Teachers’ perceptions on transition practices for students with visual impairments in Botswana
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Abstract: Postsecondary transition planning is a critical process for all students, including those with visual impairments. In Botswana, limited research has been conducted on teachers’ perceptions on the extent to which schools provide specific transition services to improve post-school outcomes of students with visual impairments (SWVIs). Hence, the purpose of this study was to explore senior secondary school teachers’ perceptions in Botswana on what secondary school practices improve the post-school outcomes of SWVIs. The study explored transition practices for SWVIs that were consistent or inconsistent with the literature. A quantitative research approach was adopted and 114 teachers participated in this study. Mann Whitney U and Kruskal Wallis tests were run to determine differences in teachers’ perceptions. The findings revealed that most transition practices for SWVIs that have been found from the literature to enhance post-school outcomes also improved post-school outcomes for these youths in Botswana.

Keywords: transition; employment; visual impairment; post-school outcomes; Botswana

1. Introduction
Every person’s life is characterized by a series of transitions across various life domains. Of the many transitions, a critically important transition domain for students with visual impairments...
SWVIs-low vision or blind) concerns education, particularly the transition from secondary to postsecondary education and/or employment. Halpern (1992) described postsecondary school transition as an unstable phase that youths pass through during the initial years after leaving high school and prepare to participate in different adult roles in the community. For SWVIs, it is critical to note that this challenging period may take longer than expected as noted in numerous studies regarding postsecondary transition outcomes (e.g., Reed & Curtis, 2011; Reed et al., 2011).

Historically, individuals with visual impairments have been identified as having a higher likelihood of experiencing high unemployment rates and limited engagement in postsecondary education than their counterparts without disabilities (Erickson et al., 2018). Youth with visual impairments continue to face low levels of employment and postsecondary education participation in both developed and developing nations. For example, in the United States, the American Foundation for the Blind (American Foundation for the Blind, 2020) reported that in 2017, 44.2% of individuals with visual impairment were employed than 79.4% of those without a disability. Moreover, the proportion of SWVIs reported to have a college degree or higher was 15.0% compared with 30.0% of those without a disability (American Foundation for the Blind, 2020). In Botswana, a 2015/16 survey showed the population estimate to be about 2.1 million, with about 56,000 (2.7%) individuals noted as having some form of disability (Statistics Botswana, 2018). The most prevalent disability identified was difficulty in seeing (37.9%). The total number of employed individuals with disability (including those with visual impairment) was estimated at 34.9%. Considering employment by education level, individuals with disability who completed postsecondary education were the least employed group (5.2%) compared to those who completed primary school education (31.1%), who contributed the highest proportion of the overall employed individuals with disabilities followed by junior secondary school (27.0%), and senior secondary school (5.5%). It is worth noting that primary school, junior secondary school, and senior secondary school are comparable to elementary school, middle school, and high school respectively in the United States. Of the total number of persons with a disability aged 6 years and above, 0.4% completed postsecondary education compared to 35.5%, 33.0%, 12.4%, and 4.0% who never attended school, completed primary education, junior secondary education, and senior secondary education respectively. Although these findings do not classify the employment and postsecondary education participation of individuals with disabilities by disability category, it is evident that these poor post-school outcomes warrant attention.

Several policy documents have been formulated in Botswana that play a critical role in ensuring educational access, equity, and quality of education for all students, including those with disabilities (i.e., Inclusive Policy on Education of 2011; Revised National Policy on Education [RNPE] of 1994, Tertiary Education Policy of 2008). Although these policies continue to be a frame of reference for addressing the educational needs of all learners across all education levels, little has been attained concerning the effective delivery of transition services and supports for students with disabilities (SWDs). While some research has been conducted in the area of postsecondary education and employment for transition-age youths with visual impairments regarding practices that influence employment outcomes (McDonnell, 2010a, 2010b, 2011; McDonnell & Cmar, 2019; McDonnell & O’Mally, 2012), limited research has been conducted in Botswana to examine teachers’ perceptions on whether these practices improve students’ post-school outcomes.

Generally, there is a paucity of research on secondary school transition planning and programs for SWVIs regarding what variables impact the post-school success (Dogbe, 2015; McDonnell & O’Mally, 2012). Teachers’ perceptions in Botswana have not been explored concerning what secondary school practices improve the post-school outcomes of SWVIs. The question on which practices are consistent or inconsistent with the literature remains unanswered. This is a major concern as teachers are required to play an imperative role in the transition process including working collaboratively with others to develop educational programs that are consistent with each student’s transition goals. Again, there is insufficient knowledge on whether practices that have been found to influence successful post-school outcomes in developed countries cut across culture and apply universally.
1.1. Conceptual framework and best transition practices for SWVIs

Despite the fact that numerous transition models for individuals with disabilities have been developed, Kohler’s Taxonomy for Transition Programming (KTTP) (Kohler, 1996) has been thoroughly investigated and adopted as an adequately and comprehensively researched transition model (Beamish et al., 2012; Morningstar & Mazzotti, 2014; Test et al., 2015). Although Kohler’s transition model has been widely accepted as a frame of reference for quality transition practices, some of its elements remain to be tested in developing countries like Botswana to evaluate which practices are applied and enhance the post-school outcomes of SWDs. Kohler’s transition model comprises of several elements such as student-focused planning, student development, program structure, family participation, and interagency collaboration. Teachers’ roles are an essential part of this transition model as they are required to facilitate transition activities in partnership with students’ families, the community, and external entities. Hence the adoption of this model to examine teachers’ perceptions on what practices improve the transition of SWVIs across the different transition components.

Student-focused planning entails developing an individualized education plan (IEP) for a learner as well as allowing the student to participate in the planning process as appropriate. Student-focused planning encompasses formulating goals and objectives for a student based on assessment results to inform the planning process, extent of student participation, decision-making, and monitoring a student’s progress (Kohler, 1996; Kohler et al., 2016). Student-focused planning activities are necessary to develop and reinforce students’ self-determination skills by giving them increased chances to exercise and use these skills. Evidence suggests that enhanced self-determination is a positive predictor of successful student outcomes, as well as academic competence, employment status, and engagement in higher education, and quality of life (Mazzotti et al., 2021. Rowe et al., 2013; Test et al., 2015). The student development component of Kohler’s transition model focuses on assessing and equipping students with academic, social, functional, as well as vocational skills to prepare them to overcome adult life challenges (Kohler, 1996). In this component, teachers are required to train students to become independent, engage in community participation, attain work-based skills and experiences, and gain appropriate academic skills. Specific to SWVIs, areas of the expanded core curriculum such as social skills, orientation and mobility (O&M), assistive technology (AT), and independent living are critical for effective transition (Lund & Cmar, 2019; Wolfe & Kelly, 2011).

Social skills for individuals with visual impairment who can initiate, develop, and maintain relationships with others have been found to positively affect their employment outcomes (Botsford, 2013; Gothberg et al., 2015; Rowe et al., 2013). Integrating independent living skills and social skills is an integral way for teachers to address the unique and specific needs of SWVIs. Research has also identified usage of braille and O&M skills as significantly linked to paid employment, contrary to working around the house, after exiting high school (Kelly & Wolfe, 2012; Wolfe & Kelly, 2011). Literature on O&M of SWVIs has mostly paid attention to how O&M influences securing of employment by individuals with visual impairment. For example, when investigating post-school outcomes for youths with visual impairments based on the National Longitudinal Transition Study 2 (NLTS2), Cmar (2015) found that high community travel scores corresponded to a significantly higher probability of acquiring employment within six years following exiting high school. These findings suggest the importance of good O&M skills concerning influencing post-secondary employment outcomes and the need to equip youth with visual impairments with requisite disability-specific skills.

Moreover, assistive technology continues to be critical in the learning and teaching of SWVIs. Using the NLTS2 data, significant relationships have been found between assistive technology use and postsecondary education enrollment and paid work (Wolfe & Kelly, 2011). Additionally, using assistive technology to give SWVIs access to printed materials leads to their academic and vocational success (Wolfe & Kelly, 2011; Zhou et al., 2013). Despite its equalizing effects between students with and without disabilities, assistive technology is not adequately utilized among
secondary school students and they lack knowledge of appropriate devices to meet their needs (Reed & Curtis, 2011). Also, work-based experiences or paid work and vocational training during secondary school have been found to be important predictors of successful employment outcomes for SWVIs (Connors et al., 2014; McDonnell, 2010a). McDonnell (2010a, 2011) found that the number of jobs that youths with visual impairments held as teenagers predicted their employment participation. This means that teachers need to consider school and work-based experiences into the education curriculum in helping to prepare students for successful post-school employment outcomes. Regrettably, students do not always have adequate opportunities to prepare for employment after secondary school (Lindstrom et al., 2011).

Educational competence has also been identified from available literature as linked to enhanced employment outcomes for transition-age youths with visual impairments. For example, improved math and verbal grades of high school SWVIs (Lund & Cmar, 2019; McDonnell, 2010a) and successful completion of higher education (McDonnell, 2011) were identified to predict students' post-school employment participation. Students’ transition programs also need to be evaluated and improved to ensure that their needs are consistently met (program structure). The role of teachers in this transition component is to facilitate effective transition practices and be able to elicit support across all levels of the student’s transition. Moreover, as a component of Kohler’s transition model, family involvement focuses on giving families of SWVIs a chance to play an active role in the transition planning process of their children (Kohler, 1996). This component has been noted as a postsecondary school predictor for success that should be taken into account during teachers’ preparation programs to equip them with requisite skills to engage and empower families in transition planning (Morningstar & Mazzotti, 2014; Rowe et al., 2013). When parents are empowered to participate in the transition planning process of their children, this can enhance their participation level, thereby encouraging and supporting students’ learning resulting in successful attainment of their transition goals (Doren et al., 2012; Wagner et al., 2012). Lastly, it is imperative for schools to develop collaborative relationships with external entities to improve students' post-school transition outcomes (Kohler, 1996; Mazzotti et al., 2021; Test et al., 2015). Interagency collaboration involves connecting students and their families to entities outside the school, with an understanding that students require training that goes beyond their schools' perimeters (Morgan et al., 2014). For example, teachers need to be committed to establish relationships with interagency professionals and entities so that SWVIs are linked to appropriate services and supports to attain positive internal and post-school outcomes.

1.2. Teachers' transition perceptions

Transition planning and programming for SWDs to engage fully in postsecondary education, work, community participation, and live independently are often left to the teachers. It is essential to explicitly understand teachers’ experiences and views regarding provision of supports and post-school transition services to SWDs so as to develop and implement more effective transition programs, with the aim to enhance students’ post-school outcomes (Bindels-de Heus et al., 2013; Canha et al., 2013; Oertle et al., 2013). However, it is regrettable that most transition research for youths with disabilities has paid particular attention to developed nations, thus focusing less on developing countries such as Botswana. Research has demonstrated the necessity for special education teachers to coordinate the transition process of SWDs. Unfortunately, Morningstar and Mazzotti (2014) noted the extent to which special educators were insufficiently trained to deliver transition services to SWDs as mandated by the Individuals with Disabilities Education Act (IDEA) of 2004. In their study, Benitez et al. (2009) examined over 500 secondary special educators in 31 states in an effort to obtain teachers’ perceptions on their proficiency regarding the delivery of transition supports and services. Specifically, teachers stated their beliefs on the degree to which they were ready to plan and deliver transition services, the degree of satisfaction concerning their training, and the frequency of participation in transition activities. The results of this study demonstrated that there were positive relationships between quality of teacher preparedness, teacher training, and how often teachers participated in transition planning and provision of services. These findings revealed that teachers’ perceptions of self-efficacy in
transition planning form part of factors associated with the special educator’s proficiency to deliver transition services.

Furthermore, it is essential that all transition team members have positive perceptions on postsecondary transition practices for effective delivery of transition services (Dogbe, 2015; Ookeditse, 2018; Xu et al., 2014). Thus, unless special educators and other team players have positive perceptions on facilitating transition planning, students are likely to experience poor post-school outcomes. However, research findings show that numerous secondary school teachers perceive themselves as insufficiently trained and not having requisite knowledge and skills to deliver transition services effectively (Morningstar & Benitez, 2013; Sprunger et al., 2018). Although some studies have demonstrated the extent to which teachers had foundational knowledge and understanding of the transition planning process, these teachers believed that they were less prepared to plan and provide transition services effectively (Curry & Jones, 2014; Johnson, 2014). Literature has suggested that while teachers may perceive transition planning as crucial, they may also struggle with incorporating self-determination instruction with the core curriculum as well as that the transition programs that they follow may not adequately prepare SWDs for postsecondary settings (Wallen, 2014). A serious concern among teachers often relates to how to effectively deliver transition services to SWDs given that regulations require them to teach in line with core curriculum standards. Some teachers perceive that rigorous standards do not allow sufficient time to direct instructional time on transition planning and programming. Effective planning and incorporation of transition services in a classroom calls for teachers to have an understanding that these services are meant to supplement instructional materials (Grossi & Cole, 2013). If teachers are to deliver quality instruction, they need to develop effective strategies to maintain a balance between instructional time dedicated to the core curriculum requirements and instruction time for transition skills, thus better preparing SWDs for post-school outcomes.

Numerous high school SWDs continue to receive special education services from teachers who may lack appropriate competencies to perform their transition planning roles effectively for sustainable post-school success. The frequency of performance of transition competencies for secondary teachers during delivery of transition services is critical to realizing their responsibilities to implement individualized programs for SWDs successfully. In one study, Johnson (2014) used a quantitative approach to examine the relationship between the perceptions of 80 secondary special education teachers concerning the frequency of performance of their transition competencies on annual transition services. An interesting finding was that significant differences were noted between reported levels of self-efficacy of secondary teachers and their frequency of performance of transition competencies across all transition components. The results of this study provide an important decision-making framework in transition competencies’ perceptions for the systems-change process concerning the special education headship system as well as the importance of special education teachers’ preparation in positively influencing teachers’ perceptions of self-efficacy as transition planning leaders. In another study, Sprunger et al. (2018) examined the perceptions of 182 special education practitioners (i.e., special education directors, assistant directors, and secondary special education teachers) regarding their knowledge, use, and effectiveness of research-based transition practices in Indiana and how they influenced students’ post-school outcomes. The researchers found that participants agreed about the knowledge, usage, and effectiveness of the sixteen transition practices noted by Test et al. (2009). Unfortunately, concerns were noted on program of study, interagency collaboration, work experiences, and employment study programs. Therefore, it is worth noting that research studies conducted among transition-age youths often take into account all disability classifications and only a few studies that focus on transition-age youths with visual impairments have paid particular attention to best practices from a policy point of view and insufficiently considering teachers’ perceptions. Reed and Curtis (2011) argued that although teachers are responsible for preparing SWVs for post-school outcomes, it is unfortunate that limited attention has been given to their perceptions regarding transition planning practices.
1.3. Purpose of study
It is indisputable that the role of teachers to guide and facilitate the movement of transition-age youths to post school settings cannot be overemphasized during elementary and early secondary years, with the hope that students attain higher proficiency as they participate in high school education (Morningstar & Mazzotti, 2014). If the perceptions of teachers who facilitate the delivery of transition services for secondary students are ignored, it becomes almost impossible to make appropriate adjustments to enhance students’ post-school outcomes (Morgan et al., 2014). Students’ post school outcomes are enhanced when evidence-based practices are implemented (Mazzotti et al., 2021; Sprunger et al., 2018). The paucity of research on how research-based practices have been perceived regarding improvement of post-school outcomes for students with low incidence disabilities by practitioners in developing countries like Botswana makes it critically important to address this concern. Hence, the purpose of this study was to explore senior secondary school teachers’ perceptions in Botswana on what secondary school practices improve the post-school outcomes of SWVIs. The study explored transition practices for SWVIs that were consistent or inconsistent with the literature. Two research questions were addressed in this study; (a) What are senior secondary teachers’ perceptions in Botswana on transition practices that have been found to improve the post-school outcomes of SWVIs? and (b) What are the differences between senior secondary general education teachers, special education teachers, and counseling teachers in Botswana on their perceptions of transition practices that have been found to improve the post-school outcomes of SWVIs?

2. Method

2.1. Research approach
The purpose of this study was to examine perceptions of senior secondary teachers in Botswana on what practices improve the post-school outcomes of SWVIs. A quantitative research approach was deemed appropriate to address the question at hand focusing on whether senior secondary teachers differed significantly from one another based on teacher position. A quantitative approach made it possible to examine the existence of a relationship on a variable, therefore enabling the gathering of information easily through a survey (Creswell, 2015).

2.2. Research setting
The research setting for this study was a senior secondary school (SSS) in Kgatleng region of Botswana. Teachers working in this school participated in the survey. The senior secondary school is located in a semi-urban area near the capital city Gaborone. Senior secondary school reflects the last two years of secondary education and is comparable to US high school. On average, senior secondary students are aged from 17 to 21. Students enrol for senior secondary education after successful completion of three years of junior secondary education, which is equitable to US middle school. Successful completion of senior secondary school is a doorway to postsecondary education and/or employment. Alternatively, those who do not perform well in final senior secondary examinations may opt to enroll for technical and vocational education.

2.3. Research design
This study used a survey design due to its feasibility in deducing generalizations from a sample to a population. A survey allows the researcher to reach conclusions on specific characteristics, beliefs, or perceptions of the population with respect to the sample (Creswell, 2012). Due to its anonymity, a survey is deemed more reliable and allows participants to respond honestly to questions in contrast to interviews (Cohen et al., 2004). Surveys have standardized measurements that enable researchers to compare participants’ data (Fowler, 2014). This study relied on a cross-sectional survey that allowed for data collection from senior secondary teachers to occur once. Paper surveys were prepared as the sole instrument for collecting data. Although online surveys would have been more cost effective, they could not be utilized due to electricity cuts and unreliable internet connectivity.
2.4. Participants
Senior secondary school teachers from one public SSS in Kgatleng region in Botswana participated in this study. The age range of participants was 20 to more than 60 years. These participants were responsible for teaching regular students alongside those with visual impairments in general education classrooms. Among these participants were general education teachers, special education teachers, and guidance and counseling teachers. General educators were responsible for providing instruction to all students in the general education classroom in core academic curriculum as well as implementing recommendations and techniques to teach the core curriculum to SWVIs. Special educators were responsible for provision of reasonable accommodations and collaborating with general educators to foster the teaching and learning of SWVIs. Lastly, counseling teachers were tasked with collaborating with both general and special educators as well as external agencies to provide appropriate educational supports to SWVIs. Census and purposive sampling methods were used to select the only SSS in Kgatleng. The reason for selecting this school was that it is the only SSS in the country that has specialized facilities, personnel, and a resource room to address the unique needs of SWVIs. According to Palys and Atchison (2008), purposive sampling enables a researcher to choose a sample based on specific characteristics and traits of a population as well as the purpose of a study. The target population for this study was 136 SSS teachers with only 114 completing the survey and resulting in a response rate of 83.8%.

2.5. Instrument
The development process of the survey instrument for this study relied on current literature concerning transition practices and principles for SWDs as well as incorporating feedback given by seven transition experts. The survey instrument comprised information on participants’ demographic variables, transition knowledge and beliefs, specific transition practices for SWVIs, transition coursework, and transition difficulties. Likert-type items ranging from strongly disagree to do not know (i.e., 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree, 5 = Do Not Know) were used in the survey. It is worth noting however, that questions in this study were answered based on the fourth section of the survey instrument which specifically sought teachers’ perceptions on what school practices improve post-school outcomes for SWVIs. This section of the survey contained ten items with a Cronbach’s alpha of .84. Cronbach’s alpha measures reliability of a set of survey items to determine internal consistency. According to Gay et al. (2012), Cronbach’s alpha levels equal to or greater than .80 represents a high level of internal consistency and reliability.

2.6. Data collection procedure
It was critical to conduct a pilot study on a convenient sample of 30 respondents before gathering data for the current study. A pilot study established the survey's user-friendliness. No data collected from the convenient sample during pilot testing were used in this study. The author applied for ethical approval to conduct the study from Ball State University IRB, where he was a doctoral candidate at the time. Permissions were also sought from the Ministry of Basic Education in Botswana, Kgatleng school region, and from the headmaster of the selected SSS. The researcher sent a letter explaining the purpose of the study to the school headmaster and inviting SSS teachers to participate in the study.

Data was collected for about three months. The headmaster of the chosen SSS was contacted via telephone and notified of the scheduled date and time for administering the survey a week earlier. On the survey administration day, teachers were reminded of the purpose of the study and issued informed consent forms to show their intention to or not to participate in the survey. Those who showed unwillingness to participate were thanked and dismissed contrary to those who chose to participate who were then given a paper survey and requested to read instructions carefully before finally completing the survey in 25 minutes. Completed surveys were collected and participants were thanked and dismissed.
2.7. Data analysis
The data that was collected was coded and SPSS Version 25 was used for analysis. At the beginning of the data analysis process, descriptive characteristics (e.g., frequencies, percentages, standard deviations, and means) were computed to describe all data. The demographic characteristics considered included participants’ gender, age, current position, education qualification, teaching experience, geographic location of school, and school region. The researcher’s intention was to further separate responses where participants indicated having no knowledge of an item and analyze them as descriptive data, considering that participants’ lack of knowledge of such items would warrant professional development activities as long as a 25% threshold was exceeded. These items would then be identified and coded as system missing. However, a true four-point scale was left to conduct inferential statistical data analysis with an alpha level set at .05 as none of the teachers selected “Do Not Know” on any item. To determine differences between general education teachers, special education teachers, and guidance and counseling teachers concerning predictors of transition for SWIs, a Kruskal-Wallis test of k groups was used. Whenever a significant difference between groups was noted, a follow-up test was conducted using a Mann Whitney U post hoc. Effect sizes were also calculated to establish the extent to which the independent variable influenced the dependent variable where significant differences were reported between teacher groups. Cohen’s w was used to report effect sizes when significant differences were noted from Kruskal-Wallis tests.

3. Results

3.1. Participants’ demographic characteristics
There were a total of 114 senior secondary school teachers who participated in this study. Table 1 shows that male teachers represented 50.9% of the sample, and most of the participants (26.3%) were aged between 31 and 40 years. There were almost equal proportions of participants who held a Bachelor’s degree (49.1%) and a Master’s degree (50.1%). The majority of teachers were general education teachers (83.3%) and about the same proportion of special education teachers (7.9%) and guidance and counseling teachers (8.8%) responded to the survey. Again, the majority of participants (24.6%) indicated that they had between 11 and 15 years of teaching experience. Most participants (95.6%) reported that they had a student with visual impairment in their class while only 7% indicated that they had never taught a student with visual impairment. The inclusion of eight teachers in this study who never taught SWVIs was because some teachers participated in the planning process and worked collaboratively with others to provide transition supports without necessarily being given direct opportunities to teach these students. This is especially true for a few special education teachers and guidance and counseling teachers who usually provide assistance to those who work directly with students. None of the participants reported having no knowledge of any of the transition items relating to practices that improve post-school outcomes for SWVIs. [Table 1 near here]

3.2. Teachers’ perceptions of transition practices for SWVIs by position
The average mean rating for participants on practices that help SWVIs to transition successfully to post-school outcomes was (M = 2.93), reflecting that participants somewhat agreed that the stated practices improved post-school outcomes of SWVIs in their school. Mean ratings for teachers’ perceptions of transition practices ranged from 1.11 to 3.82 (SDs = 0.41–1.071), with a mean difference of 2.71 between the maximum and minimum mean rankings (see Table 2). The mean difference and high overall mean score indicate that, generally, teachers somewhat agreed that the specified practices listed in Table 2 improved the post-school outcomes of SWVIs. Table 3 displays results from Kruskal-Wallis tests conducted by teacher position regarding teachers’ perceptions of practices that improve the post-school outcomes of SWVIs. Teachers’ perceptions differed significantly by position (p < .001) on whether training SWVIs in self-determination skills improved their post-school outcomes, with a large effect size. A Mann Whitney U post hoc test revealed that general education teachers agreed more than special education teachers that training of SWVIs in self-determination skills improved their post-school outcomes (z = −5.15, p
General education teachers agreed more than guidance and counseling teachers on this item ($z = -8.70, p < .001$). Lastly, special education teachers agreed more than guidance and counseling teachers on the same item ($z = -4.04, p < .001$). [Table 3 near here]

There were significant differences between participants ($p < .001$) on whether training SWVIs in the use of assistive technology improved their post-school outcomes, with a large effect size. A Mann Whitney U test demonstrated that general education teachers agreed more than special education teachers that training SWVIs in the use of assistive technology improved their post-school outcomes ($z = -6.73, p < .001$). General education teachers agreed more than guidance and counseling teachers that training SWVIs in the use of assistive technology improved their post-school outcomes ($z = -9.76, p < .001$). Furthermore, special education teachers agreed more than guidance and counseling teachers on this item ($z = -3.07, p < .01$).

In addition, teachers’ responses varied significantly ($p < .001$) on whether training SWVIs in orientation and mobility improved their post-school outcomes, and a large effect size was noted. General education teachers agreed more than special education teachers that training SWVIs in

**Table 1. Participants’ demographics (N = 114)**

| Characteristic            | n  | %  |
|--------------------------|----|----|
| Gender                   |    |    |
| Male                     | 58 | 50.9 |
| Female                   | 56 | 49.1 |
| Age                      |    |    |
| 20–30                    | 19 | 16.7 |
| 31–40                    | 30 | 26.3 |
| 41–50                    | 28 | 24.6 |
| 51–60                    | 25 | 21.9 |
| 61+                      | 12 | 10.5 |
| Highest Qualification    |    |    |
| Bachelor’s Degree        | 56 | 49.1 |
| Master’s Degree          | 58 | 50.1 |
| Doctoral Degree          | 0  | 0.0 |
| Current Position         |    |    |
| General Educator         | 95 | 83.3 |
| Special Educator         | 9  | 7.9 |
| Guidance and Counseling  | 10 | 8.8 |
| Teaching Experience      |    |    |
| 1–5 Years                | 14 | 12.3 |
| 6–10 Years               | 26 | 22.8 |
| 11–15 Years              | 28 | 24.6 |
| 16–20 Years              | 20 | 17.5 |
| 20+ Years                | 26 | 22.8 |
| Presence of SWVI         |    |    |
| Yes                      | 109| 95.6 |
| No                       | 5  | 4.4 |
| Ever Taught SWVI         |    |    |
| Yes                      | 106| 93.0 |
| No                       | 8  | 7.0 |

Note. Percentages represent data reported by category and totals.
Table 2. Overall mean ratings for participants’ perceptions of transition practices (N = 114)

| Perception                                                                 | M    | SD   |
|----------------------------------------------------------------------------|------|------|
| Training students in self-determination skills                           | 3.64 | 0.90 |
| Training of students in the use of assistive technology                  | 3.69 | 0.80 |
| Training of students in orientation and mobility skills                   | 3.76 | 0.60 |
| Training of students in social skills                                     | 3.82 | 0.47 |
| Providing students with unpaid work experiences within the school        | 1.20 | 0.61 |
| Providing students with unpaid work experiences outside the school       | 1.11 | 0.41 |
| Providing students with paid work opportunities within the school        | 1.14 | 0.42 |
| Providing students with paid work opportunities outside the school       | 3.49 | 1.07 |
| Providing students with vocational instruction                            | 3.65 | 0.82 |
| Training of students in academic skills                                   | 3.81 | 0.51 |

Table 3. Kruskal-Wallis analysis for participants’ perceptions of transition practices by teacher position (N = 114)

| Perception                                                                 | GET (n = 95) | SET (n = 9) | GCT (n = 10) | df | χ²   | w    |
|----------------------------------------------------------------------------|--------------|-------------|--------------|----|------|------|
| Training students in self-determination skills                           | 3.94 ± 0.35  | 3.44 ± 0.53 | 3.70 ± 0.35  | 9  | 2    | 75.78 0.82 |
| Training of students in the use of assistive technology                  | 3.99 ± 0.10  | 3.00 ± 1.00 | 3.85 ± 0.53  | 9  | 2    | 89.88 0.89 |
| Training of students in orientation and mobility skills                   | 3.97 ± 0.23  | 3.00 ± 1.00 | 3.85 ± 0.53  | 9  | 2    | 79.19 0.83 |
| Training of students in social skills                                     | 3.95 ± 0.37  | 3.44 ± 0.53 | 3.85 ± 0.53  | 10 | 2    | 76.76 0.82 |
| Providing students with unpaid work experiences within the school        | 1.11 ± 0.52  | 1.89 ± 1.05 | 1.85 ± 0.53  | 9  | 2    | 31.84 0.53 |
| Providing students with unpaid work experiences outside the school       | 1.06 ± 0.35  | 1.67 ± 0.71 | 1.85 ± 0.53  | 10 | 2    | 30.20 0.51 |
| Providing students with paid work opportunities within the school        | 1.06 ± 0.35  | 1.56 ± 0.53 | 1.85 ± 0.53  | 9  | 2    | 33.48 0.54 |
| Providing students with paid work opportunities outside the school       | 3.94 ± 0.35  | 1.56 ± 0.53 | 3.85 ± 0.53  | 10 | 2    | 98.40 0.93 |
| Providing students with vocational instruction                            | 3.96 ± 0.29  | 2.22 ± 0.67 | 1.85 ± 0.53  | 10 | 2    | 92.52 0.90 |
| Training of students in academic skills                                   | 3.98 ± 0.21  | 3.44 ± 0.53 | 2.50 ± 0.53  | 10 | 2    | 86.73 0.87 |

Note. GET = General Education Teachers, SET = Special Education Teachers, GAC = Guidance and Counselling Teachers

orientation and mobility skills improved their post-school outcomes (z = −6.12, p < .001). Likewise, general education teachers agreed more than guidance and counseling teachers on this item (z = −9.19, p < .001). On the item regarding whether training SWVIs in social skills improved their post-school outcomes, participants’ responses differed significantly (p < .001), and a large effect size was recorded. General education teachers had a higher agreement level than special education teachers (z = −5.95, p < .001) and guidance and counseling teachers (z = −9.00, p < .001) that training SWVIs in social skills improved their post-school outcomes.

Participants also differed significantly on whether providing SWVIs with unpaid work experiences within the school improved their post-school outcomes (p < .001). A large effect size was recorded with general education teachers disagreeing more than special education teachers on this item (z = −5.06, p < .001). Likewise, general education teachers showed more disagreement than guidance and counseling teachers on the same item (z = −4.67, p < .001). Moreover, participants differed significantly on whether providing SWVIs with unpaid work experiences outside the school improved their post-school outcomes (p < .001) with a large effect size noted. General education teachers disagreed more than special education teachers that providing SWVIs with unpaid work experiences outside the school improved their post-school outcomes (z = −5.18, p < .001). Again, special education teachers disagreed less than guidance and counseling teachers on this item (z = −2.65, p < .05).
Participants differed significantly on whether providing SWVIs with paid work opportunities within the school improved their post-school outcomes (p < .001). A large effect size was observed and general education teachers disagreed more than special education teachers on this statement (z = −5.15, p < .001). Likewise, general education teachers showed more disagreement than guidance and counseling teachers on the same item (z = −4.84, p < .001). Significant differences were also found on whether providing SWVIs with paid work opportunities outside the school improved their post-school outcomes (p < .001), and a large effect size was obtained. General education teachers agreed more than special education teachers (z = −8.76, p < .001) and guidance and counseling teachers (z = −9.08, p < .001) that providing SWVIs with paid work opportunities outside the school improved their post-school outcomes. Again, special education teachers disagreed less than guidance and counseling teachers on this item (z = −2.67, p < .05).

Teachers differed significantly concerning whether providing SWVIs with vocational instruction improved their post-school outcomes (p < .001), with a large effect size observed. General education teachers agreed more than special education teachers (z = −8.40, p < .001) and guidance and counseling teachers (z = −9.19, p < .001) that providing SWVIs with vocational instruction improved their post-school outcomes. Finally, participants differed significantly on whether training SWVIs in academic skills improved their post-school outcomes (p < .001), with a large effect size noted. General education teachers agreed more than special education teachers (z = −6.60, p < .001) and guidance and counseling teachers on this item (z = −9.61, p < .001). However, special education teachers agreed more than guidance and counseling teachers on this item (z = −2.92, p < .01).

4. Discussion
The current study examined perceptions of senior secondary teachers in Botswana on what practices improve the post-school outcomes of SWVIs. Generally, special education teachers, general education teachers, and guidance and counseling teachers agreed that training SWVIs in self-determination, use of assistive technology, orientation and mobility, social skills, vocational instruction, and academic skills improved their post-school outcomes. The three groups of teachers agreed that providing SWVIs with paid work opportunities outside the school improved their post-school outcomes. While participation in secondary academic programs has been noted to positively influence postsecondary education engagement, transition programs that take into consideration both academic and work skills hold the potential for improved post-school outcomes (Grossi & Cole, 2013). The results of the current study corroborate with available literature as numerous studies have acknowledged the importance of training SWVIs in areas of the expanded core curriculum such as social skills, orientation and mobility, assistive technology, self-determination to promote independent living, thus improving post-school outcomes (Lund & Cmar, 2019; Wolffe & Kelly, 2011).

Training SWVIs in social skills has been noted to positively influence employment outcomes (Botsford, 2013; Gothberg et al., 2015; Rowe et al., 2013). Recent research findings demonstrate the necessity of equipping SWDs with various skills to promote independent living and self-care. Despite the fact that currently the education agenda does not adequately focus on providing life skill instruction (Lindstrom et al., 2011; Morningstar & Benitez, 2013), such instruction is particularly imperative for SWDs given that there is a relationship between acquisition of life skills and quality of life (Lindstrom et al., 2011). Research has demonstrated that attainment of academic skills alone is not adequate for enhancing the post-school outcomes of SWDs (Test et al., 2015). Despite the fact that teachers agreed that training SWVIs in orientation and mobility skills improved their post-school outcomes, Habulezi and Phasha (2012) contended that there was insufficient knowledge among teachers concerning delivery of this service to SWVIs in Botswana. However, providing SWVIs with instruction in self-determination, social skills, orientation and mobility, assistive technology, and academic skills to improve students’ post-school outcomes as revealed from the current study is consistent with findings from studies conducted in developed countries (e.g., Cmar, 2015; Gothberg et al., 2015; McDonnell, 2010a, 2011; Wolffe & Kelly, 2011).
Overall, the three groups of teachers in this study disagreed that providing SWVIs with unpaid work experiences within or outside the school as well as paid work opportunities within the school improved their post-school outcomes. Unfortunately, these findings are inconsistent with existing literature. Morningstar and Mazziotti (2014) indicated that SWDs needed to be provided with both unpaid and paid work opportunities within or outside school to experience improved post-school outcomes. It may be that unpaid work opportunities are less motivating to students and thereby treated with less seriousness. Again, paid work opportunities within schools may be less interesting as students may be too familiar with their school surroundings, thus not playing a significant role in preparing SWVIs for successful post-school outcomes. Brooke et al. (2009) argued that when work opportunities are centered around community-integrated job environments as a critical objective, the pros of work for youths with disabilities in wages, the potential for gain, and the status and self-determination emanating from gainful employment are realized. Although the results of the current study suggest that participants agreed that providing paid work opportunities to SWVIs outside the school improved post-school outcomes, this is not sufficient to prepare students for post-school employment. The finding that the three teacher groups agreed that providing SWVIs with vocational instruction improved their post-school outcomes is surprising since there is limited vocational coursework in senior secondary curriculum. Despite that vocational education has been found to prepare SWVIs for gainful employment (Connors et al., 2014; McDonnell, 2010a), academic education is highly emphasized in Botswana’s secondary schools.

It is not surprising that special education teachers agreed more than guidance and counseling teachers that training SWVIs in self-determination, assistive technology, and academic skills improved their post-school outcomes. Training students in disability-specific skills is often left to special educators who are knowledgeable of providing reasonable accommodations to SWDs. Consistent with literature, special education teachers can play a leading role in the transition planning process of SWDs if they are more aware of transition practices as well as how these practices impact students’ post-school outcomes. Moreover, guidance and counseling teachers disagreed more than special education teachers that unpaid and paid work experiences outside the school improved SWVIs’ post-school outcomes. A possible explanation may be that since guidance and counseling teachers are responsible for placement of students in external settings to gain work experiences, they may be much familiar with the effects of work opportunities on post-school outcomes. Again, it is worth noting that SWDs in Botswana are exposed to limited work opportunities outside school, hence the reason why special education teachers and guidance and counseling teachers disagreed that paid and unpaid work opportunities outside the school improved post-school outcomes of SWVIs.

Moreover, it is also worth noting that as service professionals, counselors and special educators share a lot in common, including among others the role of empowering SWDs to be self-sufficient and independent (Ookeditse, 2018). Commonalities between these professionals may partly explain why there were no significant differences between these groups for most items concerning practices for improving post-school outcomes of SWVIs. In Botswana, despite the fact that special education teachers are required to coordinate education programs for SWDs, inadequate coordination and collaboration have been observed between special educators and other professionals (Dart, 2007; Dart et al., 2002; Kisanji, 2003). This may help to explain the knowledge and perception disparities between special education and general education teachers, as general educators’ understanding of transition practices and principles may be limited, thereby slightly differing from special educators who learn about transition as a critical component of their teacher-training programs. The lack of collaboration or strong partnerships between special educators and other professionals calls for effective training of teachers in transition practices and continuous provision of technical support for secondary schools as Morningstar and Benitez (2013) indicated. The literature acknowledges the importance of collaboration among special education teachers and other professionals within or outside the school. It is critical for schools to establish collaborative partnerships among teachers and other professionals and to strive toward transition service coordination. The collaborative partnerships thus developed are likely to prompt the need
to use student and family centered approaches to enhance participation in the transition process (Kohler, 1996; Morningstar & Mazzotti, 2014).

Finally, it can be deduced from the results of this study that senior secondary teachers held positive perceptions that most transition practices for SWVIs that have been found from the literature to enhance post-school outcomes also improved post-school outcomes for these youths in Botswana. According to this study’s participants, the perception that training of SWVIs in social skills improved their post-school outcomes was rated highest of all the evidence-based transition practices. Participants disagreed that providing unpaid work opportunities for SWVIs outside the school improved their post-school outcomes and this item was rated lowest. Again, participants exhibited diverse views and varying perceptions regarding the degree to which specific transition practices improved the post-school outcomes of SWVIs. The fact that none of the participants selected “Do Not Know” as their response to any of the survey items suggests that they did not lack knowledge of transition practices that improve the post-school outcomes of SWVIs. However, at a period where Botswana is striving toward effective implementation of the Inclusive Education Policy in schools, it may be critical to consider improving in-service programs and professional development activities to upgrade teachers’ transition knowledge, as transition literature keeps on evolving.

4.1. Limitations

The sample of this study comprised of unequal group sizes of participants by teacher position and all other demographic variables. This may be problematic in the sense that relatively large group differences may have led to some general reduction of power even though the sample size was reasonably large. Thus, loss of power may minimize the generalizability of the results to the population of SWIs in Botswana. However, non-parametric tests were utilized to minimize the effects of unequal group sizes on the findings as they do not rely on the assumptions of normality and equality of variances concerning unequal and small sample sizes. Although random sampling is often considered a better procedure for selecting participants to enhance generalizability, the use of purposeful and census sampling methods were more viable given that there is only one senior secondary school in Botswana that enrolls SWVIs. Another limitation relates to the inclusion of data from eight participants who never taught SWVIs and the possibility that teachers’ perceptions measured in this study may not align with the actual implementation of transition practices for SWVIs. Lastly, this study completely relied on quantitative research methods. Thus, no qualitative data were gathered despite the fact that this kind of data usually helps to give meaningful explanations to notable trends from quantitative data. Klingner and Boardman (2011) defended the importance of conducting a study utilizing a mixed methods approach due to its ability to increase the breadth and depth of results, thereby allowing researchers to provide meaningful justifications to their findings and to improve potential readers’ understanding of findings. This calls for consideration of collecting qualitative data in addition to quantitative data to provide plausible explanations to the findings. Additionally, in future research data should be gathered from SWVIs and school administrators who are responsible for running the school affairs to appreciate their views.

4.2. Implications for practice

Based on the current postsecondary transition state in Botswana, it is critical to consider developing and enacting a national transition legislation for SWDs. Such a legal mandate will be crucial in providing clear guidelines and procedures for effective delivery of transition services. In the absence of clear direction on the delivery of transition services, SWDS are likely to experience unsatisfactory post-school outcomes. It is therefore crucial that the government of Botswana prioritizes supporting the needs of individuals with disabilities in the National Transformation Strategy. Government efforts need to be combined with collaborations with other important stakeholders such as the private sector, parastatals, Non-Governmental Organizations (NGOs) for individuals with disabilities, political and religious leaders, as well as people with disabilities and their families. Furthermore, teacher training programs in colleges and universities should be reviewed to improve or introduce comprehensive transition courses as
well as introduce more meaningful professional development activities that would enhance teachers’ knowledge and equip them with requisite skills to facilitate the effective delivery of transition services for SWDs.

The degree of transition support for SWVs should be guided by clearly developed transition plans that consider students’ needs, interests, and priorities. As transition regularly evolves, it is essential that teachers become creative and innovative to come up with new strategies for overcoming challenges associated with poor delivery of postsecondary transition services. Considering a decline of the economy of Botswana due to the Corona Virus (COVID-19), the government’s fight against the HIV/AIDS pandemic, and many other political challenges, it may become more difficult to channel financial resources into special education. However, reducing stigma and discrimination relating to disability takes educating people to change their attitudes towards persons with disabilities, which can be a starting point aimed at creating equity among all persons across the lifespan—an important area on which the National Disability Coordinating Office could assume an active role while awaiting the recovery of the economy.

4.3. Conclusion
The findings of this study suggest that teachers perceived that most specific practices for SWVs improved their post-school outcomes and that there were varying levels of agreement or disagreement among teachers by position. It is therefore imperative to consider further research encompassing gathering of qualitative data to find plausible explanations for observed trends to clearly establish why teachers’ perceptions differ between the three participants’ groups. Again, a study that examines the level of implementation of transition practices for SWVs is necessary to explicitly determine the extent to which teachers’ perceptions align with the actual implementation of transition practices. The current study also recommends that teachers call for appropriate, comprehensive, and effective transition programs and services for SWDs. Additional research needs to be conducted regarding teachers’ knowledge of, utilization of, and effectiveness of research-based transition practices in Botswana. Research findings from developed countries like the United States will assist with strategies to improve post-school outcomes for SWDs.

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