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AWARENESS ON AUGMENTATIVE ALTERNATIVE COMMUNICATION AMONG SPECIAL EDUCATORS IN NEPAL

INTRODUCTION

The American Speech-Language-Hearing Association (ASHA,2005) Special Interest Division 12: Augmentative and Alternative Communication (AAC) defined AAC as follows: AAC refers to an area of research, clinical, and educational practice. AAC involves attempts to study and when necessary, compensate for temporary or permanent impairments, activity limitations, and participation restrictions of individuals with severe disorders of speech-language production and/ or comprehension, including spoken and written modes of communication. (Beukelman & Mirenda, 2013)

Augmentative and alternative communication can provide a person with the ability to have and develop strong and rewarding relationships with others. Deny a person the ability to articulate intelligibly and that person is sentenced to live in social, intellectual and emotional isolation. (Prentice, 2000, p. 213)

Augmentative alternative communication systems are categorized as – unaided and aided modes. (Beukelman and Mirenda, 2013).Together, aided and unaided AAC systems may be used to supplement or replace a person's natural speech, and provide opportunities to develop the communicative competence to express wants and needs, develop social closeness, exchange information, and participate in social etiquette of daily interactions (Light and McNaughton,2012).

AAC is utilized for a variety of reasons, not simply when a child has trouble speaking; it can help kids of various spoken language abilities enhance their language skills. People that use AAC are referred to as total communicators or multimodal communicators, which indicates that they are capable of using a wide range of modalities. People with a variety of speech and language disorders, including congenital conditions like cerebral palsy (CP), intellectual disability (ID), and autism with non-verbal communication, use AAC. Children that commonly require AAC include those dealing with:

- Autism spectrum disorder (ASD)
- Intellectual or developmental disabilities (ID)
- Developmental apraxia of speech (AOS)
- Cerebral palsy (CP)
- Learning disabilities (LD)

Autistic children can have difficulties understanding or using spoken language. communication and language can sometimes be hard for them even after they've tired language development programs. This is where AAC can help children to learn and use early words. That's because children remember the speech sounds and the visual image of the object, picture or hand sign that paired with word.

AAC can play a significant role in helping children with CP develop effective communication skills and strategies. Motor problems associated with the different types of CP must be taken into consideration during AAC assessment and intervention. The type of CP often predicts the need for AAC. Children with CP and early onset degenerative diseases need frequent reassessment due to changes in the status of motor, language, and cognitive abilities.to keep up with developmental as well as degenerative changes, keep an eye toward the future and provide ongoing assessment.

Emerson and McGrother (2011) calculated the numbers of children with LD by extracting data from local registers of LD from different parts of the UK (Sheffield, Sefton, Greenwich, Bexley, Lambeth, Harrow, Leicestershire, Sutton and Merton) placing the number at 469.9 per 100,000 population. Experts felt that all of this cohort will have some restricted communication, many in line with their intellectual and cognitive abilities, however, some will show intellectual and cognitive abilities which are in advance of their ability to communicate. Using expert input, it was determined that 70.5 people per 100,000 have learning disabilities with speech, language or communication needs and could benefit from AAC.

For children who have Complex Communication Needs, the special educator may play a critical role in the intervention team. At first, the special educator must participate in collecting the vocabulary needed to program the Speech generating device. A lack of vocabulary or device malfunction are both examples of situations that need to be communicated immediately to the AAC team so the child does not miss out on communication opportunities (Beukelman and Mirenda 2013).

The SLP and OT also work closely with PT that can assess the best positioning of the client for communication. The physician can share the client's medical information with the team as well as the medical diagnosis. Finally, the psychologist can share cognitive assessment results with the team that can contribute to the proper device prescription. The educator, physician and psychologist work in a multidisciplinary model with the SLP and OT.

There is a combination of transdisciplinary, interdisciplinary and multidisciplinary models that have been proven efficient within AAC. A transdisciplinary collaboration is formed between the SLP and the OT, who together, work within an interdisciplinary model with the technician and the communicative disorders assistant. Furthermore, the SLP and OT work together within a multidisciplinary model with the educator, physical therapist, physician and psychologist.

To promote effective team collaboration, there is a need to specifically examine the experience of special education special educators who work with students who use AAC. Special educators are often the case managers of the students and assume a team leader position among key stakeholders. According the Council for Exceptional Children (CEC 2015), CEC is the largest professional organization for special education, the responsibilities of special educators include developing curriculum, delivering instruction, coordinating services, collaborating with families, and supervising paraprofessionals. In addition, for special educators working with students with developmental disabilities and autism spectrum disorders, a population that often requires communication support, CEC specifically recommended that delivering AAC services be a required skill.

Srinivasan, S., Mathew, S. N and Lloyd, L. L. (2011) investigated current trends in communication intervention and augmentative and alternative communication (AAC) in southern India through a mixed-methods design. Study participants (n = 18) were special educators, SLP, and behavior therapists. Responses from the questionnaire were quantitatively analyzed. Open-ended interview questions were recorded and qualitatively analyzed for emergent themes. The results are presented as descriptive statistics and insights. Some prevalent perspectives conveyed by the participants include that (a) communication intervention should be a structured, child-centric process, using a collaborative team model; (b) parents play an integral role in decision making and intervention; (c) because of the diversity that exists in India, cultural and linguistic issues are imperative in decision making and intervention; (d) use of better materials and technology can improve intervention; (e) better training programs are needed; and (f) more conference, workshops, seminars are required as a common platform for professionals to learn and interact. The present research attempt to assess the knowledge about AAC among special educators across various district of Nepal.

REVIEW OF LITERATURE

AAC intervention services and AAC technology are part of the habilitation and rehabilitation services and technology designation. Rehabilitation refers to intervention strategies and technologies that help someone who has an acquired disability regain a capability, whereas habilitation refers to intervention strategies and technologies that assist a person, such as someone with a developmental disability, to develop a capability for the first time.

About 20% of the family members claimed to use AAC as adults, while 80% claimed to use AAC as children. These two groups of AAC users were divided apart for the analysis. Assistive Ware, Carole Zargari, and Jane Farrell worked together to create the survey.

AAC systems are categorized as–unaided and aided modes. (Beukelma and Mirenda 2013).

1. Aided AAC modes require tools and or equipment beyond the person's body, ranging from pictures and communication boards, to switches and speech-generating devices. Aided AAC uses tools like low tech and high tech.

- Low-tech systems use equipment like cards, boards or books with photos or pictures that represent tasks, actions or objects. Autistic children can learn to use these tools to understand what people are saying, ask for what they need, make comments and answer other people's questions (Picture Exchange Communication Systems (PECS) and visual timetables are examples).
- High-tech systems include speech-generating devices. There are also many apps to help children with communication skills.

2. Unaided AAC system don't need any equipment. Unaided AAC modes involve the use of the person's body to communicate, including using gestures, eye gaze, and sign language. They use gestures and hand signs to support speech, or as the main way of communicating.

Early childhood intervention services should examine AAC tools for children who are at risk for communication difficulties due to conditions like CP. Difficulty expressing language or articulating sounds appropriately can deficits be the result of congenital or acquired disabilities, including but not limited to ASD, CP, ID, HI, stroke, developmental

delay, and for some children with DS, receptive language has been found to progress quicker than expressive language due to difficulty with production of language and forming phrases and sentences. Early interventions with AAC aid in the growth of communication abilities (Beukelman & Mirenda 2013).Even very young children can use and gain from AAC. For instance, systematic reviews were done by Romski et al. (2015). A variety of AAC techniques, including gestures, signs, photographs, and/or high-tech devices, were used in the investigations. In the younger age groups, the low tech (also known as no tech) options were mentioned more frequently. Both studies came to the same conclusion: AAC could be taught to young children with the right kind of help, and it encouraged the growth of expressive communication abilities. AAC can offer great benefits for individuals with DS, as well as any other children who may need it. It can assist in language development, encourage language use, increase confidence in communication, and allow for social language and relationships to develop.

PT who can judge how best to position the children for communication collaborate closely with SLP and OT. Along with the medical diagnosis, the doctor is able to give the team access to the child medical records. The results of the cognitive exam can also be shared with the team so that the right device can be prescribed. Along with the SLP and OT, the teacher, doctor, and psychologist collaborate in a multidisciplinary model. The SLP and the OT work together in an interdisciplinary model with the technician and the communicative disorders assistant. This collaboration is known as transdisciplinary. Special educators frequently act as the children' case managers and team captains among important stakeholders. The main professional organization for special education, the Council for Exceptional Children (CEC 2015), states that special educators are responsible for creating curricula, giving instruction, coordinating services, working with families, and supervising paraprofessionals. Additionally, CEC (2015) particularly advised that providing AAC services be a needed competence for special educators working with students who have developmental impairments and autism spectrum disorders, a population that frequently needs communication Support. The ASHA (2016) describes that SLPs play a central role in the screening, assessment, diagnosis, and treatment of persons requiring AAC intervention, including clinical/educational services (diagnosis, assessment, planning, and treatment), advocacy, education, administration, and research. The ASHA Code of Ethics (2016) also specifies that SLPS should engage in only those aspects of the profession that are within their scope of competence, considering their level of education, training, and experience.

Western literature

Bailey, Parette, Stoner, Angell & Carroll (2006) examined the family members' perceptions regarding the use of AAC devices & factors that were perceived to affect student's use of AAC devices, family expectations, and benefits of AAC device use were explored and a variety of common perspectives emerged from the data, including four thematic categories: expectations, facilitators, barriers, and benefits of AAC device use.

Hanson & Lynch (2013) reported that families are often connected with the person who uses AAC on a long-term basis, as opposed to other communication partners who may come and go. Any color, ethnicity, culture, sexual orientation, level of money, religion, or level of education may make up a con temporary family. Family members must be ready to take part in decisions about daycare, health care, schooling, residential living, and even end-of-life care because of their extended involvement in AAC interventions. To provide the continual everyday communication assistance that families frequently provide, AAC facilitators can be found (e.g., maintaining AAC technology, updating vocabulary and messages, teaching new communication partners).

Schlosser & Wendt (2008) determined the effects of augmentative and alternative communication intervention on speech production in children with autism or pervasive developmental disorder and concluded that although AAC Interventions do not appear to impede speech production and may result in increased speech production & also future research should be more hypothesis driven to aim to identify predictive child characteristics, such as prior speech imitation and object exploration skills.

Finke, Light & Kitko (2008) reviewed the communication between nurses and patients with complex communication needs where specific strategies that is AAC which can be used by nurses to improve & facilitate communication with patients with Complex communication needs are provided and concluded that using AAC strategies will help nurses and patients better Communicate with each other when speech is not an option.

Costigan & Light (2010) investigated on preservice AAC training for speech language pathologists, special educations special educators, and occupational therapists was reviewed to investigate the adequacy & effectiveness of current practices and results indicate that many preservice programs offer minimal AAC training, faculty members have minimal expertise in AAC, and the effectiveness of preservice programs in equipping professionals are unprepared for entry-level practice.

Subihi (2013) aimed to investigate special education student's special educators' knowledge of AAC and its relation to their academic levels and unique- specializations and to achieve this objective, the researcher administered a ten questions test on 30 participants all of whom met the study including criteria and the results suggested an inadequacy of participants knowledge of AAC and an urgent need for relevant education & training.

Weng (2015) developed app to evaluate iPad apps intended for educational use in special education. The usability test showed the app useful in evaluation of selecting apps. The concerns and recommendation incorporated to develop the app for future.

Fonte & Boesch (2016) studied the empirical evidence that supports the notion of special education special educators receiving limited pre-service training in AAC and the evidence suggests there is a lack of training for special education special educators and other professionals in this area & limited research to guide teacher preparation programs.

Biggs, Carter & Gustafson (2017) used a multiple-probe- across participants design to investigate the efficacy of collaborative planning and peer support arrangements to increase peer interaction in inclusive classrooms & they noticed that the use of AAC increased communication to and from their peers so they offer implications for research and practice on supporting social interaction in general education settings.

Neill, Light & Pope (2018) investigated the effects of AAC interventions that included aided AAC input on communicative outcomes for individuals with developmental disabilities who use AAC and a systematic identification of 26single case experimental designs (88 participants) and 2 group experimental designs(103 participants) where studies were coded in terms of participants , intervention characteristics, dependent variables, outcomes, and quality of evidence and later concluded that aided AAC input may reduce input-output asymmetry and enhance expression and comprehension for individuals who use AAC; the evidence suggests that partners should utilize this strategy.

Children with complex communication needs, for example, may have regular interactions with a diverse range of educational personnel (e.g., special educators) as well as other service providers (e.g., SLP, OT and PT). They have knowledge and skills to: maintain and develop AAC supports to ensure proper positioning of the individual to support reliable access to AAC; adapt materials and activities as needed to support the participation of individuals on AAC; and use effective, evidence-based instruction to teach new skills to the individual who relies on AAC or to support information.

Biggs, Carter & Gilson (2019) reviewed practice and research by identifying and synthesizing research on interventions in which natural communication partners implemented aided augmentative and alternative communication modeling strategies and the findings from their review inform the design and delivery of aided AAC modeling interventions by children's natural communication partners & also they highlight important avenues for enhancing the need of future research on interventions involving aided AAC modeling, including the quality of reporting and application of principles from implementation science.

Children who use AAC may come into contact with communication partners in a variety of settings, each with its own set of constraints, such as educational, vocational, health care, family, and community settings. Some communication partners may have lifelong relationships, such as family members; others may be involved for several months or years, such as special educators, professionals, friends, personal care attendants, AAC facilitators, or coworkers; and still others may have only a single brief interaction or occasional interaction, such as a health care provider, public transit worker, restaurant worker, or store cashier, but this single interaction may still be significant.

Fonte, Boesch, Deluca, Papp, Mohler, Holmes, Clouse, Young & Urbano (2022) reported that special educators are essential team members in the provision of services to students with complex communication needs and the findings indicated that most special education special educators did not receive formal training in AAC during their teacher licensure preparation programs, resulting in low levels of self -reported knowledge and skills & data also indicates that while influencing factors existed, special education special educators knowledge and skills in AAC remained minimal.

Asian Literature

Nigam (2006) assessed Asian-Indians who use AAC for individuals who temporarily or permanently are not able to communicate through use of gesture/signs, speech, or written communication mode benefit from use of augmentative and alternative communication systems and they concluded that while a lexicon from symbol sets developed for one culture might have considerable overlap across cultures, these lexicons may not be appropriate as a source of selecting a lexicon for an AAC user from a culturally and linguistically diverse background.

Rubina (2010) reported the effectiveness of Makaton vocabulary language program, a system of alternative and augmentative communication on development of language and social behavior of children with autism and it was concluded that use of AAC had a positive effect on development of receptive and expressive language & also effective in enhancing social behavior of children with autism.

Na, Wilkinson, Karny, Blackstone & Stifter (2016) reported that emotional competence which refers to the ability to identify, respond to, and manage one's own and other emotions. Emotional competence is critical to many functional outcomes, including making and maintaining friends, academic success, and community integration and they concluded that emotions is as important for children who use AAC as it for children who are learning.

Shrestha, shah & Dhakal (2021) investigated on the development of a learning platform for children with ASD in Nepal in the form of a desktop application and they concluded that this kind of learning platform can help the children with ASD to grow their skills in different fields and also with the implementation of analytics and cloud computing into the data collected through this application in future.

NEED OF THE STUDY

AAC is a set of tools and strategies that an individual uses to solve every day communicative challenges. Communication can take many forms such as: speech, a shared glance, text, gestures, facial expressions, touch, sign language, symbols, pictures, speech-generating devices, etc. Everyone uses multiple forms of communication, based upon the context and our communication partner. Effective communication occurs when the intent and meaning of one individual is understood by another person. The form is less important than the successful understanding of the message (International Society for Augmentative and Alternative Communication (ISAAC))

Many children who experience challenges with verbal speech and communication can be supported to express their thoughts, wants and needs through AAC. For most special Educators it is easy to see how AAC can be beneficial to children with motor difficulties, like CP. Using AAC tools makes a difference especially for children, who are much likely expected to improve their communication skills. Such tools are used in different therapies for kids to practice their language interactively. Special education basically refers to "Educational programs and practices designed for students- who are handicapped or gifted, with mental, physical or emotional disabilities and hence require special teaching approaches, equipment or care within or outside a regular classroom". Special Educators needs to focus on designing a structure of education that can overpower the disadvantages related to these disabilities, and help children in getting quality education. Not everybody can teach a child with exceptional and special needs. As an educator, such special education courses help them to receive an in-depth understanding of the psyche and behavioral patterns of children with special needs and thereby they will be able to carry out the teaching process in a more eased out manner. The aim of special educators is that they train parents / caregiver without any gap and make parents or caregiver all ready for the venture of effectively teaching children with special needs.

Andzik and Chung (2019) did a qualitative interview approach was utilized to examine the perspectives of 14 special education special educators who supported students using AAC systems. Participants described their experiences regarding providing AAC services and concluded that the majority of special educators identified challenges, including inadequate training, lack of comprehensive assessment, inadequate preparation time, and inconsistent AAC implementation across team members.

The current study assesses the AAC for children among special Education school's special educators in Nepal. When planning and carrying out interventions, special educators use a transdisciplinary team approach. Special educators are crucial for the planning of role in helping SLP's for the planning and intervention of AAC users. Feasible objectives that are very important to the child and the family have been created by special educators. They always engage the family so that interventions can take place in various situations. Inadequate information and a negative attitude toward AAC users and its treatment leads to a lack of ineffective use of management and recommendation. The development of effective teacher, education programmers should place more of a focus on communicative intervention. A special educators have the skills, information, resources, and training necessary to instruct others. Discussions in the meetings should cover recent developments in intervention strategies, fresh methods, and materials. The special education sector in Nepal should make an effort to hire more professionals. More structured and accessible seminars and conferences will give professionals more chances to exchange information and enhance their knowledge in order to select and use the aided and unaided AAC system/technology efficiently in Nepal

METHOD

AIM

The purpose of study is to investigates awareness in Special school teachers regarding AAC for children with Communication Disabilities.

METHOD

The present study is carried out in two phases.

PHASE 1: PREPARATION OF QUESTIONNAIRE

The questionnaire was developed using a range of supporting literature. A set of 15 (yes/no) questions and 15 multiple choice questions, total 30 questions were selected and validated by 5 SLP who are currently in practice. The correction and suggestions are incorporated in the preparation of questionnaire.

PHASE 2: PARTICIPANTS

20 Special school special educators in and around Kathmandu with working experience of more than 3 years were taken.

INCLUSION CRITERIA

- Certified Special Educators
- Experience
- Working in school setup

EXCLUSION CRITERIA

- Other professionals like occupational therapy, physiotherapist, speech language pathologist, radiologist.
- Special education working in clinical setup
- Less than a year experience

PROCEDURE:

Data required was collected by distributing questionnaire develop in Nepali language to all target population chosen as sample. A brief list of special Educators was prepared among different cities of Nepal. An initial phone contact and messages were sent to determine their willingness to participant in study about communication interventions in the respective school for children with disabilities.

TOOLS USED:

E-questionnaire was developed in English/ Nepali language which was validated by 6 speech language pathologists who were fluent in both English and Nepali language. The questionnaire consists 15 multiple choice questions and 15 yes/ no questions.

SCORING

The validated questionnaire consisted of 15 multiple choice questions and 15 yes/ no questions by scoring yes 1 and no 0 the data was arranged and further given for statistical analysis.

STATISTICAL ANALYSIS

The gathered data further statically analyzed using man Whitney test**.** The collected data were summarized by using the Descriptive Statistics: frequency and percentage. Binomial test was used to find the significance in proportion. The p value < 0.05 was considered as significant. Data were analyzed by using the SPSS software

RESULT AND DISCUSSION

Table 4.1

Showing percentage score of awareness on AAC among special school teachers in multiple choice questions and yes/no questions.

		Frequency	%	P-value	Significance
1. Two types of AAC are	Aware	18	90	0.001	HS
	Not aware	2	10		
2. The primary goal of AAC	Aware	13	65	0.263	NS
	Not aware	7	35		
3. Examples of aided communication system	Aware	11	55	0.824	NS
	Not aware	9	45		
4. Examples of unaided communication system	Aware	11	55	0.824	NS
	Not aware	9	45		
5. Which of the following will not come under low technology device	Aware	9	45	0.824	NS
	Not aware	11	55		
6. Which of the following will not come under high technology device	Aware	9	45	0.824	NS
	Not aware	11	55		
7. Which of the following group will not use AAC	Aware	5	25	0.041	S
	Not aware	15	75		
8. Disadvantage of high technology electronic device	Aware	12	60	0.503	NS
	Not aware	8	40		
9. What is visual communication board used for	Aware	18	90	0.001	HS
	Not aware	2	10		
10. High tracking device can	Aware	11	55	0.824	NS
	Not aware	9	45		
11. Application of eye gaze technology can be seen mostly for	Aware	14	70	0.115	NS
	Not aware	6	30		
12. Which of the following is used mostly for children with CP and autism	Aware	16	80	0.012	S
	Not aware	4	20		

13. Which category of children will be mostly benefited from AAC	Aware	12	60	0.503	NS
	Not aware	8	40		
14. AAC preferred to children with	Aware	9	45	0.824	NS
	Not aware	11	55		
15. What are the barriers seen for effective use of AAC	Aware	16	80	0.012	S
	Not aware	4	20		
16. Do you think AAC will provide better communication skills for children with multiple disability	Aware	17	85	0.003	S
	Not aware	3	15		
17. Do you think children of all ages can use if they have trouble with communication	Aware	13	65	0.263	NS
	Not aware	7	35		
18. Can children with communication disorders use AAC to read and write	Aware	18	90	0.001	HS
	Not aware	2	10		
19. Does low unaided technology will work only with batteries	Aware	14	70	0.115	NS
	Not aware	6	30		
20. Should we consider the child's vocabulary before customizing low technology picture exchange communication skills	Aware	10	50	1	NS
	Not aware	10	50		
21. Do your school provide AAC setup for children with multiple disability	Aware	11	55	0.824	NS
	Not aware	9	45		
22. Is high technology aided AAC system, an electronic device which stored message and allowed to use as speech output	Aware	15	75	0.041	S
	Not aware	5	25		
23. Can AAC assess non-verbal children to develop language skills and helps in daily activity	Aware	9	45	0.824	NS
	Not aware	11	55		
24. Is unaided AAC technology	Aware	16	80	0.012	S

communication board effective for autistic children	Not aware	4	20		
25. Is it important to assess the motor capability to determine potential access to AAC	Aware	10	50	1	NS
	Not aware	10	50		
26. Is it important for family member/ peer group have an important role in AAC service delivery	Aware	14	70	0.115	NS
	Not aware	6	30		
27. Do you think AAC training should be provided to all special school teachers in Nepal	Aware	18	90	0.001	HS
	Not aware	2	10		
28. Are AAC instructions given by occupational therapist to children with communication disorders	Aware	11	55	0.824	NS
	Not aware	9	45		
29. Do you think AAC is cost effective	Aware	6	30	0.115	NS
	Not aware	14	70		
30. Are there any government funds available for AAC users in Nepal	Aware	5	25	0.014	S
	Not aware	15	75		

Fig 4.1 Showing percentage score of awareness on AAC among special school teachers in multiple choice questions and yes/no questions

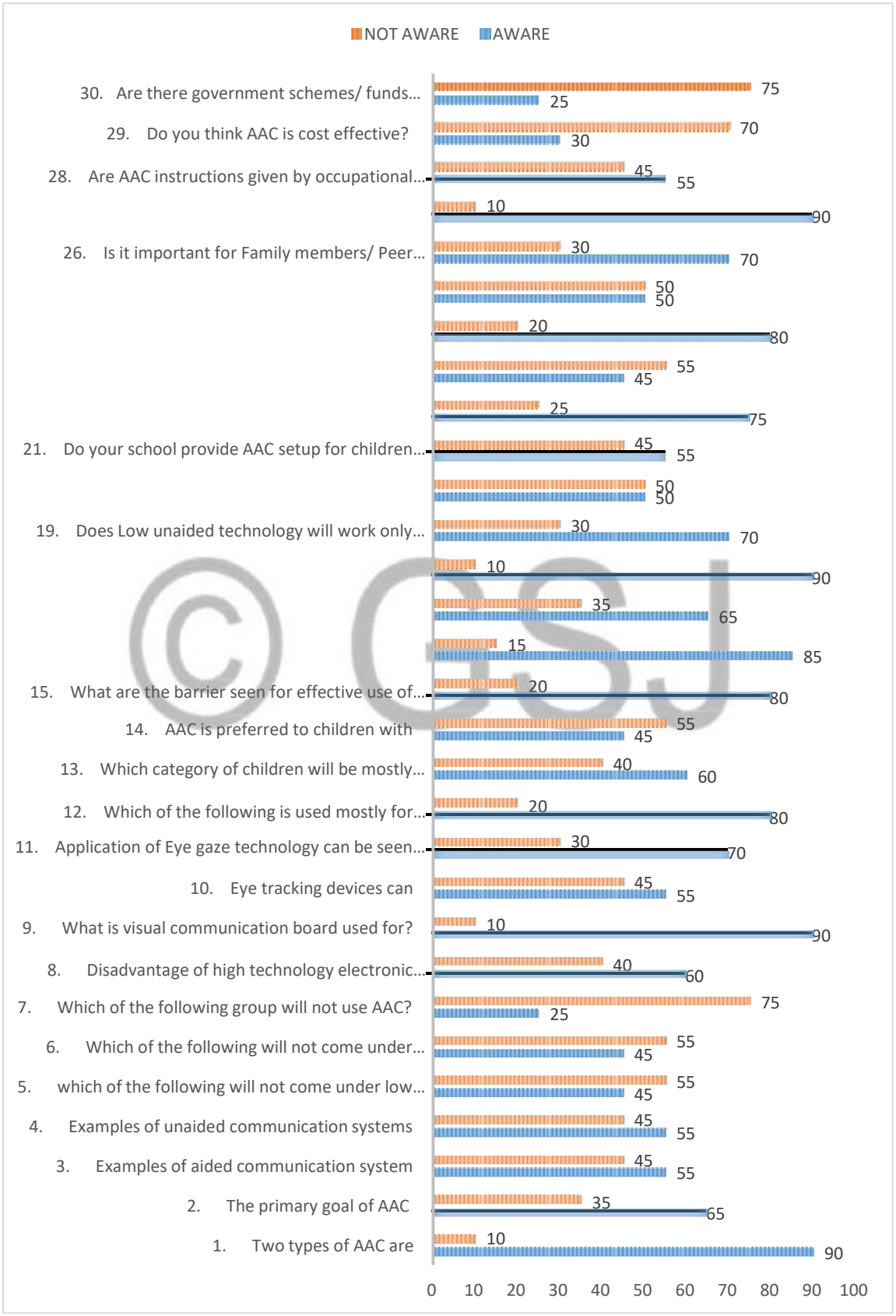


Table 4.1 & fig 4.1 shows score of 90% for question1,9, 18 & 27 With high significance difference. Also shows score of 25% for question 7 ,80% for question 12, 80& 85% for question 15 & 16, 75% score for question 22, 80% score for question 24 and only 25% are aware for question 30 with significant difference. Shows score 35% teachers are not aware for question 2, 55% of them for question 3 &4 and score of 45% for question 5 & 6, score of 40% are not aware for question 8, 45 % for question 10 ,30% for question 11, 40% are not aware of question 13 and 55% are not aware of question 14, 35% are not aware of question 17, 30% are not aware of question 19, 50 % are not aware of question 20 ,45% are not aware of question 21, 55% are not aware of question 23 ,50% are not aware of question 25, 30% are not aware of question 26, 45% are not aware of question 28 and 70% are not aware of question 30 with no significant difference.

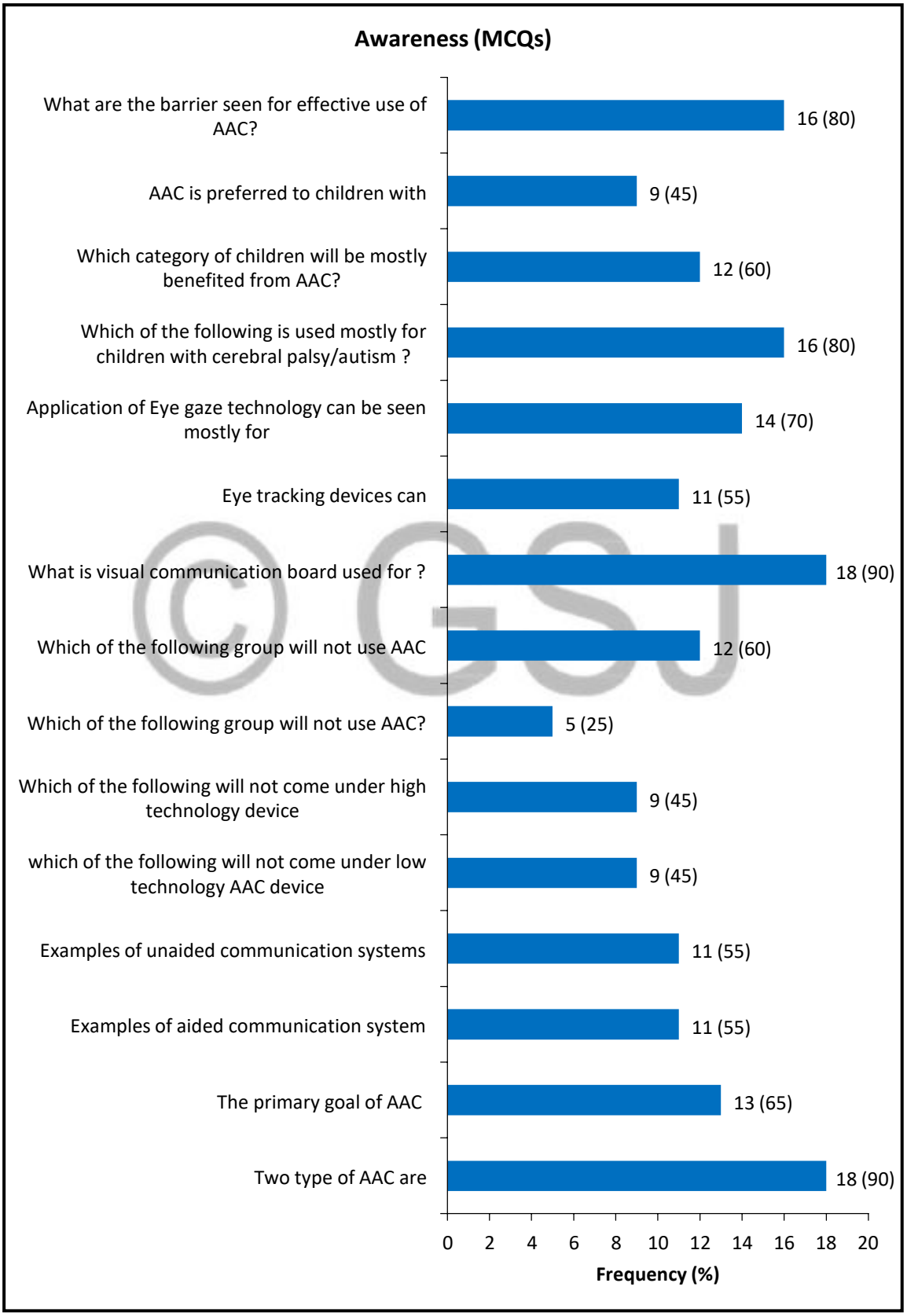
Table 4.2

Showing percentage score of multiple-choice questions on awareness of AAC among special school teachers

	frequency	%	frequency	%	P value	Significance
1. Two types of AAC are	18	90	2	10	0.001	HS
2. The primary goal of AAC	13	65	7	35	0.263	NS
3. Examples of aided communication system	11	55	9	45	0.824	NS
4. Examples of unaided communication systems	11	55	9	45	0.824	NS
5. which of the following will not come under low technology AAC device	9	45	11	55	0.824	NS
6. Which of the following will not come under high technology device	9	45	11	55	0.824	NS
7. Which of the following group will not use AAC?	5	25	15	75	0.041	S
8. Disadvantage of high technology electronic device	12	60	8	40	0.503	NS
9. What is visual communication board used for?	18	90	2	10	0.001	HS
10. Eye tracking devices can	11	55	9	45	0.824	NS
11. Application of Eye gaze technology can be seen mostly for	14	70	6	30	0.115	NS
12. Which of the following is used mostly for children with cerebral palsy/autism?	16	80	4	20	0.012	S
13. Which category of children will be mostly benefited from AAC?	12	60	8	40	0.503	NS
14. AAC is preferred to children with	9	45	11	55	0.824	NS
15. What is the barrier seen for effective use of AAC?	16	80	4	20	0.012	S

Fig 4.2

Showing percentage score of multiple-choice questions on awareness of AAC among special school teacher



From table 4.2 and fig 4.2 it can be seen that 90% are aware about two type of AAC , 65% are aware about the goal of AAC, 55% knows about both examples of aided and unaided communication system,45% are aware about what comes under high tech &low tech,60% are aware about the disadvantages of high technology electronic devices , 90% are aware about visual communication board usages ,55% are aware about the need of eye tracking devices ,70% of them are aware about the application of Eye gaze technology,80% are aware that AAC is used mostly for children with cerebral palsy/autism, 60% are aware about the category of disordered children who will be mostly benefited from AAC,45% is preferred to children with non-verbal mode of communication and 80% are aware about the barrier seen for effective use of AAC.

Table 4.3

Showing percentage score of yes/no questions on awareness of AAC among special school teachers

	YES		*NO*		*P value*	*Significance*
	frequency	*%*	*frequency*	*%*		
16. Do you think AAC will provide better communication skills for children with multiple disability?	17	85	3	15	0.03	S
17. Do you think children of all ages can use AAC if they have trouble with communication?	13	65	7	35	0.263	NS
18. Can children with communication disorders use AAC to read and write?	18	90	2	10	0.001	HS
19. Does Low unaided technology will work only with batteries / electrical input?	14	70	6	30	0.115	NS
20. Should we consider the child's vocabulary before customizing low technology Picture exchange communication skills?	10	50	10	50	1	NS

21. Do your school provide AAC setup for children with multiple disability?	11	55	9	45	0.824	NS
22. Is high technology aided AAC systems, an electronic device which store message and allow to use as speech output?	15	75	5	25	0.041	S
23. Can AAC assist nonverbal children to develop language skills and helps in daily activities?	9	45	11	55	0.824	NS
24. Is unaided AAC technology communication board effective for autistic children?	16	80	4	20	0.012	S
25. Is it important to assess the motor capabilities to determine potential access to AAC?	10	50	10	50	1	NS
26. Is it important for Family members/ Peer group have an important a role in AAC service delivery?	14	70	6	30	0.115	NS
27. Do you think AAC training should be provided to all special school teachers in Nepal?	18	90	2	10	0.001	HS
28. Are AAC instructions given by occupational therapist to children with communication disorders?	11	55	9	45	0.824	NS
29. Do you think AAC is cost effective?	6	30	14	70	0.115	NS
30. Are there government schemes/ funds available for AAC user in Nepal?	5	25	15	75	0.041	S

Fig 4.3

Showing percentage score of yes/no questions on awareness of AAC among special school teachers

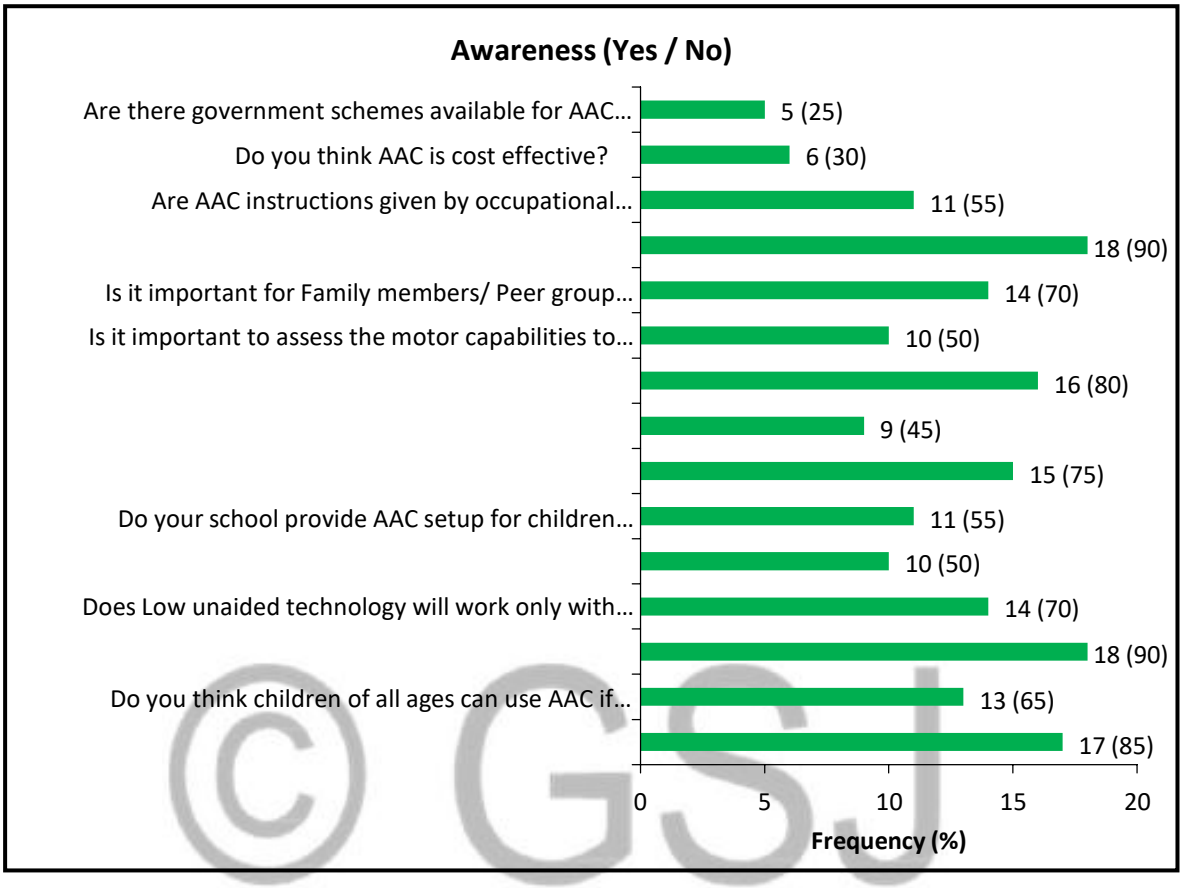


Table 4.3 and fig 4.3 reveals that 90% of the special educators consider that children with communication difficulties can use AAC to read and write, 85% of them are aware of the benefits of AAC for multiple disabilities, 65% are aware of age range. 70% are aware of low aided technology and 50% aware of its customization. 55% of special educators are aware of whether or not schools provide AAC setup for children with multiple disabilities, 75% are aware of high-tech aided AAC systems, 45% are aware that AAC can help nonverbal children develop language skills, and 80% are aware of whether or not unaided AAC technology communication boards are effective for children with autism50% are aware that it is crucial to evaluate the motor abilities to determine potential access to AAC, 70% are aware of the significance of family members and peer groups in the delivery of AAC services, 90% are aware that all special school teachers in Nepal should receive AAC training, 55% are aware of whether or not occupational therapists should provide AAC instructions to children with communication disorders, 30% believe that AAC is cost-effective, and 25% are aware about government schemes/ funds availability Nepal.

Table 4.4

Showing overall percentage score of multiple-choice question and yes/no questions on awareness of AAC among special school teachers

Overall	Frequency	%
Awareness (MCQs)	13	65
Awareness (Yes/No)	14	70
MCQs & Yes / No	13	65

Fig 4.4

Showing overall percentage score of multiple-choice question and yes/no questions on awareness of AAC among special school teachers

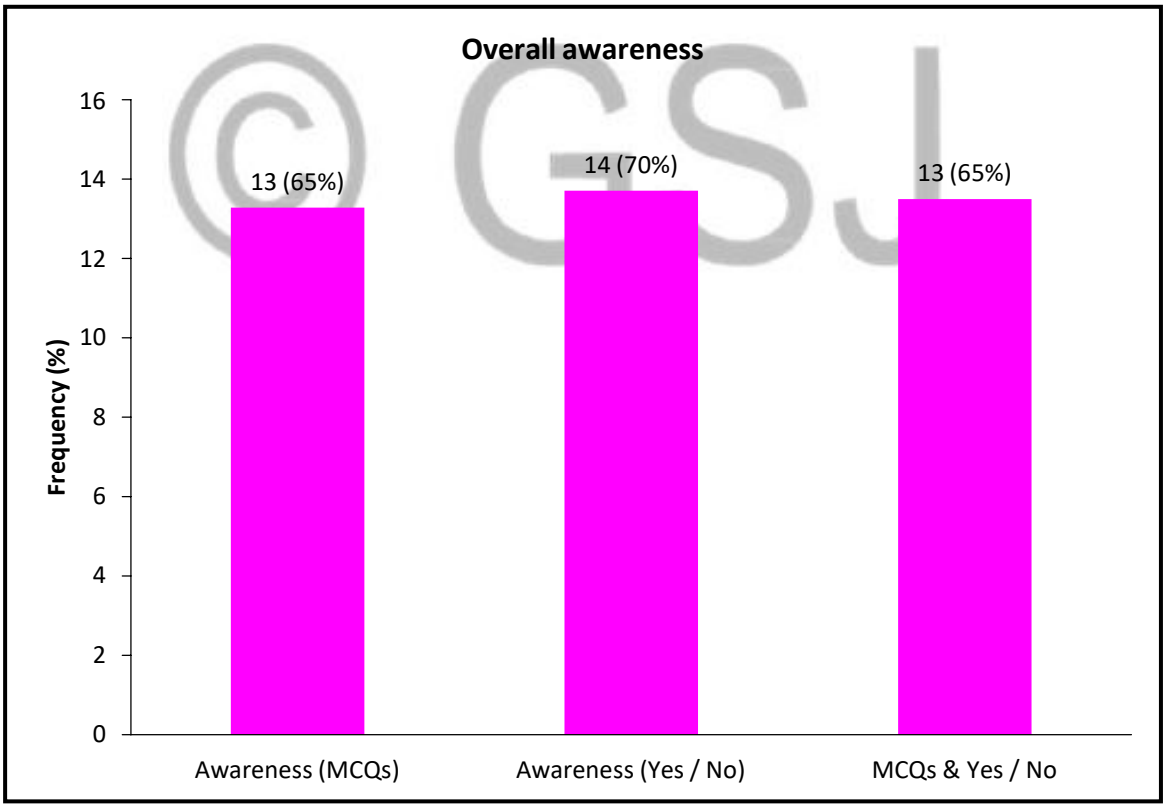


Table 4.4 and fig4.4 shows score of 65% on multiple choice question and 70% on yes/no question. Hence moderate awareness on Multiple choice questions & yes/ no questions and average of 65% of special educators are aware of AAC.

Table 4.5

Showing overall percentage score of awareness of AAC among special school teachers in Nepal.

	Frequency	%
Aware	13	65
Not aware	7	35

Fig 4.5

Showing overall awareness scores of participants

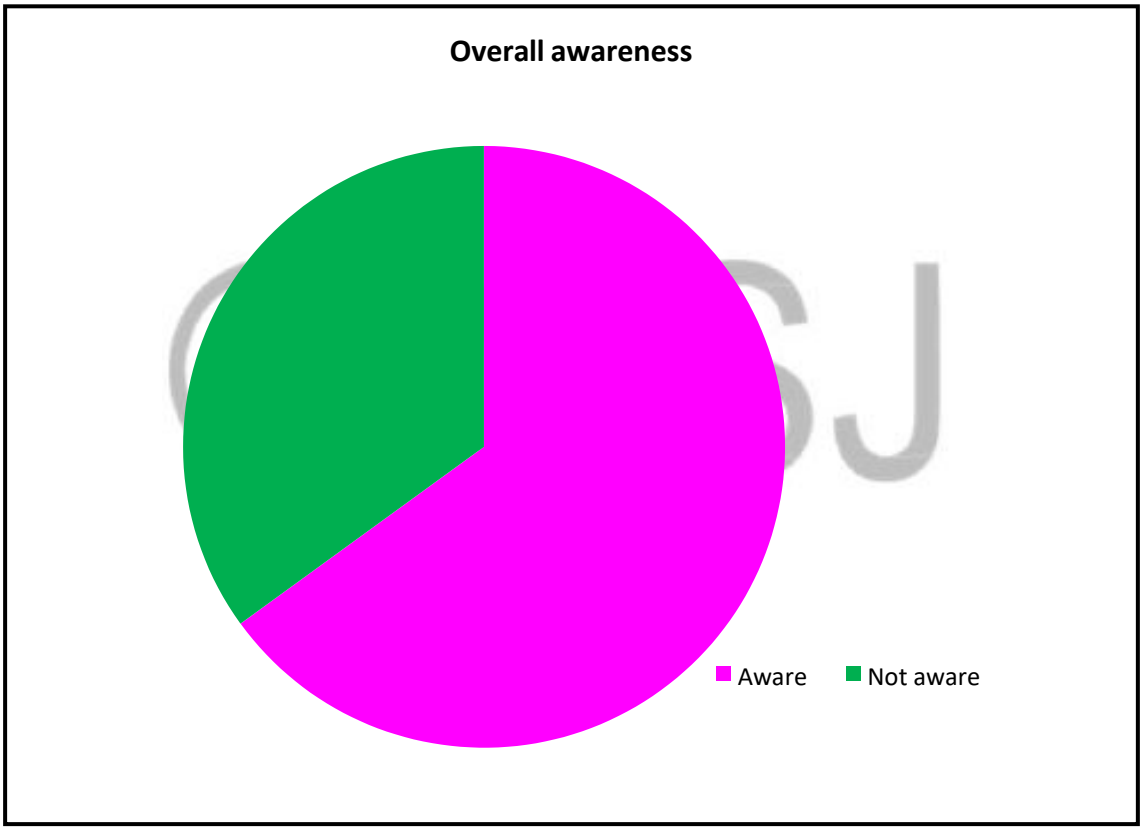


Table 4.5 and fig 4.5 shows among 20 teachers ,13 are aware scoring 65% and 7 educators are not aware scoring 35%

DISCUSSION

This current study assesses overall awareness of special educators regarding AAC for children among special educators in Nepal. Total of 20 special educators are participated in the current study Online survey was conducted using a questionnaire.

According to findings in the current study, moderate awareness was seen in special educators of Nepal on questions and average of 65% of special educators are aware of AAC which was consistent with the findings by Subihi (2013) which revealed that an inadequacy of participants knowledge of AAC and necessity of relevant education & training in Saudi.

The results of the current study suggest that moderate knowledge scores on AAC among special educators which are shown to be due to less knowledge about types of AAC and usages of it. Costigan & Light (2010) reported that many preservice program of minimal AAC training, faculty members have minimal expertise in AAC, and the effectiveness of preservice programs in equipping professionals are unprepared for entry-level practice and the study. However, because there are fewer special schools and less special educators in Nepal that leads to less educational program so special educators are less aware. According to the current study, more training program on AAC should be made available to special educators in order to improve their positive attitude toward the disorders, increase their knowledge, and prevent misconception about the AAC users. This will improve the special educators' degree of cooperation with SLP's to diagnose and decide the candidates of AAC, reduce the difficulties that children faced in the classroom environment, and prevent the disorder's potential future consequences.

SUMMARY AND

CONCLUSION

AAC system's main objective is to encourage people to actively engage in meaningful activities in their daily lives. According to research, AAC benefits people of all ages, including those under the age of three. The majority of them are simultaneously unaware of the technology, while some are aware of it but do not use it frequently because high-tech AAC is expensive to use in classrooms and some parents of children find it overpriced. According to the current study, the questionnaire on the topic of AAC received an equal number of replies from Nepali special educators. The results of the current study reveal that among 20 especial educators ,13 (65%) is aware and 7 (35%) educators are not aware hence resulting in a moderate awareness among them. Special educators of Nepal need more of skills, information, resources, and training necessary to instruct others. The special education sector in Nepal should make an effort to hire more professionals. More structured and accessible seminars and conferences on AAC will provide professionals more chances to exchange information about using ACC effectively for children/adults with communication disorders.

Limitation

- Sample size is less
- Study was focused on special educators in and around Katmandu, Nepal

Future direction

- Sample size can be increased.
- Study can be carried out in other districts in Nepal.
- It can be used for further studies where the study can be carried out different professionals like physiotherapist, occupational therapist, special school teachers, psychologist, who works with special children and compare the professionals to provide individuals awareness program according to need.

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