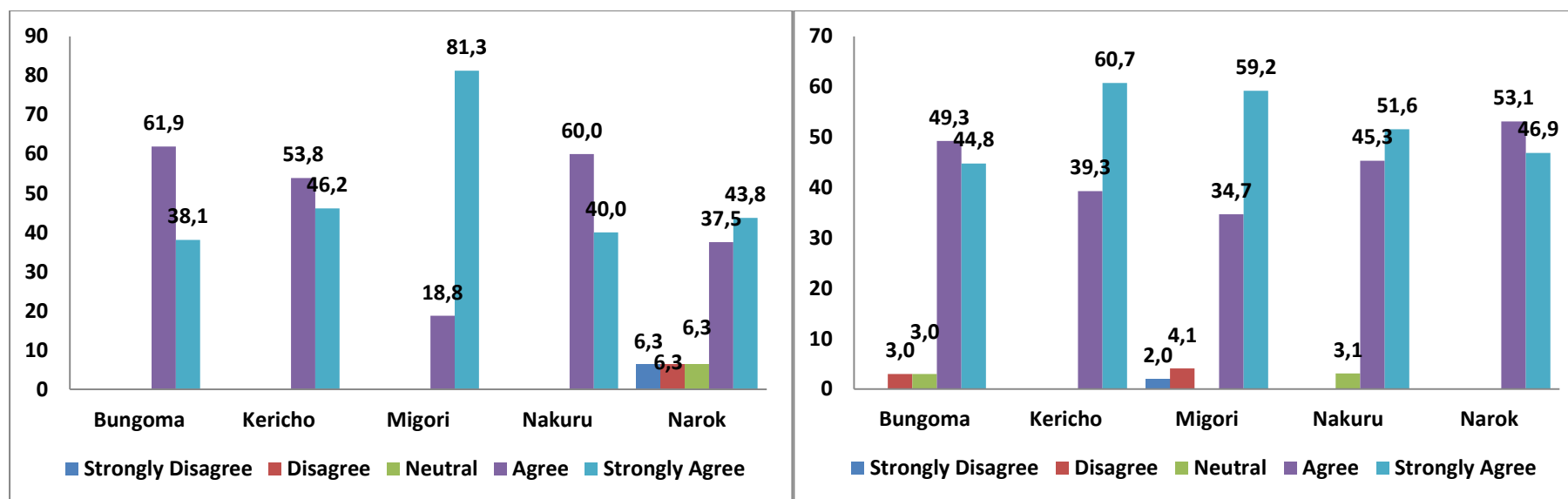


Figure 60.1: Training was interesting, challenging (Nurses) Figure 60.2: Training was interesting, challenging (Teachers)

In Bungoma County, all the nurses either agreed or strongly agreed that the training was useful to eye health screening. Bungoma County nurses also outshined all the districts with a 71.4% of those who strongly agreed. There was only a total of less than 16.5% who disagreed amongst the nurses in all the counties. The highest contradiction was recorded in Narok County who registered 12.5% disapproval of the training exercise.

The teachers on the other hand had a modal response 'Agree' in all the districts, with Bungoma County giving the highest proportion (79.1%) of those who gave the training thumbs up.

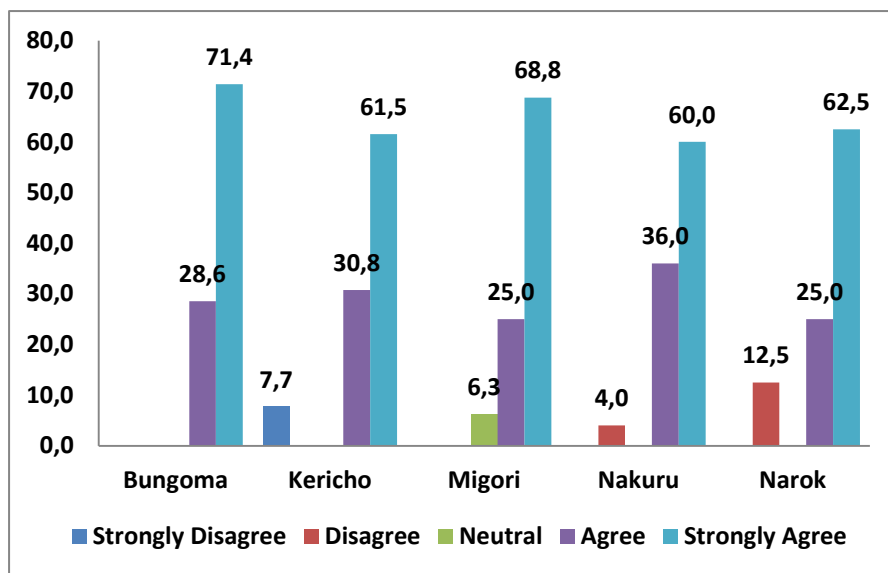


Figure 61.1: Training was useful to eye health screening (Nurses)

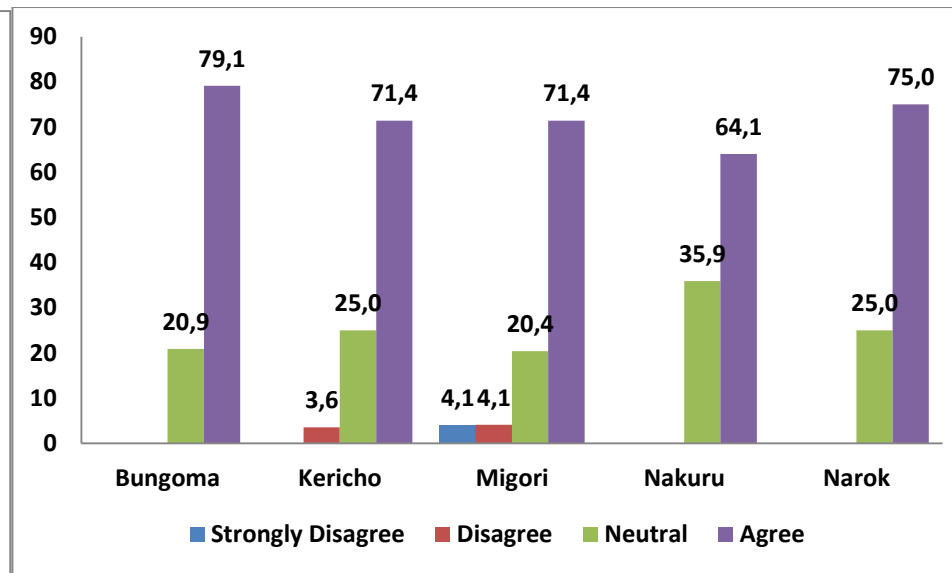


Figure 61.2: Training was useful to eye health screening (Teachers)

The opinion on the survey was received with mixed feelings from the participants with regards to problem detection. The response can expose one's level of competence especially the nursing staff. Taking the response 'Agree' would mean the person was failing to give correct diagnosis. In my own view, this question was found to be difficult to answer truthfully by some of the participants.

However, results from the post workshop survey revealed that an average of 50% of the nurses agreed that the workshop equipped them with necessary skills to be able to detect eye problems in children. The other half disagreed.

On the other hand, teachers in Kericho County and Narok County attested to the fact that the workshop equipped them with new knowledge to enable them to detect eye problems. In summary the stats revealed that most teachers in all the countries did not know how to detect eye problems prior to the training session.

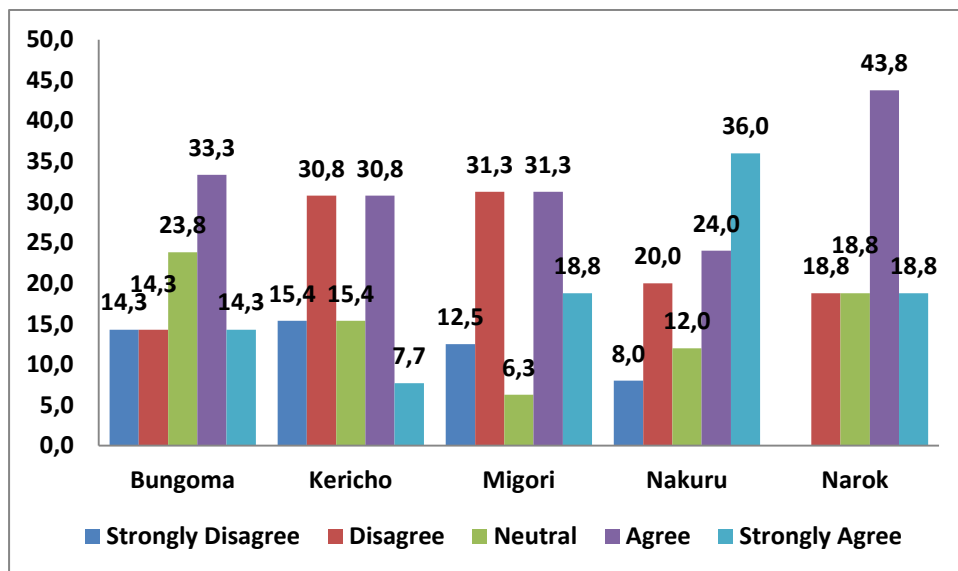


Figure 62.1: Problem detection (Nurses)

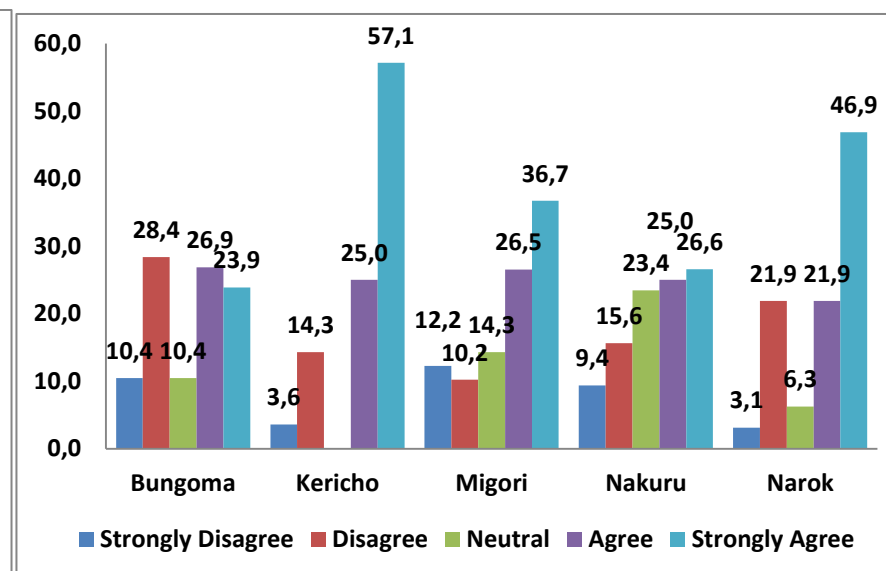


Figure 62.2: Problem detection (Teachers)

In all the five counties, more than 80% of the nurses' responses confirmed that they were able to apply vision screening methods and devices. Bungoma County (95.3%), Kericho County (84.6%), Migori County (100%) and Nakuru County (84%) levels of competence to

use screening equipment. Of those who reported on screening equipment, 6.3% responses at Narok County and 4% at Nakuru County reported that these nursing professionals could not use the screening equipment.

In all the counties, there was a resounding response from the teachers regarding the success use of the appropriate equipment to perform eye screening tests with Narok County (99.9%) had teachers with either “agreeing” or “strongly agreeing”.

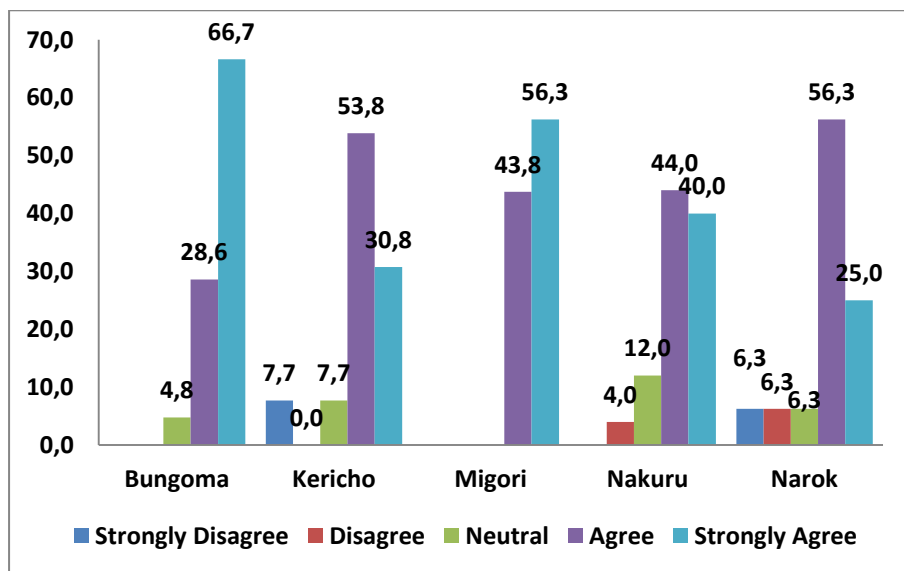


Figure 63.1: Application to equipment (Nurses)

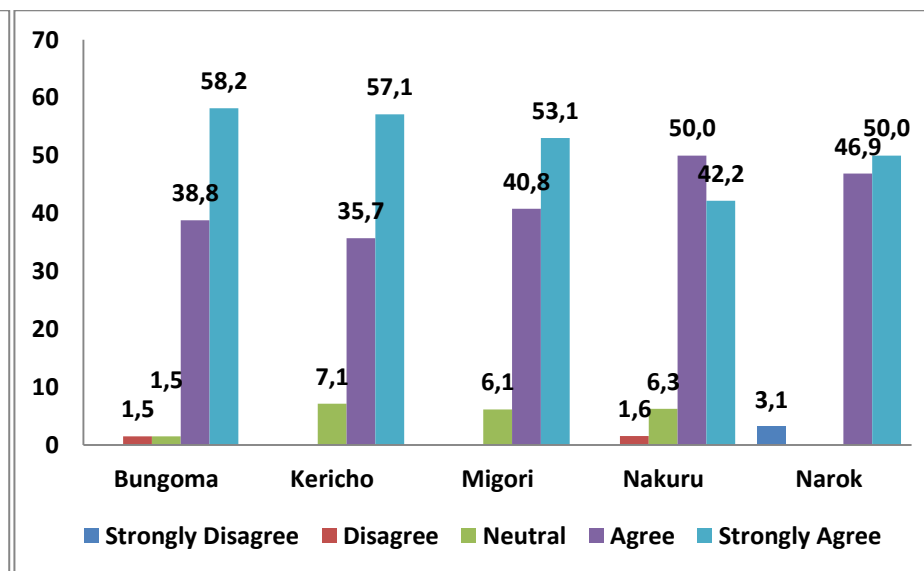


Figure 63.2: Application to equipment (Teachers)

Most nurses in all the districts were confident that they could successfully detect eye problems in the school children upon screening. 4.8% of Bungoma County for nurses and 12.6% in Narok County were realistic and confirmed that not all cases were easy to detect.

The statistics from teachers, on the other hand, showed that most of them would be able to successfully detect eye problems in the children in their schools with confidence.

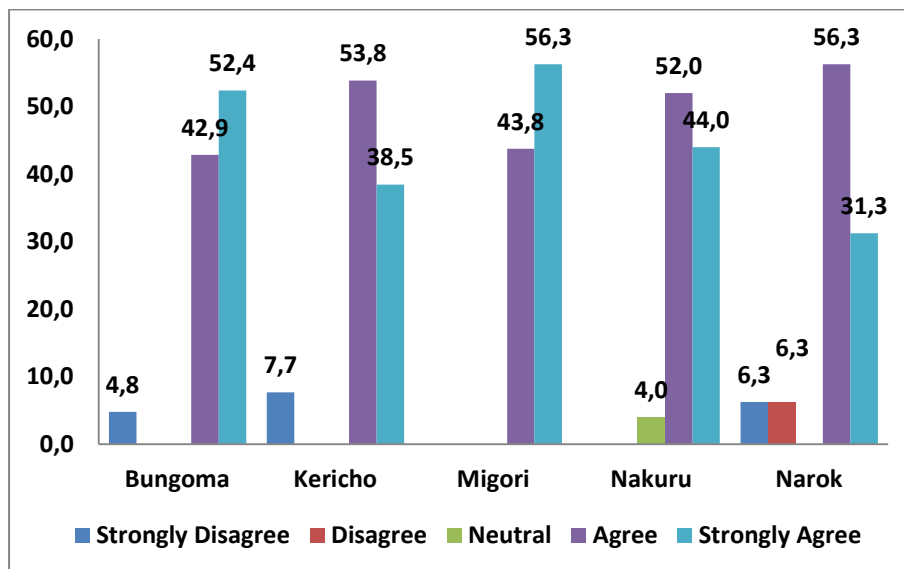


Figure 64.1: Problem detection of eye health (Nurses)

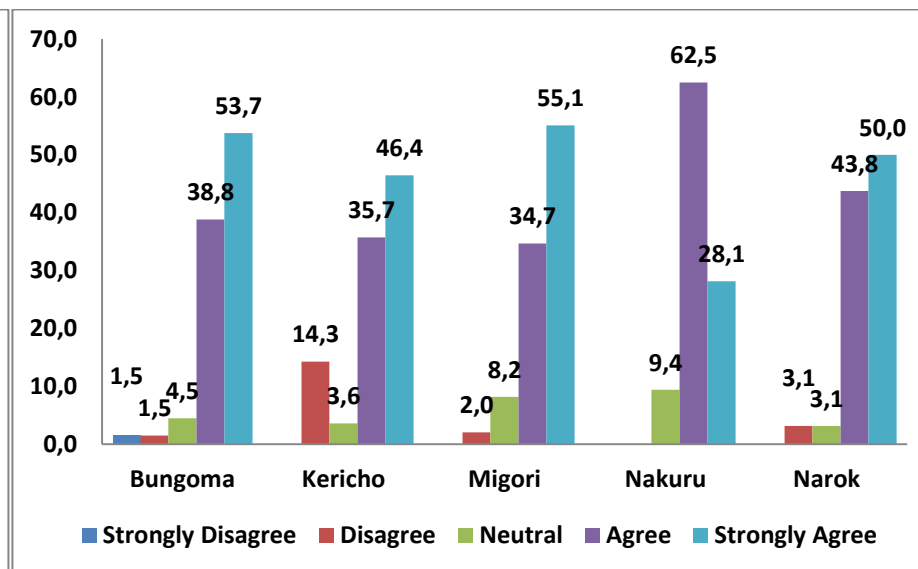


Figure 64.2: Problem detection of eye health (Teachers)

The process of eye screening is not very complex but we cannot deny the fact that the people who are responsible for this exercise ought to take some training for competence. The evidence obtained from the questionnaire revealed that the vast majority of both teachers and nurses disagreed with the statement that screening is easy and does not need training. As the old saying goes ‘common sense is not common’, we will not take it for granted that anyone can be able to perform eye screening without having obtained some training.

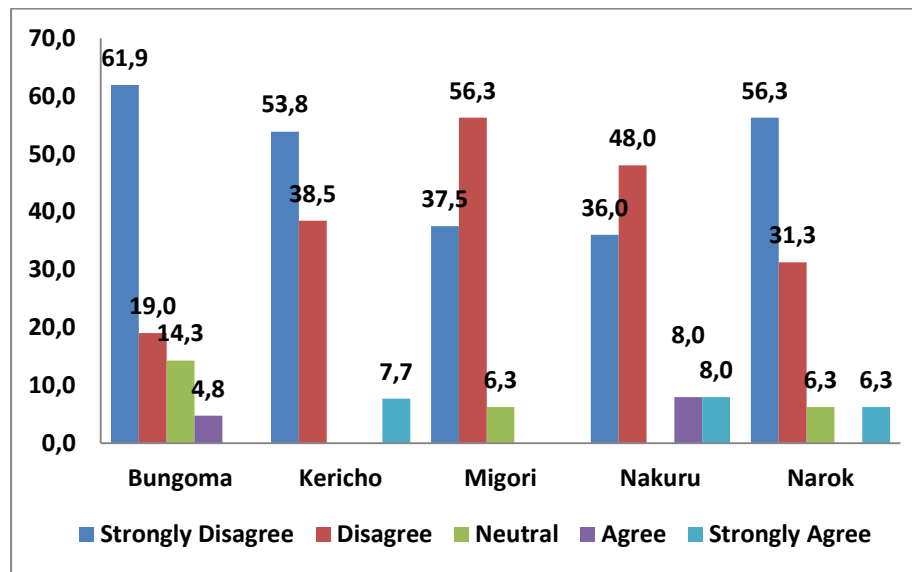


Figure 65.1: No training needed (Nurses)

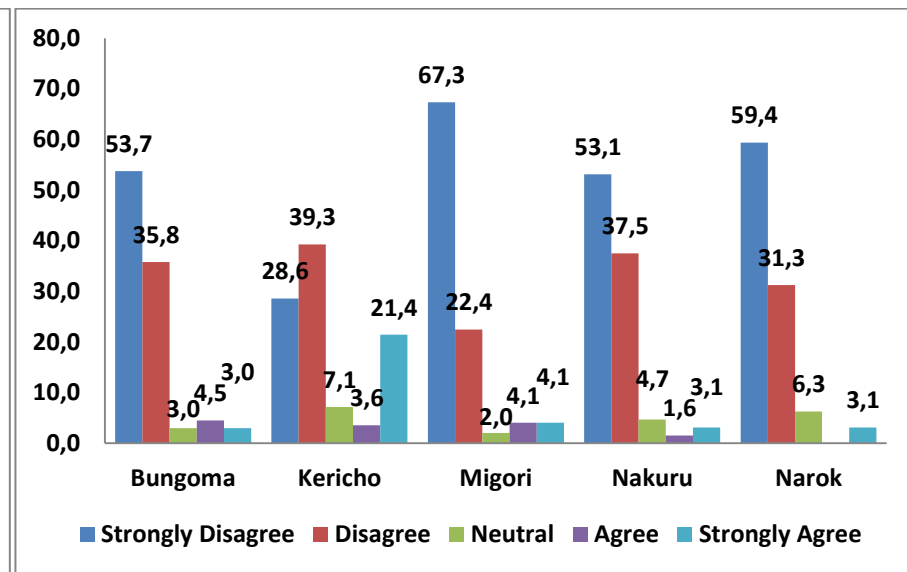


Figure 65.2: No training needed (Teachers)

The nurses and teachers in all the five countries confirmed that the training was very useful and relevant in detecting vision problems in school children. However, there were few scattered areas where small proportions of the participants did not see the relevance of the training. Opposition was recorded in Bungoma County (14.3%), Kericho County (15.4%) and Nakuru County (16%) from the nurses. The modal opposition was however from the 17.2% of the teachers at Nakuru County.

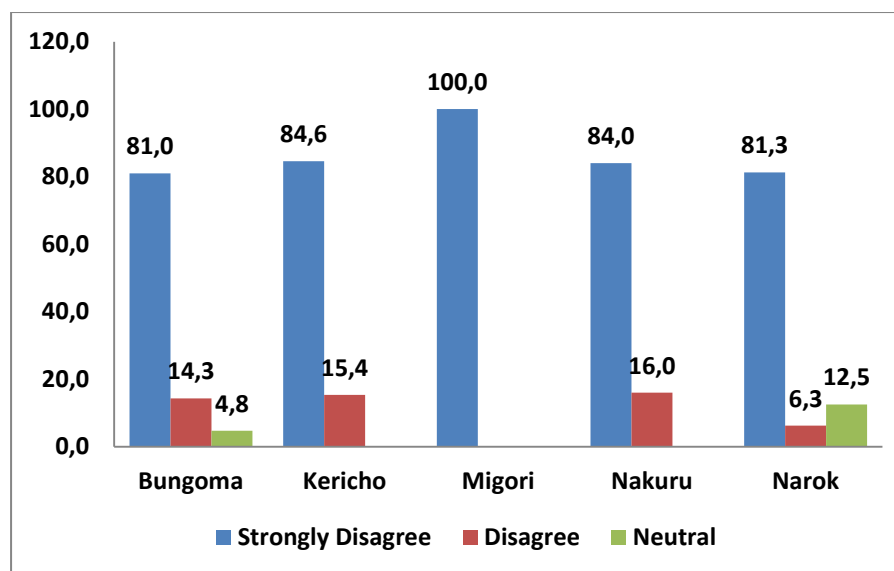


Figure 66.1: Training not useful (Nurses)

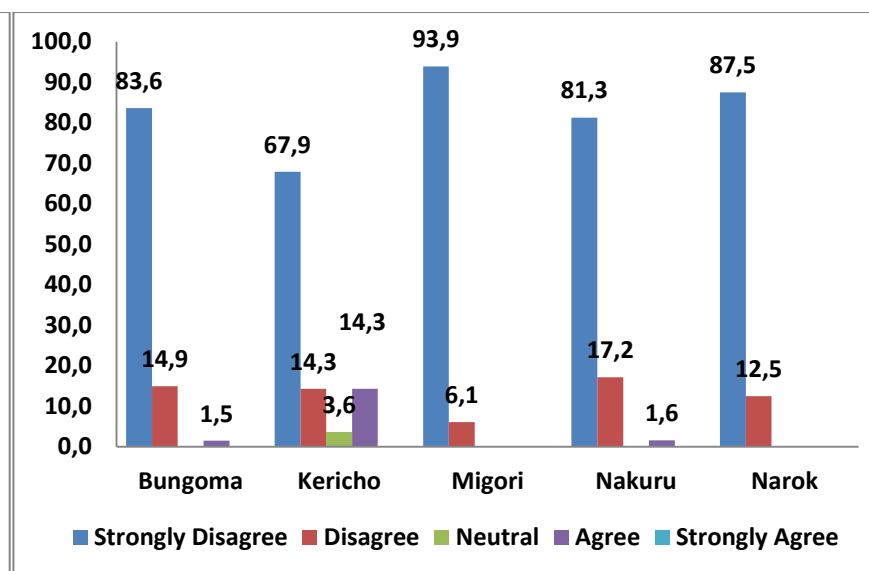


Figure 66.2: Training not useful (Teachers)

The nursing professionals believed that the skills gained in the training workshop were handy in detecting eye problems in children. Teachers in all districts shared the same sentiments. Responses from nurses were mostly on “Neutral” to “Agree” with highest frequency reported in Nakuru County (76%) and for “neutral” reported highest in Migori County (31.3%). The highest proportion of those who agreed and strongly agreed to the notion that skills gained were useful was realised in Narok County (96.9%) in the teachers’ category. Sample for teachers had highest frequency reported in Narok County (78.1%) and the least frequency reported in Nakuru County (1.6%) on “Disagree”.

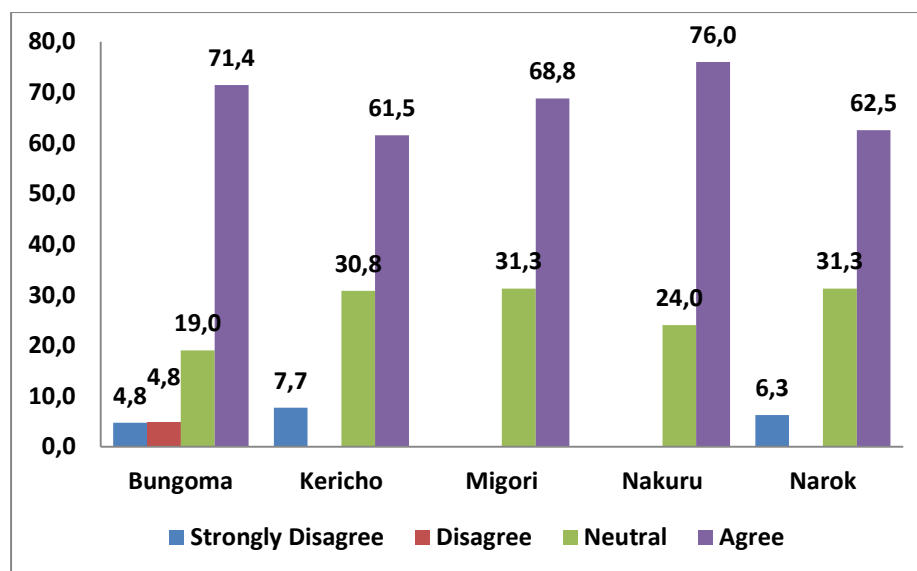


Figure 67.1: Skills gain were useful (Nurses)

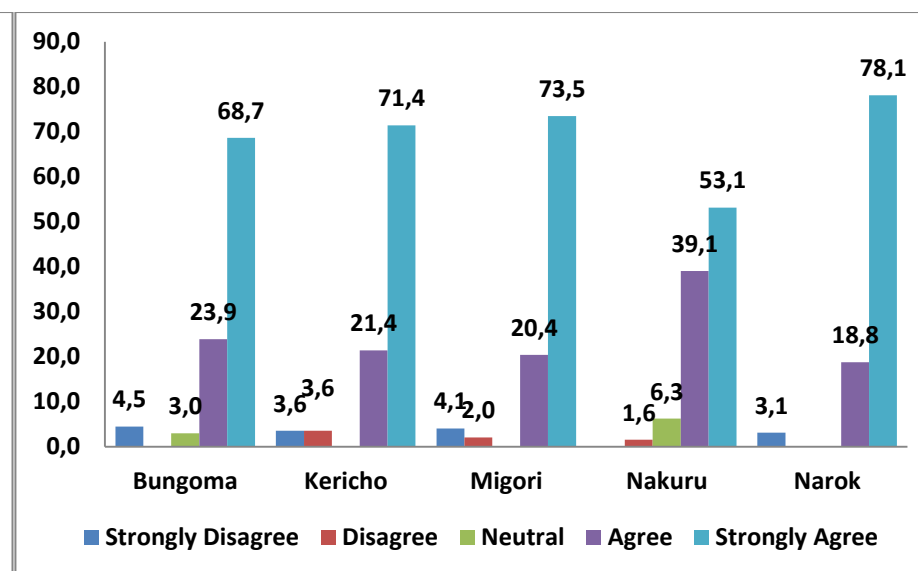


Figure 67.2: Skills gain were useful (Teachers)

Both the nurses and the teachers gave overwhelming responses that the training has room to grow in the quality of skills to be shared amongst participants. The figure 60.1 below shows how the participants responded. The nurses' category in Nakuru had a 100% nod that training can be improved.

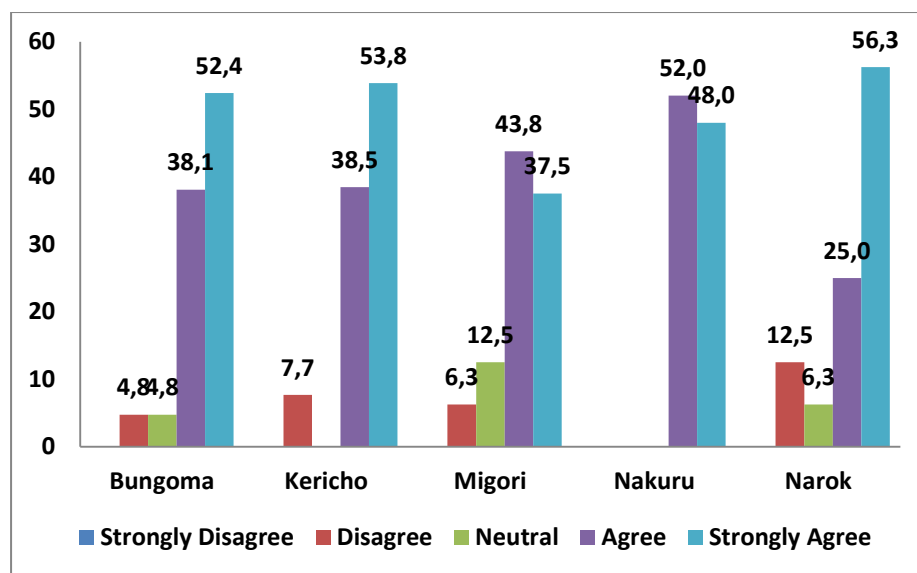


Figure 68.1: Believe training can be improved (Nurses)

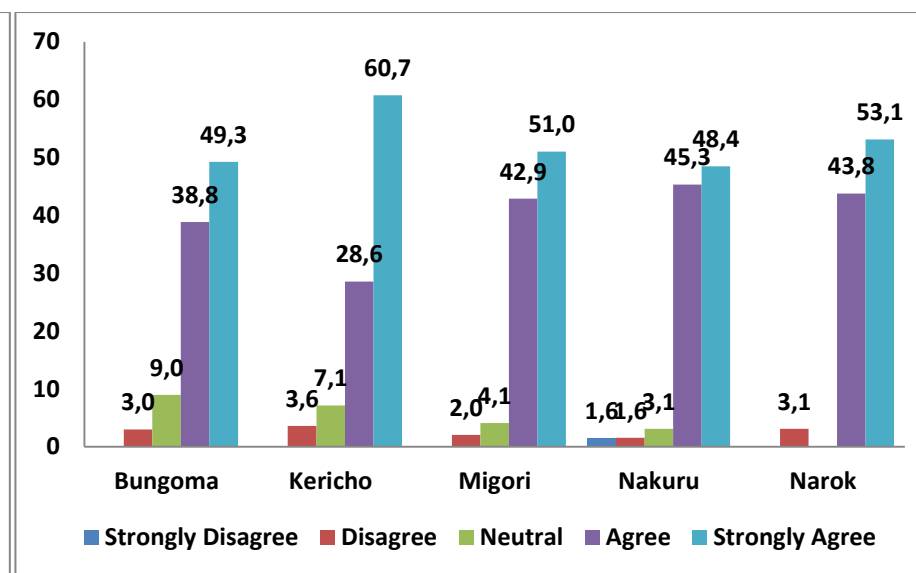


Figure 68.2: Believe training can be improved (Teachers)

The evidence obtained from this survey and tabulated below is a clear testimony that almost all the nurses in all the countries can now confidently refer the school children for further testing and screening. However, amongst the teacher populace, significant proportions were not certain whether they could appropriately be able to refer their school children for further testing and treatment. Nakuru (48.4%) had the highest number of uncertainty.

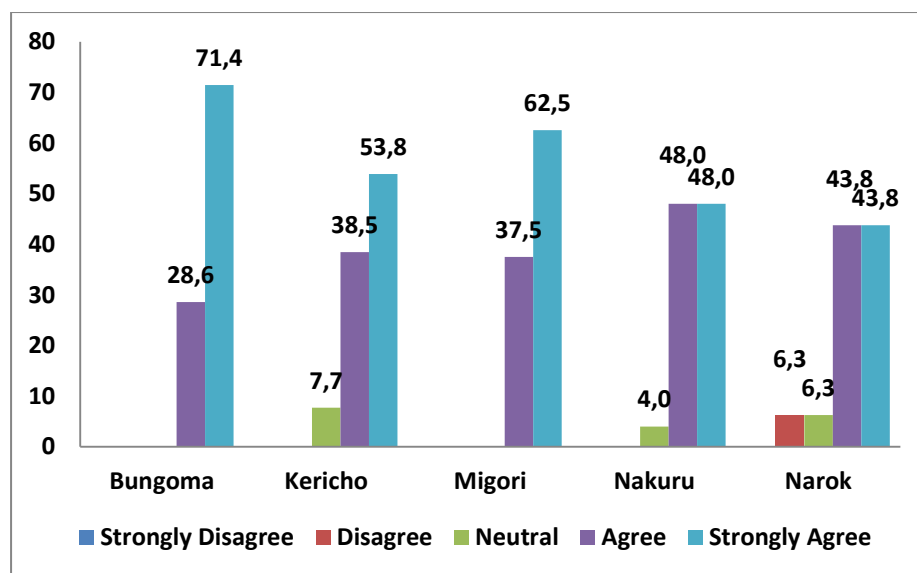


Figure 69.1: Ability to refer (Nurses)

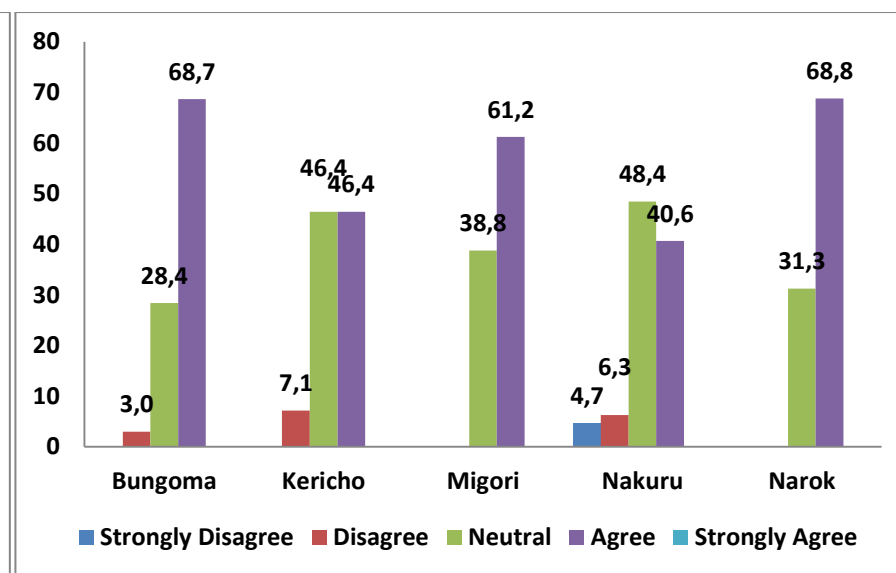


Figure 69.2: Ability to refer (Teachers)

All the counties waived the notion to visual awareness. Disagreements to the notion were most reported in Migori (6.3%) in the nurses' category and Kericho (7.1%) in the teachers' category, but, generally all the counties in both categories supported awareness to visual function. Highest frequency was reported in Kericho County (69.2%) for nurses on "Agree" and Narok County (62.5%) on "Strongly Agree".

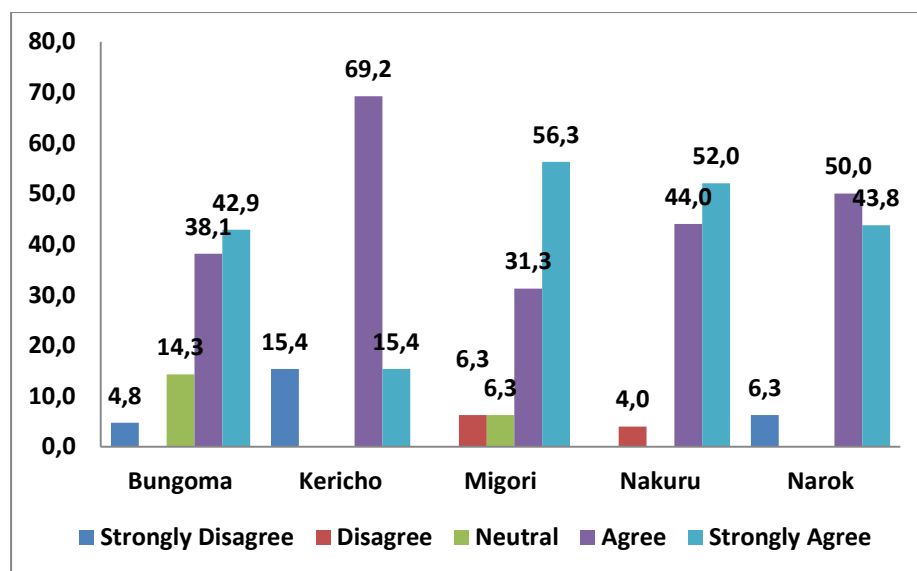


Figure 70.1: Awareness to visual function (Nurses)

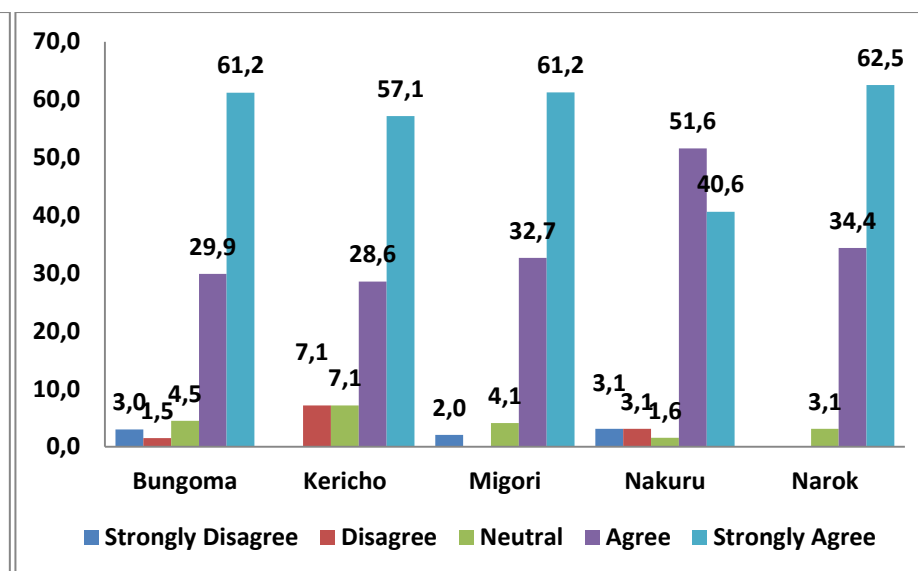


Figure 70.2: Awareness to visual function (Teachers)

Additional comments about training

When asked to comment on what they would like to share about the training, most teachers from all counties reported that they would like other stakeholder to know the significance of the training they received through this SIB programme on eye health. In this regard, most teachers reported that they would like to encourage fellow teachers, parents and other professionals to participate in the program. Although the majority of teachers were happy with the skills and knowledge they gained through the training, they however, recommended that it should be conducted more often and its period be increased. Some teachers indicated that there is still a room for improvement in this training, suggesting the need to increase resources and facilitators.

Nurses on the other hand recognised that the training significantly contributes to eye health promotion in a form of skills development and education for eye health. However, they pointed the areas that need improvement. In their comments, they mostly indicated that the capacity of the programme should be expanded to train more people beyond teachers and nurses. Like teachers, nurses also noted that the period for training was too limited and suggested that the period should be increased. Additionally, nurses recommended refresher courses to those who received training in order to maintain their knowledge and skills. Very significantly, nurses also recommended the establishment of community based eye health training and centres in order to ensure that eye care services are also accessible at a local level.

Other areas to be included in the eye health screening trainings in future

When asked as to what they think should be included in the eye health screening trainings in the future, the majority of teachers indicated that the education curricula in primary schools should be developed to incorporate courses addressing issues of children with special needs. In addition, some teachers suggested proper arrangements with hospitals to admit children referred for free service. A relatively few teachers indicated issues around nutrition and HIV/AIDS should also be incorporated in the programme. They also added that parents and other relevant stakeholders such as community health workers should be included in the training. Most significantly, resources and training personnel were reported to be limited with most teachers recommending that these aspects require improvement in the future.

On other areas that should be included in the eye health screening trainings in the future, most nurses reported that more practicals are necessary. In addition, they also highlighted home treatment remedies for acute ophthalmic conditions before visiting a health facility should be an integral component for the training. As part of advancing the programme in the future, nurses also recommended that there is need to sensitize mothers, parents, guardians on simple eye screening of their children and referral systems so that eye problems can be identified early enough at household level. Nurses also believed that the SIB programme should also incorporate advocacy initiatives, eye

health education to the public, and community mobilisation to increase uptake of eye services.

3.4 Post Training Challenges

Most teachers across counties reported common post-training challenges. The difficulty to convince parents to allow their children to participate in the screening programme was the most common challenge for teachers. In this regard, teachers discovered that most parents considered eye screening invaluable and unnecessary. However, it was also discovered that some children were afraid and uncomfortable to have their eyes examined. A substantial number of teachers reported that most parents lack capacity to finance their children eye health services. It was reported severally across all counties that most children referred were unable to go for further eye examination or treatment due to lack of financial support from their parents. Limited time for children examination was also commonly cited as a major barrier for teachers to conduct complete children eye screening. In this instance, eye screening exercise was considered by teachers as interfering with learning activities. In addition, teachers described lack of transport as a major barrier to visit many schools with children in need for eye examination. A relatively few participants stated that they had difficulties in conducting screening among children with hearing impairment, indicating lack of relevant communication skills such as the use of sign language. Less than 5% of the participants reported being unable to perform some aspects of the eye screening due to the lack of knowledge and expertise.

On the other hand, nurses from all counties mostly cited lack of eye screening tools and equipment as a constraining factor. Most nurses also raised concerns about the unavailability of intervention measures or vision correction devices such spectacles and contact lenses. Nurses across counties also reported lack of transport, funding and limited health facilities as major barriers for adequate eye screening amongst children. Cultural barriers were reported in 2 counties (Bungoma and Migori). In this regard, nurses indicated that parents refused to take their children to health facilities and referral centres because they believed that their children eye problems were associated with culture and traditions. Similar to the teachers' report, nurses also described lack of

cooperation from parents as an obstacle for referrals, further examination and treatment. In addition, some nurses reported that lack of knowledge, advanced skills and experience in eye health limiting their eye screening practices suggesting that training was not adequate. Only 3 nurses reported increased workload due to screening. Only few nurses stated that children refused screening because of trust suggesting the need to build rapport before examination.

3.5 Changes in Visual Function Post Training and Screening (Teachers)

The training and the screening process brought a huge change in the visual function of many school children. The participants of training began to be aware of the importance of taking care of one's own eyes, and screening in advance.

The objectives of the training were realised, and the impact of the exercise was positive to the participants and their communities at large.

In response to the question of whether the children's visual function had changed after the training and screening, all the teachers in Bungoma and Narok agreed. Significant change was realised. Many (98.4%) respondents from Nakuru and 93.6% in Migori also confirmed that the training and screening programme brought positive change to the children's eye sight performance and care.

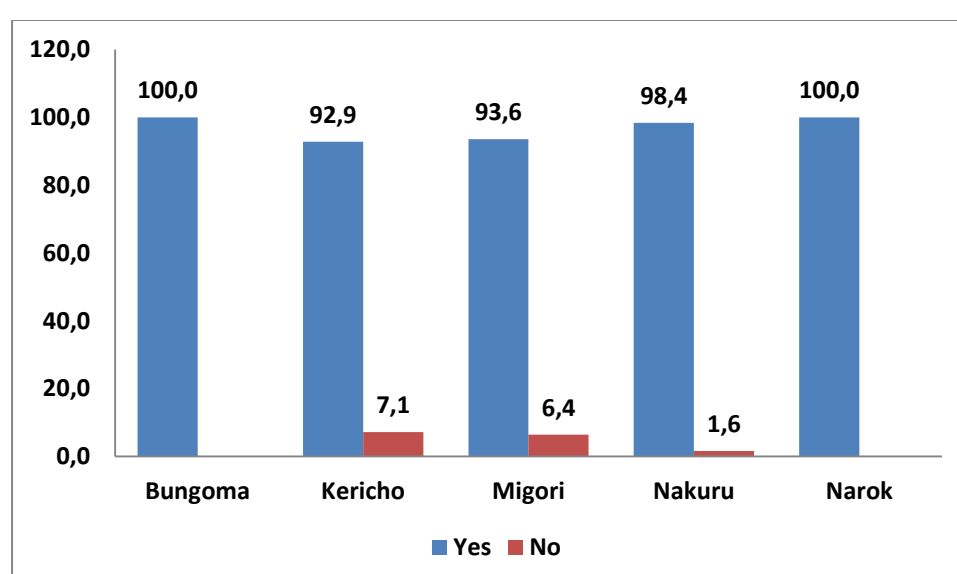


Figure 71: Observed changes in screening and treatment

Most teachers across clusters reported positive changes among children following the screening and treatment. Most teachers indicated that children's behaviour towards eye care changed significantly such that they clean their eyes regularly. Some teachers have observed that children report any eye related problems they experience early suggesting increased level of awareness about the importance of eye health. Teachers also observed the changes in seating positions of the visually impaired children meant to facilitate their learning. In addition, teachers noted that children diagnosed and treated with eye problems also improved their reading and writing skills, thus their academic performance and participation in learning activities. Some teachers reported that their learners used to miss lessons due to eye problems before the programme implementation, however, teachers have observed that the number of learners missing lessons has dropped significantly following the screening and treatment. More teachers are also able to identify children with eye problems and make necessary interventions.

3.6 General Comments

How can the eye health screening training be improved?

Participants were also asked how the eye health screening can be improved. Most teachers from five counties suggested that the duration of training should be increased and the programme should be continuous. A substantial number of teachers felt that the resources, equipment and tools for training were inadequate, hence recommended that these should also be increased. Some teachers recommended that the programme should be capacitated to train more teachers in order to meet the demands for eye health care in schools. In addition, teachers also suggested refresher courses, seminars and workshops for teachers involved in the school eye health programmes. However, only few teachers proposed the improved training content aimed at providing advanced skills in eye screening and referral pathways. On the other hand, few nurses believed that integrating parents into the eye screening programme is necessary to prevent avoidable blindness among their children. Partnership development between

government, hospitals, clinics, community organisation was also reported as significant factors to strengthen eye care within the five counties

While most teachers emphasised the need to increase the duration of the training, most nurses emphasised that involving different stakeholders in eye health initiatives was most significant. In their responses, nurses indicated that these stakeholders include but are not limited to teachers, health professionals, provincial administrators, health officials (chiefs), parents and CAV's. Nurses also reported that training more eye care service providers is important to increase beneficiaries of eye care. Few nurses considered advocacy, community outreach and eye health awareness programmes as highly significant in fighting eye problems in all counties in Kenya. Incorporating eye health training skills and manuals into education curriculum was also reported by few nurses. Like teachers, nurses from five counties also suggested that the duration for training should be increased and the programme should be continuous.

What would you like to tell others about the SIB program?

The majority of teachers from all counties responded positively on what they would like to share about the SIB programme, mostly emphasised the importance of the programme in eye health. Most teachers reported that they would like to encourage fellow teachers, parents and other professionals to participate in the program. Some teachers stated that they would convey to others that SIB programme should be integrated into the school programme to ensure early detection and treatment of eye problems among school children. A relatively few teachers reported that they would like to emphasize to others that the programme is useful to teachers, it potentially contributes to desired academic outcomes. More than half of the teachers reported that they would like to inform others that the SIB programme is significant in eliminating avoidable blindness among school children.

When asked what they would like to tell others about the SIB programme, the majority of nurses had common responses across counties. Most nurses indicated that they would like others to know that SIB programme is very important because it contributes to eye health promotion in a form of skills development and education for eye health. More than 70% of nurses reported that they would like to share that SIB programme

play a significant role in preventing and overcoming eye problems among school children. Some teachers indicated that they would like to encourage other people from various fields to participate in and support the programme in order to make meaningful impact in children eye health. Moreover, few nurses reported that they would like others to recognise that the SIB programme can equip them with necessary expertise to empower them in order contribute to the prevention of avoidable blindness and the attainment of vision 2020.

What did you take away from your experience in this program?

When asked what they gained from the SIB programme, most teachers responded positively indicating that they gained critical skills, knowledge and expertise in eye health. Most participants reported that after training they were able to independently conduct eye screening, prescribe appropriate vision correction methods and make appropriate referrals where necessary. Some teachers reported that the knowledge and skills gained will be useful for them to identify children with eye problems in their respective schools. Additionally, a number of teachers reported that the skills and knowledge gained through SIB programme enable them to determine if poor academic outcomes amongst their learners was associated with eye problems. A handful of teachers reported that the skills and knowledge gained were useful for their eye health and for those of their family members. However, few teachers indicated that the programme changed their perceptions and attitude towards eye problems, with most realising that eye problems are not associated with witchcraft.

Similar to teachers, most nurses from all counties had commonly reflected on SIB programme considering what they learned. When asked as to what they took away from the programme, most nurses reported that they gained adequate knowledge and skills to identify and address eye problems. They further stated that through SIB programme, their awareness of the significance of eye health has been improved significantly. A relatively few nurses asserted that they acquired new expertise that complements health practice, which includes increased ability to deliver eye health services. Nevertheless, only one nurse from all counties has reported the significant of skills and knowledge gained in improving their children's eye health and thereby

academic outcomes. Overall, most nurses reported significant benefits acquired from SIB programme considering the expertise they possess following their participation in the programme.

How did this program change you?

When asked as to how the SIB programme changed them, most teachers across counties responded that the programme has changed them positively. In their responses, they commonly indicated that before the programme they often considered children with eye problems abnormal. Most teachers reported that they changed their attitude towards people with visual problems, and recognized that visually impaired are normal human beings. In addition, teachers reported that this has encouraged them to provide support to people with eye problems. Moreover, teachers indicated that the programme was significant for them to realize that eye health is not merely the responsibility of health practitioners but it is a responsibility for everyone including themselves and parents. Some teachers also asserted that this programme has largely influenced their teaching approaches. In this regard, they changed their teaching approaches such that children with visual problems are given special attention to facilitate their learning.

On the other hand, few nurses reported on how they were changed by the programme. Of those who responded, some reported that the knowledge on eye health changed their perception that visual problems are uncommon. Also, some nurses indicated that the programme has significantly improved their interest to conduct eye screening among school children and in their respective communities. Although approximately half the nurses across counties did not respond to this question, about half of the participants reflected positive comments about expertise gained through the programme. These participants asserted that their health knowledge was significantly improved to an extent that they can identify and treat eye problems among children.

What did you most like about this programme?

Participants were also asked to report what they mostly like about the programme and it was recognised that most teachers enjoyed the practical sessions which included eye screening. They mostly indicated that their abilities to identify unhealthy was the most

fulfilling experience. Teachers also indicated assisting children beyond learning activities which added great value in their work. Overall, most teachers liked most aspects of the programme from general organisation of the program, content presentation, hospitability of host schools, active involvement during the program and they were impressed with certificate of participation awarded.

Nevertheless, most nurses expressed that they mostly enjoyed the use of advanced equipment such as occluder and torch. Like teachers, some nurses were fascinated with practical session of the programme particularly performing eye screening. Nurses also indicated that they are privileged having been empowered to practice eye screening and that they can play a critical role in identification and solving various eye problems. Working with children was also described as the best experience by many nurses across counties.

Is there anything else that you would like to tell us about the trainings/programme/ lecturers/ course content/ facilities or resources?

When asked what else they would like to share with the project team regarding trainings, program, lecturers, course content, facilities or resources most teachers in all counties responded positively about the programme highlighting how they benefited. Most teachers reported that training resources including trainers were limited and suggested that these should be increased. Other teachers requested that the training should be conducted regularly. Only few teachers suggested that the programme should include ECDE teachers, community health workers and parents. Also, few teachers recommended the refresher courses for further skills and knowledge advancement in eye health.

Although few nurses did not respond when asked what else they would like to share with the project team regarding trainings, program, lecturers, course content, facilities or resources, most nurses indicated that they were satisfied with the training, however the resources should be increased. Nurses also noted that the period for training was too limited and suggested that the period should be increased. In addition, some nurses suggested that the programme team should do follow ups, monitor and evaluate the programme impact. On the other hand, some nurses stated that the training staff should

be increased and include more nurses versed with anatomy and physiology as facilitators of the training.

SECTION FOUR

4.0 Discussion

The findings and recommendations in relation to the main objectives are discussed in this section, addressing the common point highlighted and possibly gaps evident in the results.

Objective 1: Perceptions on training content, resources and materials, training quality and trainer efficiency

Content on skills that were provided for the programme was reportedly available in all counties. Training content was reported positive in all counties and all skills were reported and provided by the training programme.

The training resources and materials were also supported across all counties although they were not equally reported in all counties. Specifically, the occluder was the least reported as in most of the cases. A significant number of participants especially nurses stated that there was a need of providing a better training venue.

Quality of questions was not positively reported from all sectors with some participants from both groups stating that it was somewhat difficult. The clarity of the question was at stake, suggest that some of the participants found some questions difficult. A significant number of both teachers and nurses from Bungoma County stated that the learning objectives were not easy to handle. It therefore can be deduced that participants in Bungoma County found this set of questions somehow difficult.

The overall comment trainer faculty skills suggested that most of the participants in Nakuru County and Migori County were more of negative opinion across all the questions under the section of trainer skills. The reported skills were affirmed more from nurses than teachers in all skills.

Objective 2: Training practicality, usefulness and applicability

A Likert scale was used for checking the training practicality of the information learnt its applicability and usefulness. Among all participants for both teachers and nurses, most of them were of the positive opinion though in Nakuru there was significant number with negative sentiments.

Both the nurses and teachers agreed to a greater extent that relevant topics were covered according to expectations. In Kericho, 7.7% of the nurses “strongly disagreed” and in Narok 6.3% of the nurses disagreed that the training covered relevant topics. The training was found to be interesting, and challenging. The training created refractive error and low vision awareness since participants were then able to make both parents and children aware of the conditions. Some teachers reported that the knowledge and skills gained were useful for them in identifying children and family members with eye problems.

The applicability of the training was realised through the participants who were then able to detect eye problems in the school upon screening. In all the counties, the participants were able to appropriately apply the vision screening methods, devices and equipment.

Objective 3: Perceptions on training content, resources and materials, training quality and trainer efficiency

The contents of the training were deemed sufficient amongst both the teachers and nurses for good child eye health care. The training materials used were screening charts, torches, occluders, tape measures and training manuals. The participants argued that the training equipment was not enough though appropriate for the training. The teachers and the nurses showed that the data reporting system was properly done and

highlighted the need for eye health education and promotion. They endorsed that the quality of the training was good and efficient.

However, some practical sections of the screening and the basic anatomy and physiology of the eye posed a challenge amongst some teachers. This could have been attributed to the inexperience and poor background of the teachers in health related issues inducing the chances of them being sceptical. There is therefore a need to do more training to a sample of teachers.

Objective 4: Post training

The major challenge that teachers encountered in their post training was to convince parents to allow their children to participate in the screening programmes as the parents considered the eye screening invaluable and unnecessary. Furthermore, it was also discovered that some of the children were afraid and uncomfortable to have their eyes examined. Most parents did not have the capacity to finance their children eye health services let alone finance those referred for further eye examination. Transport problem was cited as a major barrier to carry out screening exercises in schools. Some participants cited hearing impairments amongst the children as a major communication barrier. In that regard, there will be need for participants who have experience in sign language.

Nurses cited screening tools and equipment as a major constraining factor. Unavailability of intervention measures and vision correction devices such as spectacles and contact lenses was also a barrier. Lack of transport, funding and limited health facilities were also cited as major barriers. Cultural issues were cited in Bungoma and Migori districts. In those districts, the parents believed that the problems were culturally and traditionally associated hence did not need any examination.

Objective 5: Changes in children's visual function post training screening

Most teachers indicated that children's behaviour towards eye care changed significantly as they could voluntarily have their eyes screened regularly. Children were able to report eye related problems they experienced early, that is an indication of an increase in valuing the importance of eye health awareness.

Teachers noted improvements in reading and writing skills amongst children diagnosed and treated with eye problems. Thus, the children's academic performance and participation in learning activities were significantly enhanced. The number of children missing lessons due to eye related problems also dropped significantly following the screening and treatment.

Objective 6: General comments

Teachers across the counties emphasised the need for increasing the duration of the training. They also suggested that the training programme should be continuous. The teachers also highlighted that training tools were inadequate. They also suggested seminars, workshops and refresher courses in eye health programmes. A few nurses came up with the idea of integrating parents into the eye screening programme to reduce blindness among children. Partnership development between government, hospitals, clinics and the community was to be a significant way of strengthening eye care within the five counties.

SECTION FIVE

5.0 Conclusion

The selected participants from the sampling gave an overall conclusion of positive opinions. The perceptions of teachers and nurses from all five counties suggested that the training offered by the faculty was not positively accepted by the participants in Migori and Nakuru counties. This then suggests that there is more need of interventions in these counties. Thus, there is a critical need to merge the efforts of the various aspects addressed in the training that deals with child eye care. Most of the training resources and material were reported but

they could be strengthened by periodically trainings and improving the venues being used. Usefulness and applicability of content covered was reported to have improved the skills and knowledge of vision screening though participants in Nakuru County were at variant with most of the things. On this regards, it can be suggested that there is need of doing more training courses and possibly involving more participants.

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