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Attitudes of Non-disabled Students towards Inclusion of Peers with Visual Impairment in Tanzanian Regular Education

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Abstract

The study investigated the attitudes of non-disabled students towards the inclusion of peers with visual impairment in Tanzania's regular education classrooms. In particular, it examined the differences between male and female students in their attitudes on the inclusion of peers with visual impairment in regular secondary schools; the influence of class level; and the influence of school type on attitudes towards inclusion. Three regular secondary schools were purposively selected and a total of 283 non-disabled students participated in the study. The findings showed that A-level students held more positive attitudes compared to O-level students. Furthermore, the attitudes of non-disabled students towards the inclusion of students with visual impairment were associated with the student's school type. Moreover, the attitudes of non-disabled students towards the inclusion of peers with visual impairment were positive among non-disabled female students compared to non-disabled male students. The study recommends for greater participation of non-disabled students on issues pertaining to inclusive education.

Keywords: Attitudes, inclusive education, visual impairment, non-disabled students, regular education.



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Introduction

Traditionally, students with disabilities in Tanzania are enrolled in special schools. Developing inclusion strategies in schools has been emphasized in many countries in recent decades, giving rise to a variety of definitions, policymaking activities and school practices (Sakız & Woods, 2015). Until recently, students with vision-impairments were generally assigned to particular education settings based on the type/level of their impairment; a system popular in many countries (McCarthy & Shevlin, 2017). The Ministry responsible for secondary education in Tanzania designated 82 regular secondary schools in order to enroll students with disabilities, including those with visual impairment, for mainstream inclusive education. Inclusive education is now globally accepted as a useful approach in promoting a more inclusive society (Torgbenu, Oginni, Opoku, Nketsia, & Agyei-Okyere, 2018). The implementation of inclusive education has led to an increase of academic studies on peer attitudes towards inclusive education (De Boer, Pijl, & Minnaert, 2012; Moberg, Muta, Korenaga, Kuorelahti, & Savolainen, 2019; Ravenscroft, Davis, Bilgin, & Wazni, 2019). However, there is a dearth of research on the inclusion of students with visual impairment in regular education in Tanzania. Hence, there exists a paucity of knowledge on the attitudes of non-disabled students towards the inclusion of students with visual impairment in regular schools. According to Mnyanyi (2014), the reasons for promoting inclusion are that regular schools with inclusive orientation are regarded as the most effective means of preventing discriminatory attitudes, whilst creating welcoming communities; building an inclusive society and achieving education for all. The United Nations Convention on the Rights of Persons with Disabilities (CRPD) encourages the full integration of persons with disabilities in society. The CRPD specifically makes special reference to the importance of international development in addressing the rights of persons with disabilities. Currently, 182 countries have ratified the CRPD (United Nations, n.d.), which thereby carries the force of national law upon ratification.

Inclusive education as a late modernity reform is exemplified in the call for Education for all (Daniels & Garner, 2013). In Tanzania, the significance of inclusive education has been recognized at the national educational policy level (Kapinga, 2012). Mmbaga (2002) argued that there are clear indications of inclusive education elements in Nyerere's ideology of socialism and self-reliance as enshrined in the 1967 Education for Self-Reliance (ESR) policy, which still guides education legislation in Tanzania today. The culture of African socialism points towards a culture of inclusiveness (Mmbaga, 2002). Many of these norms and customs originate in indigenous customary education (Kisanji, 1998). The policy was based on the culture of people living together, working together, and generally helping each other out. The Education and Training Policy of 2014 states that the Government will increase the range of educational opportunities and training for equality for all social groups at all levels, including those children identified as having special needs (Vickerman & Maher, 2018). In the interest of the current study, inclusive education is defined as the creation of opportunities for students with visual impairments to benefit from instruction within the regular education environment.

There has been a significant expansion in enrollment of students with disabilities within Tanzanian secondary schools during the past decade. Statistics show that the net enrollment of students with disabilities in secondary schools increased from 716 in 2006 to 10,749 in 2018 (Tanzanian Ministry of Education and Vocational Training, 2011; Namirembe, 2019). The majority of students with disabilities in Tanzanian secondary schools have vision-

impairment; however, the number of children enrolled in secondary education was still constrained by the number of places available, with the direct costs of enrollment borne by households (Lewin, 2008). The leading type of disability in state secondary schools in Tanzania is poor vision (3,763 students) (Mulengeki, 2017). In the context of the current study, poor vision and visually impaired are both categorized as visual impairment. Combining students with poor vision, visual impairments, and students with albinism, a total of 5,458 students were enrolled to secondary schools in Tanzania in 2018¹. Many factors have contributed to this numerical increase, and some of these factors include the implementation of policies and the increased level of support available to students with disabilities (World Health Organization [WHO], 2019).

The attitudes towards people with disabilities were identified as stigma and these included stereotypes, wrong perceptions, and the use of abusive and discriminatory language (Iezzoni, 2011). When perpetuated, these behaviors may limit someone with a disability from being able to access educational services in comparison to a non-disabled person. According to Aunos and Feldman (2002), stigma and use of abusive language are mostly experienced by females with disabilities, and that this makes them more vulnerable than their male counterparts. Lyakurwa and Tungaraza (2013), in a study that investigated the attitudes of preservice teachers towards inclusive education in Tanzania, found that the majority of their participants (80.2%) had negative attitudes towards inclusive education, while 19.2% had positive attitudes. Using *t*-tests, the researchers revealed that the male participants were more positive than the females ($p = .04$) towards inclusive education. Furthermore, the participants who reported to have contact with people with disabilities were more positive towards inclusive education than those who had no contact.

Prevalence of Disability in Tanzania

The available data for the cause-specific prevalence of vision impairment and blindness are a fundamental basis of public health policies (Flaxman et al., 2017). The number of people affected by the common causes of vision loss has considerably augmented as a result of population increase and aging (Flaxman et al., 2017). According to the World Health Organization, 15% of the world's population experience some form of disability, and disability prevalence is higher for developing countries (WHO, 2019). Similarly, Tanzania's National Bureau of Statistics (2016) reported there being 4,094,663 persons with disabilities in Tanzania, of whom 2,362,294 (57.6%) are female and 1,732,369 (42.3%) are male. In terms of their level of education, 48% have never attended adult education or preschool, and 45.6% have only attended up to primary education. However, in terms of having attended secondary education, the figure drops to only 3.7%. Additionally, 1.2% have attended vocational education and training, and 0.54% have received a university education.

The available data has further indicated that in 2018, there were 4,257 students with poor vision and visual impairment (combined) enrolled in secondary schools in Tanzania (WHO, 2019), with visual impairment and poor vision the leading disabilities among students enrolled in secondary schools in Tanzania (Kamaghe, Luhanga, & Kisangiri, 2020). The 2008 Disability Survey revealed that people with disabilities in Tanzania were twice as likely not to have attended school. Overall, four out of 10 (41.7%) of all persons with disabilities aged 5

¹ Students with visual impairment, poor vision, or albinism, in the context of the current study, are broadly categorized as students with visual impairment.

years or above had received no schooling at all, compared with two out of 10 (23.5%) for non-disabled individuals (WHO, 2019).

Tanzania has implemented several laws, policies, and standards in order to protect the rights of people with disabilities (PWD). According to The Constitution of the United Republic of Tanzania of 1977², discrimination against PWD is illegal and prohibited. The constitutional prohibition aimed to eliminate the barriers related to disability so that all children and adults can receive the same opportunities to reach their full potential. Whilst these facets of legislation have served to improve lives and to provide equal access to secondary education for PWD, still, a significant number of students with disabilities do not attend any form of schooling in Tanzania. Previous studies have shown that parental education, socioeconomic status, and poor school infrastructure have each contributed to a situation of limited access to education being available to PWD.

Therefore, it is important to be able to understand the attitudes of students without disabilities towards the inclusion of peers with visual impairments in the regular schooling system. This is required because, despite the introduction of policies that promote inclusive education, it has not been sufficient to bring about the anticipated level of change in regular secondary schools. Some of the obstacles experienced by students with disabilities are associated with how best they can be accepted by their peers and interact meaningfully without fear or timidity due to stigmatization.

Consequently, the current study aimed to investigate the attitudes of students without disabilities towards the inclusion of peers with visual impairment in regular education in Tanzania. The study was guided by three hypotheses:

- There is no statistically significant difference between male and female students in their attitudes towards the inclusion of peers with visual impairments in regular secondary schools.
- The attitudes of non-disabled students do not differ significantly according to their class level.
- School type does not significantly influence the attitudes of non-disabled students towards the inclusion of peers with visual impairments.

Education for Persons with Visual Impairment in Tanzania

The provision of education services for children with visual impairment in Tanzania started in the 1950s when the Anglican Church opened a school for the blind, the Buigiri School, near Dodoma (Bagandanshwa, 1999, 2004; Kapinga, 2012; Karakoski & Ström, 2005; Mnyanyi, 2007, 2014). Despite lacking a specific policy on special education, attempts were made both by the Tanzanian government and non-governmental organizations such as religious and charitable organizations to provide education for children with visual impairments during the 1960s and early 1970s (Kapinga, 2012). Among the targets set for the 1981-1986 Tanzania Development Plan was the expansion of special education facilities for students with disabilities. In following this plan and through momentum from the International Year of the Disabled Person (IYDP) (1981), guidelines for special education were developed by the Tanzanian Ministry of Education and Culture, with funding from the Swedish International Development Agency (SIDA) (Smith, Polloway, Patton, Dowdy, &

² Bill of rights.

Doughty, 2015). The guidelines indicated priority areas in special education which involved the expansion of services for children with special needs (Smith et al., 2015). As a result of these guidelines, a number of schools for children with disabilities were subsequently established (Possi, 2018).

Tanzania developed a National Strategy on Inclusive Education 2018-2021 (United Republic of Tanzania, 2017). Strategy 3.1 aims at improving the school system in order to prevent and address causes of dropout and to ensure successful completion of basic education for all children, particularly those with special needs. The National Strategy for Inclusive Education is thus aimed at strengthening the education system so as to be able to provide, in an equitable manner, learning opportunities for all children, adolescents and youth, including vulnerable groups, and enable them to acquire the necessary knowledge and skills to be able to contribute to the transformation of Tanzania into a middle-income and semi-industrialized nation by 2025 (United Republic of Tanzania, 2017). The Salamanca Declaration (United Nations, 1994) states that the inclusion of students with disabilities in mainstream schools is the most effective way to fight discriminatory attitudes and to achieve the goal of education for all. The 2030 Agenda for Sustainable Development also stated that disability cannot be a reason or criteria for lack of access to any development program, or an obstacle to the realization of human rights protection (Olaiya, 2016; United Nations, 2016). The Sustainable Development Goals (SDGs) framework presented seven targets, with one target explicitly aimed at protecting the rights of persons with disabilities and the other six targets for persons in vulnerable situations. The SDGs address the essential development domains such as education, employment and decent work, social protection, resilience to and mitigation of disasters, sanitation, transport, and non-discrimination. For example, SDG 4, Target 4.5 is geared towards eliminating gender disparity in education, and to ensure equal access at all levels of education and vocational training for those who are considered vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations, by 2030 (Singh, 2016). Tanzania has recently started implementing an inclusive education strategy by designating and establishing units for students with visual or hearing impairment in certain regular secondary schools.

Attitudes Towards Inclusion of Students with Visual Impairments in Regular Schools

In order for an inclusive education approach to be successfully implemented, a number of stakeholders including teachers, students, and the school community itself must become fully involved. Lyakurwa and Tungaraza (2013) reported that teachers' attitudes have been considered as one of the major factors that guarantee success when non-disabled students are integrated with students with special educational needs. Avramidis and Norwich (2002) also noted that the successful implementation of any inclusive policy is largely dependent on educators being positive about it.

Several previous studies have reported that the attitudes of teachers, parents, and student peers towards the inclusion of students with disabilities are determined by the nature and severity of the disabilities. For example, Avramidis and Norwich (2002) and De Boer et al. (2011, 2012) revealed that the most positive attitudes were towards children with physical disabilities, followed by children with sensory disabilities and mental disabilities. Negative attitudes were more prevalent towards children with behavioral or emotional disorders. Bešić, Paleczek, Rossmann, Krammer, and Gasteiger-Klicpera (2018) also found that respondents' gender, educational level, and cultural capital influenced their attitudes

towards the inclusion of Austrian girls into a mainstream primary school than towards the inclusion of refugee girls.

Studies have also shown that various characteristics such as respondents' levels of education, gender, and age can influence attitudes towards certain groups (Kunovich & Deitelbaum, 2004; Semyonov, Rajiman, & Gorodzeiskyet, 2008). Research has also indicated that female respondents (De Boer et al., 2011) with a higher educational level (Kunovich & Deitelbaum, 2004; Semyonov et al., 2008) held more positive attitudes towards persons with disabilities and migrants. Furthermore, De Boer et al. (2012) reported that students in general hold neutral attitudes towards peers with visual impairments. In addition, several variables, namely: gender, age, experience with and knowledge about disabilities, and also parental influence were found to be relative to their attitudes. Similarly, Soulis et al. (2016) found that a number of factors including students' age, gender, their previous experience with people with disabilities, and information received from their parents regarding disabilities influenced the students' attitudes towards their classmates with disabilities.

A successful implementation of inclusive education in developing countries such as Tanzania is not an easy venture; it requires concerted efforts from different stakeholders. It has been argued that the success of inclusive education largely depends on teachers' attitudes, willingness, as well as their knowledge and skills required in attempting to involve children with disabilities in classroom teaching and learning (Sharma, Forlin, & Loreman, 2007). Attitudes towards inclusion are also related to experience with inclusive education. For example, De Boer, Pijl, and Minnaert (2011) showed that teachers with experience in inclusive education held more positive attitudes than those with less experience. A study conducted on the attitudes of teachers towards inclusive education in Finland, which included 824 classroom teachers, 575 subject teachers, and 365 special-education teachers, revealed that classroom teachers scored below the average, whilst the subject teachers significantly scored below the neutral midpoint of the scale. The special education teachers' mean scores, however, were found to be above the midpoint. Also, approximately 20% of the teachers were reported to be strong opponents of inclusion, whilst 8% were strong advocates (Saloviita, 2018). Thus, it is considered worth studying the attitudes of non-disabled students towards the inclusion of peers with visual impairments in regular education in Tanzania.

Methodology

The current study employed a quantitative research approach based on a case study design. According to Yin (2018), case studies may be either quantitative or qualitative in character when the focus of study is a contemporary as opposed to an entirely historical phenomena. A total of 283 non-disabled secondary school students participated in the study. Three regular public secondary schools, two of which enrolled students with visual impairment, low vision, and albinism took part. The schools were selected purposively and the participants randomly selected from Forms I, II, III, V, and VI. All non-disabled students were eligible to participate in the study within the selected schools. Of the three schools, one was co-education, and two schools were single sex (one for boys and the other for girls).

Close-ended questionnaires were administered to the study's respondents in the classroom, with help on hand from their teachers. The questionnaires were in Kiswahili. Ethical issues pertaining to data collection were observed by obtaining research clearance from the University of Dar es Salaam and also from the Regional Administrative Secretaries

for Ruvuma and Iringa. The heads of school from the three participant schools were approached and their consent taken prior to proceeding with the study. The respondents were adequately informed about the nature and structure of the study, and also assured that their participation in the study was on a voluntary basis.

Variables

The study investigated the attitudes of non-disabled secondary school students towards the inclusion of peers with visual impairment in regular secondary schools as an outcome (dependent) variable. This variable was measured using a set of 15 attitude items, each with 6-point, Likert-type scale responses. For each attitude item, the Likert-type scale categories were grouped into two levels of agreement, that is, “Disagree,” which involve *Strongly disagree* and *Disagree* and *Not sure but tend to disagree* and “Agree,” involving *Strongly agree*, *Agree*, and *Not sure but tend to agree*. Thus, the attitude variable was binary coded as “0” and “1” for Disagree and Agree, respectively. Students who disagreed with the attitude statement were regarded as having negative attitudes, whilst those who agreed with the attitude statement were regarded as having positive attitudes towards the inclusion of peers with visual impairments in regular secondary schools.

Non-disabled students who agreed with all 15 attitude questions were regarded as having good towards the inclusion of peers with visual impairments in regular secondary school. Whilst agreement with between 11 to 14 attitude questions were regarded as having a moderate attitude, agreement with 10 or less attitude questions as having a bad attitude. This grouping was similarly applied in the study of De Boer et al. (2012). Finally, the variable representing the attitude of non-disabled students towards the inclusion of peers with visual impairments in regular secondary school was constructed with three categories as follows:

$$\left\{ \begin{array}{l} \text{Attitude of non – disabled} \\ \text{students towards the inclusion} \\ \text{of peers with disability} \end{array} \right. = \left\{ \begin{array}{l} 0 = \text{bad attitude, if students agreed to almost 10 attitude question} \\ 1 = \text{moderate attitude, if students agreed btn 11–14 attitude question} \\ 2 = \text{good attitude, if students agreed to all 15 attitude question} \end{array} \right.$$

The explanatory variables investigated, with their categories shown in brackets, were (1) Students’ Gender (male/female), (2) Students’ Class (O-level/A-level), and (3) School Type (girls/boys/co-education). Other explanatory variables tested were; “Students with disabilities in school” (Yes/No), “Students with disabilities in classes” (Yes/No), and “Family members or relatives with hearing or visual impairment” (Yes/No).

Statistical Analysis

Data were coded and analyzed using Version 14 of Stata software. The statistical analysis commenced by describing the variables in the form of one-way tabulation (descriptively) in order to obtain the characteristics of the participant students. Since all variables in the study were categorical in nature, the chi-square test and exact chi-square test to cells with expected values of less than 5 was used in order to explain the relationship between an outcome variable and an explanatory variable. Only variables at 5% level of significance were taken into the multinomial logistic regression model. The use of the multinomial model was based on the nature of the categories according to the outcome variable, which were assumed to have no natural gathering, as similarly assumed by Exavery et al. (2013).

Findings

Background Characteristics of Students

A total of 283 non-disabled secondary school students participated in the current study. As presented in Table 1, the highest percentage (70.7%) of students were shown to be undertaking their A-levels (an advanced level of secondary education), whilst 29.3% were undertaking their O-levels (the ordinary level of secondary education). The majority (69.3%) of the participant students were female, with 30.7% male. With regards to the participants' school type, the single-sex girl's school accounted for the highest (46.3%) proportion of students, followed by the co-education school (35.3%). More than three quarters (85.5%) of the students stated that they had students with disabilities in their school, and 59% stated that they attended classes with students with disabilities. Of all participating students, 70% reported having family members or relatives with hearing or visual impairments.

Table 1. Characteristics of students in regular secondary schools

| <i>Variable</i> | <i>Category</i> | <i>Frequency (n)</i> | <i>Percentage (%)</i> |
|---|-----------------|----------------------|-----------------------|
| Overall | | 283 | 100.00 |
| Class | O-level | 83 | 29.3 |
| | A-level | 200 | 70.7 |
| Gender | Male | 87 | 30.7 |
| | Female | 196 | 69.3 |
| School type | Girls | 131 | 46.3 |
| | Boys | 52 | 18.4 |
| | Co-education | 100 | 35.3 |
| Students with disabilities in school | No | 41 | 14.5 |
| | Yes | 242 | 85.5 |
| Students with disabilities in classes | No | 116 | 41.0 |
| | Yes | 167 | 59.0 |
| Family members or relatives with hearing or visual impairment | Yes | 198 | 70.0 |
| | No | 85 | 30.0 |

Non-Disabled Students' Attitudes Towards Inclusion of Peers with Visual Impairments

Table 2 presents a bivariate analysis of factors associated with the attitude of non-disabled students towards the inclusion of peers with visual impairment in regular secondary schools. The overall distribution was the highest (54.1%) for those with moderate attitudes, and lowest (7.4%) for those with negative attitudes. Similarly, the percentage of students with good attitudes towards the inclusion of peers with visual impairment was significantly higher (48%) among A-level students compared to O-level students (15.7%, $p < .001$), and thus the null hypothesis of there being no association between student class and attitudes towards the inclusion of peers with visual impairments was rejected with a 5% level of significance.

Moreover, the students' Gender was determined to be dependent on their attitude towards the inclusion of students with disabilities, hence the null hypothesis of there being no association between students' gender and students' attitudes towards the inclusion of peers with visual impairments was rejected. Similarly, the percentage of students found to have a positive attitude towards the inclusion of peers with visual impairment was higher (42.9%) among the female students and lower (28.7%) among the male students ($p = .002$).

The attitudes of the non-disabled students towards the inclusion of peers with visual impairment was significantly associated with students' School Type ($p < .001$), such that the percentage for the Girls' school was highest (52.7%) among non-disabled students with positive attitudes towards the inclusion of peers with visual impairment in regular secondary schools, but the percentage dropped considerably to 38.5% and 20% for the Boy's school and the Co-education school, respectively. Also, the non-disabled students found to have moderate attitudes towards the inclusion of peers with visual impairment in regular secondary school was significantly higher (58.3%) among those who stated that there were students with disabilities in their school compared to those who stated that their school did not ($p = .003$).

Table 2. Distribution of non-disabled students' attitudes towards inclusion of peers with visual impairments

| Variables | Category | Students' attitude | | | p value |
|---------------------------------------|--------------|--------------------|-------------------|---------------|---------|
| | | Bad n (%) | Moderate n (%) | Good n (%) | |
| Overall attitude | | 21 (7.4) | 153 (54.1) | 109 (38.5) | - |
| Class | O-level | 9 (10.8) | 61 (73.5) | 13 (15.7) | < .001 |
| | A-level | 12 (6.0) | 92 (46.0) | 96 (48.0) | |
| Gender | Male | 2 (2.3) | 60 (69.0) | 25 (28.7) | .002 |
| | Female | 19 (9.7) | 93 (47.4) | 84 (42.9) | |
| School type | Girls | 11 (8.4) | 51 (38.9) | 69 (52.7) | < .001 |
| | Boys | 1 (1.9) | 31 (59.6) | 20 (38.5) | |
| | Co-education | 9 (9.0) | 71 (71.0) | 20 (20) | |
| Students with disabilities in school | No | 5 (12.2) | 12 (29.3) | 24 (58.5) | .003 |
| | Yes | 16 (6.6) | 141 (58.3) | 85 (35.1) | |
| Students with disabilities in classes | No | 8 (6.9) | 56 (48.3) | 52 (44.8) | .190 |
| | Yes | 13 (7.8) | 97 (58.1) | 57 (34.1) | |

| Variables | Category | Students' attitude | | | p value |
|--|----------|--------------------|-------------------|---------------|---------|
| | | Bad n (%) | Moderate n (%) | Good n (%) | |
| Staying with students with disabilities | Yes | 16 (10.5) | 81 (53.3) | 55 (36.2) | .092 |
| | No | 5 (3.8) | 72 (55.0) | 54 (41.2) | |
| Family members or relatives with visual impairment | Yes | 12 (6.0) | 112 (56.6) | 74 (37.4) | .269 |
| | No | 9 (10.6) | 41 (48.2) | 35 (41.2) | |

Multivariate Multinomial Logistic Regression Models

The findings in Table 3 identify the factors found to have affected the attitudes of non-disabled students towards the inclusion of student peers with visual impairment. Data from the multinomial logistic regression model presents the Relative Risk Ratio (RRR), *p*-value, and its associated 95% confidence interval (95% CI).

With regards to the students' class, the Relative Risk Ratio for the A-level students was shown to be significantly (7.28 times) more likely that they would have a moderate attitude towards the inclusion of peers with visual impairment in regular secondary school compared to the O-level students after adjusting for other covariates (RRR = 7.28, 95% CI 3.79 - 66.88, *p* = .049). Similarly, the RRR for non-disabled students with positive attitudes towards the inclusion of students with visual impairment in regular secondary schools was shown to be 18 times more likely among non-disabled A-level students compared to O-level students (RRR = 7.28, 95% CI 3.79 - 66.88, *p* = .014). The RRR of non-disabled female students was observed to be 1.2 times more likely to have a moderate attitude towards the inclusion of peers with visual impairments in regular secondary schools compared to non-disabled male students (RRR = 1.20, 95% CI 1.01 - 1.43, *p* = .03).

Table 3. Factors associated with non-disabled students' attitudes towards inclusion of peers with visual impairment

| Variable | Category | Moderate versus Bad attitudes | | | Good versus Bad attitudes | | |
|---------------|--------------|-------------------------------|--------------|----------------|---------------------------|--------------|----------------|
| | | RRR | 95% CI | <i>p</i> value | RRR | 95% CI | <i>p</i> value |
| Class | O-level | 1.00 | <i>ref</i> | | 1.00 | <i>ref</i> | |
| | A-level | 7.28 | 3.79 – 66.88 | .049 | 18.46 | 1.81 – 188.0 | .014 |
| Gender | Male | 1.00 | <i>ref</i> | | 1.00 | <i>ref</i> | |
| | Female | 1.20 | 1.01 – 1.43 | .030 | 0.14 | 0.01 – 1.57 | .112 |
| School type | Girls | 1.00 | <i>ref</i> | | 1.00 | <i>ref</i> | |
| | Boys | 1.26 | 0.04 – 36.5 | .894 | 1.05 | 0.03 – 35.5 | .978 |
| | Co-education | 2.83 | 0.28 – 28.7 | .380 | 1.21 | 0.12 – 12.8 | .871 |
| Students with | No | 1.00 | <i>ref</i> | | 1.00 | <i>ref</i> | |
| | Yes | 3.37 | 0.62 – | .160 | 1.84 | 0.35 – | .473 |

| | | | | | | | |
|--|-----|------|-------------|------|------|-------------|------|
| disabilities in school | | | 18.3 | | | 9.71 | |
| Students with disabilities in classes | No | 1.00 | <i>ref</i> | | 1.00 | <i>ref</i> | |
| | Yes | 0.91 | 0.24 – 3.50 | .892 | 1.05 | 0.26 – 4.20 | .947 |
| Family members or relatives with visual impairment | Yes | 1.00 | <i>ref</i> | | 1.00 | <i>ref</i> | |
| | No | 0.54 | 0.19 – 1.52 | .241 | 0.44 | 0.15 – 1.29 | .137 |

Discussion

The current study examined the attitudes of non-disabled students towards the inclusion of peers with visual impairments in regular secondary schools. The findings are discussed in the context of the study’s three hypotheses.

Differences in attitudes between male and female students towards the inclusion of peers with visual impairment in regular secondary schools were examined. Generally, the students’ attitudes were found to be dependent on their gender, and thus the null hypothesis of there being no difference between male and female students in their attitudes towards the inclusion of peers with visual impairment in regular secondary schools was rejected. Specifically, chi-square analysis showed that the percentage of students with positive attitudes towards the inclusion of peers with visual impairment was higher (42.9%) among non-disabled female students and lower (28.7%) among non-disabled male students. Similarly, upon controlling other covariates in the multinomial analysis, the findings showed that the attitudes of non-disabled students towards the inclusion of peers with visual impairment in regular secondary school was significantly and moderately higher among females compared to male students, respectively. Similarly, previous studies have also shown that males are more negative than females in this regard (Joseph & Lawler, 2017).

Regarding the students’ class level, it was observed through bivariate analysis that the majority (48%) of non-disabled A-level students held positive attitudes towards the inclusion of students with disabilities in regular secondary schools, and that the results were found to be statistically significant ($p < .001$). Moreover, students from the A-level class were shown to be significantly and dependently 7.28 and 18.46 times more likely to have moderate and good attitudes towards the inclusion of peers with visual impairment in regular secondary school compared to O-level students, respectively. These findings are similar to those reported by Bešić et al. (2018), Bešić, Paleczek, and Gasteiger-Klicpera (2018), and also Soulis, Georgiou, Dimoula, and Rapti (2016). Thus, the null hypothesis of there being no difference in the attitudes of non-disabled students towards the inclusion of peers with visual impairment among O-level and A-level students in regular secondary schools was rejected, with a 5% level of significance. The likely reasons for the A-level students having held more positive attitudes compared to O-level students is the vital role that education plays in transforming and enhancing the students and community in general. These findings were similar to those stated by Lyakurwa and Tungaraza (2013), who reported that participants who interact with people with a disability on a daily basis were more positive towards inclusive education than those who do not. The current study’s results suggest that

A-level students had acquired a certain level of knowledge and experience pertaining to inclusive education; more importantly, they had spent more time with students with disabilities, which may have helped in developing their positive attitudes. According to Maras and Brown (2000), contact with children with disabilities is very likely to have positive attitudes and outcomes.

The impact of School type on the attitudes of non-disabled students towards the inclusion of peers with disabilities in regular secondary school was also assessed. With regards to the bivariate analysis, a statistically significant ($p < .001$) association was found to exist between the students' attitudes towards the inclusion of peers with visual impairment and their school type, with the percentage of students holding positive attitudes towards the inclusion of peers with visual impairment observed to be higher (52.7%) for the girl's school and lower (20%) for the co-education school. Unfortunately, upon adjusting for other independent variables in the multinomial logistic regression model, it was observed that School type was independent of the attitudes towards the inclusion of peers with visual impairment in regular secondary schools. Thus, the current study did not find evidence to support the rejection of the null hypothesis that school type does not influence the attitudes of non-disabled students towards the inclusion of peers with visual impairment.

Conclusion and Recommendations

Overall, the attitudes of non-disabled students towards the inclusion of peers with visual impairments in the regular schools were found to be positive. The main significant factors that were identified to affect the non-disabled students' attitudes towards the inclusion of peers with visual impairment were their gender and class level. The results show that A-level students who spent more years in school had more positive attitudes towards the inclusion of students with visual impairments in regular secondary schools. Moreover, female students had more positive attitudes when compared to their male counterparts.

The observed significant factors for bad attitudes held by non-disabled students towards the inclusion of peers with visual impairment suggest a need for both short-term and long-term education programs on human kindness and equal access to social services including education. This was especially evident among male O-level students. The findings of the current study suggest that students in secondary schools require orientation on matters relating to disabilities. As such, further research is needed on the factors associated with attitudes in order to develop successful intervention programs grounded on fundamentally sound research findings. In addition, further research is needed in order to understand the impact of negative student attitudes held towards the inclusion of students with visual impairments in regular secondary schools.

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