

Influence of Tactual Orientation Skills on the Attainment of Self-Autonomy of Persons with Severe Visual Impairments in the English-Speaking (North West and South West) Regions, Cameroon

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ABSTRACT

One outcome of vision loss in persons with severe visual impairments is that they are forced to develop compensatory skills especially communication skills that can give them some self-autonomy in carrying out their education, career and meet up with life goals. Tactual orientation skills amongst others are communications skills needed to give them some level of self-autonomy. This study therefore aimed at investigating the influence of tactual orientation skills on the attainment of self-autonomy of persons with severe visual impairments in the North West and South West Regions of Cameroon. The mixed methods sequential explanatory design was adopted for the study. Data were collected from a sample of 286 persons with severe visual impairments. Data were collected with seven items on a Likert scale questionnaire and an interview guide for persons with severe visual impairments. Quantitative data were analysed descriptively using frequency distributions, percentages, and mean scores while the Spearman's rho correlation test was used to verify hypothesis and make inferences. Qualitative data were analysed thematically with the aid of themes-groundings-quotations. Findings showed that Tactual orientation skills ($R = 0.713$) significantly and positively influenced the attainment of self-autonomy in persons with severe visual impairments. Descriptive findings also showed that the acquisition of tactual orientation skills gives persons with severe visual impairments self-autonomy in carrying out their daily activities, education, work and professional life. This implies that with these compensatory tactual orientation skills, they are capable of carrying out their lives with little or no support from those around them. It was recommended that, the state and parents should make available the necessary assistance needed by persons with severe visual impairments to develop their compensatory tactual orientation skills needed for the attainment of self-autonomy.

KEYWORDS: *Communication skills, Severe Visual Impairments, Self-Autonomy, Persons With Severe Visual Impairments.*

Introduction

More than 90% of the world's 161 million blind and severely visually impaired persons live in developing communities. Regardless of the importance of literacy to employment, social well-being, health and self-autonomy, it is estimated that the literacy rate of the population of persons with severe visual impairments is still below 3% (Kalra, 2009). According to the United Nation

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Convention on the Rights of Persons with Disabilities (2007), there is need to recognize different communication skills, means of social inclusion for persons with severe visual impairments and also boost opportunities for them. To achieve all the above, all governments on the globe are expected to put more concern on ways to reinforce training on the compensatory skill accomplishment in abilities as a theme for the persons with severe visual impairments; because the absence of communication skills could have an effect on their self-autonomy, self-achievement skills, and talents consequently leading to lose employment, education and career opportunities. Obtaining essential and empowering life skills like communication skills in general and tactual orientation skills in particular, are of great importance to the education, collective and financial self-autonomy of persons with severe visual impairments (Huebner and Wiener 2005, p. 579).

Looking at some countries in Africa, Cameroon inclusive, the education of persons with disabilities in general and persons with severe visual impairments (PWSVI) in particular is not new as it dates back to several hundreds of years (Adima 1989), (Ozaji and Menssa, 1993). According to them, the trend of special education developed within the culture of the people though their perception of education of persons with severe visual impairments was seen negative due to their belief that “disability was inability”. Therefore, the traditional educational system existed in these countries, before the arrival of the present form and was fully integrated since both the impaired and the non-impaired were educated together in self-reliance skills such as art, music, physical education, orientation and mobility, laws governing the society among others. Those who were in charge of teaching the skills were immediate family members and their relatives.

Learning self-autonomous skills is one of the most important tasks for all humans that will help them automate their lives, make positive and healthy choices (Medeiros and Jose, 2013). This is different with persons with severe visual impairments as they need to learn compensatory skills to be able to carry out their daily lives, educational, and professional lives independently. The importance of these self-autonomous skills is that, it gives persons with severe visual impairments the ability to express self in writing, receive information independently from their environment, helps them get supply of information of known as well as unknown environment through touch, helps them independently get input on spatial field and by using allocentric perception of the surrounding space, they navigate their environment with little or no help. Orientation and mobility skills are also important self-autonomous skills in that, they use the skills to, safely and independently navigate their environment with little or no help.

The Problem

With lack of sight, a person with visual impairments finds it difficult to live self-autonomous life like the sighted peers hence, constantly depending on people, families and friends around them for successful living. This places a burden on family members and those around them who may not be available all the time. Persons with severe visual impairments therefore need self-autonomy which is that ability to independently carry out daily living activities, education and professional life. Lack of self-autonomy will mean the inability to independently express self in writing, receive information from the environment, interact with those around them and navigate within their environment. Communication skills among others factors may have a significant role to play on the self-autonomy of persons with severe visual impairments, given that a gap is created by vision impairments. Wiemann (2003) summarises this in his work by saying: “Our ability to create and sustain our social world depends largely on how well we communicate”. Yet, not much attention has been paid by research on this aspect in the English-Speaking (North West and South West) Regions of Cameroon. The lack of studies on the self-autonomy of persons with severe visual impairments, communications skills, and the lack of concern for their quality of life highlight the importance of scientific research aimed at enabling this population to live a full and autonomous life. The self-autonomy of persons with severe visual impairments through acquisition of communication skills among other factors may

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therefore, overcome the impact and deficit caused by the visual impairment as well as the social stigma associated with the condition. It is against this backdrop that the study aimed at investigating the influence of tactual orientation skills on self-autonomy of persons with severe visual impairments in the English Speaking (North West and South West) Regions of Cameroon. It was also hypothesized that: the acquisition of tactual orientation skills has no significant Influence on Self autonomy of persons with severe visual impairments in the English Speaking Regions of Cameroon.

Theoretical consideration

The self-efficacy theory

Albert Bandura's self-efficacy theory postulates that self-efficacy is a person's belief in the ability to succeed in specific situations or accomplish a task. This belief therefore tends to influence the choices people make and the options of action they follow in life (Bandura, 1986). He takes into consideration how people see themselves or how they judge their own level of competency in the process of learning and the larger society. Self-efficacy characterises the personal perception of external social aspects where by a person who believes he or she can perform well in a skill, is more likely to always take difficult tasks as a challenge to take and fulfil rather than something to avoid. Therefore, in relations to the study, for persons with severe visual impairments to automate their lives successfully, they need to have positive self-beliefs in the communication skills they have acquired, either formally through learning or informally through interaction.. Therefore, they must improve on their self-efficacy, which is a vital aspect of self-autonomy. According to Bandura (1997), self-efficacy beliefs affect every aspect of people's lives, their ability to think productively, pessimistically or optimistically, to motivate themselves and persevere in the face of difficulties; make life choices among others. Self- efficacy can be formed by interpreting information from result that emerges out of one's previous performance or mastery experience. Thus, persons with severe visual impairments must be encouraged especially by those around them, so that they develop strong self-efficacy belief if they must perform well in the communication skills they have for their self-autonomy. Their self-efficacy may be derived from how well they accomplish certain task they are presented with at a particular point in time and when they successfully accomplish the task it is believed according to Bandura raises their mastery expectation while failure lowers it.

Secondly, when others around them undertake feared activities without negative consequences they turn to learn and copy creating more positive expectations in them. In addition, orientation in the skills needed such as tactile skills may also go a long way to give persons with severe visual impairment that positive self-efficacy. Furthermore, persons with severe visual impairment can be led to believe they can cope successfully, and develop positive self-belief in their ability to carry out certain task independently by verbally persuading or encouraging them in the task. It is also believed according to Bandura that high with calm or low stimulation of individuals in performing a task, success is more likely.

This theory is relevant to the study in that self-efficacy makes a significant contribution to predicting performance success among other variables in learning and teaching. This means that the more efficacious and autonomous persons with severe visual impairments are, the more successful they become in the process of learning skills such as tactual orientation meant for successful daily living, education and professional life. Therefore, self-efficacy of persons with severe visual impairments will enhance autonomy supportive environments for them.

Research Methodology

The Study Area

This study was carried out in North West and South West Regions, Cameroon particularly in Buea and Bamenda respectively. The South West Region is divided into six administrative Divisions,

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namely: Fako, Koupé-Manengouba, Lebialem, Manyu, Meme, and Ndian Divisions. The capital of Fako is Limbe. There are seven Sub-Divisions in the Fako Division namely; Buea, Tiko, Muyuka, Limbe I, II & III, and Idenau Sub Divisions. The division is bounded in the South and South West by the Atlantic Ocean; to the west by Ndian Division; to the East by the Littoral region and to the North by Meme Division (Presidency of the republic of Cameroon, 2014). The choice of Buea Sub-Division and the selection of Association for the Blind Buea for this study is based on the rich socio-cultural background with multiplicity of educational institutions; inclusive schools for persons with disabilities and the fact that it has the first ever school for person with visual impairments (Bulu Centre Buea) that gives us a good number of persons living with visual impairments as many come from other regions to study in these institutions. The cultural diversity is also accompanied by a good climatic condition suitable for studies by persons with disability visual impairments inclusive, despite the low academic attainment of persons with disability. Bamenda on the other hand, is the capital of the North West Region with the administrative quarter known as “Up Station” found on the hill top at the entrance of the town. Bamenda population is estimated at 1.702.559 inhabitants on a surface area of 17.300km² covering 07 divisions and a population density of 98.4inhabitants/km². The region is a smooth continuity of the western highlands with natural beauties such as: green landscape, chiefdoms and waterfalls which qualify the province as a high traffic tourist site (National Institute of Statistics, 2001).

Research Methods

The mixed methods sequential explanatory design was adopted for this study. Mixed methods is an approach in which quantitative and qualitative data are collected simultaneously or one type of data either quantitative or qualitative maybe collected first followed by the other (Creswell, 2013). According to the author one method may dominate. In the study, the quantitative data was collected first followed by and qualitative and the quantitative method denominated. This design is considered useful for the study because it entails a more complete understanding of the research problem, questions and hypotheses by explaining quantitative results with a qualitative follow-up data collection and analysis.

In this study, the population was made up of persons with severe visual impairments in North West and South West Regions, Cameroon. The target population comprised of persons with severe visual impairments from the North West and South West Regions, Cameroon, with the number of registered persons with severe visual impairments in these two regions estimated at 1,127 according to the statistics from North West Regional Delegations of Social Affairs (2021) and the CBCHS-CBR Program Reports (2021), and the South West Regional Delegation of Social Affairs and the Coordination Unit of the Associations of PWDS South West (2021). That is, 709 persons with severe visual impairments from North West Region and 418 registered from South-West Region, Cameroon.

In the two regions, there are centres where persons with severe visual impairments; teachers and students respectively are trained. Though they acquire the communication skills in these centres and use them in their daily living, the researcher targeted associations of persons with severe visual impairments from these two regions. The reason for targeting them in their associations was because due to the crisis, some of the centres have stopped functioning. Paying attention to their associations also eased accessibility of the participants. Hence, the accessible population was made up of persons with severe visual impairments in associations of persons with severe visual impairments from the two regions.

The sample size was determined using the Krejcie and Morgan’s table of sample size estimation to be 315. Out of the total 315 persons with severe visual impairments that constitutes the sample size of the study, 198 will be sampled from North West and 117 from the South-West region. However, in order to ensure that the minimum sample of 315 persons with severe visual impairments is

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attained, a 10% error term is used, meaning that there is an addition of 31 participants. This therefore means that, the lower bound of the sample size is 315 while the upper bound is 346. It therefore implies that for the findings of this study to be generalized on the entire community of persons with severe visual impairments, at least 315 copies of the questionnaire must be administered and retrieved. In order to avoid bias in the distribution of the total sample size per region, the simple proportion technique was used whereby; the total number of persons with severe visual impairments per region (n) was multiplied by the total sample size of (s) and then divided by the total number of persons with severe visual impairments in both regions (N).

The sampling techniques used in the study were the purposive and snowball techniques. The purposive technique involves the handpicking of participants to be used as the sample on the basis of their typicality and the typicality was that all the subjects are visually impaired.

Triangulation of instruments was used to conduct this study. In this regard, structured questionnaires for persons with severe visual impairments and an in-depth interview with semi structured open-ended questions were used in collecting data. To collect quantitative data, a four (04) point likert scale questionnaire was used. The questionnaire comprised of closed ended statements. For each of the statements, respondents were required to state how they feel about each item. That is, stating whether they were able to carry on their tasks Independently (I), with Instructions needed (IN), with Temporal Assistance (TA), and with Long term assistance (LTA). The option of neutral or indifferent in the Likert scale was dropped since the purposive sampling technique was used, and also because the participants constituted a homogenous group, that is, persons with severe visual impairments, thus they can only agree or disagree to an opinion, but cannot stay indifferent.

The qualitative and quantitative methods were used in analyzing the data for the study. Data for analysis were entered using EpiData version 3.1 and analysed using the Statistical Package for Social Science (SPSS) version 25.0 for windows (IBM Inc.2017). The data were cleaned-up to eliminate possible data entering errors using the exploratory statistics which is an integrated part of the data clean-up process. By so doing, the variables were explored to identify questionable entries, inconsistency in responses and outliers that could possible affect the findings of the study. Frequency analysis was used for categorical variables as to identify invalid entries and missing values. In the coding process, the responses were assigned scores based on the wordings of the items, that is, positively worded items were coded progressively and the negatively worded items were coded in a reverse manner.

To clear off outliers which are extremely low or high values from the data, the Boxplots technique was used because of its efficiency in sorting of out outliers and demarcating them on a graph while showing their exact position on the data base for easy verification. The Missing Value Analysis which is an integrated aspect of exploratory statistics was used to calculate the rate of missing responses, to identify variables that the respondents did not answer which they ought to have answered and the percentage of data missing. Generally, respondents with lot of missing responses eliminated from the analysis.

Given that the variables of the study were continuous in nature, they were graphically explored using scatter diagrams. The scatter plots were used to explore the relationship between two continuous variables. Scatterplots show the direction between two variables. The relationship between two variables could be strong, weak, moderate or no relationship at all. The magnitude and direction of the relationship were estimated using the Pearson Product Moment Correlation Coefficient.

The hypotheses of study were tested using the multiple linear regressions. This tool was used to measure the magnitude of change in the dependent variable induced by a change in the independent variable. The linear regression was accompanied by many other tests which are: the adjusted R squared, the Analysis of Variance tests of variables in the model. The adjusted R squared indicated

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the amount of variability explained by all the variables included in a linear regression and ranges from 0 to 1, the value can however, be multiplied by 100 to get the variability in percentage. The higher the variability explained, the more the independent variable explains the dependent variable. The Analysis of variance table presents the sums of squares of each variable included in the model as well as which of them are significant. It should be noticed that a variable may be significant in the model but not significant in their sums of squares; this simply implies that the inclusion of the variable does not lead to a significant increase in the total variability explained by the model.

Regarding the test of normality, the variables were assumed to be normally distributed due to what the Central Limit Theorem states; that a sample size above 30 is bound to be normally distributed. However, a log base ten of the variables was used to nullify any effect of skewness in the variables in case there existed any. This was in order to avoid committing any Type I or Type II errors. The hypothesis were tested at 95% confidence interval leaving just a 5% chance of committing a type I error, that is, rejecting the null hypothesis when it ought to be retained.

The null hypothesis was rejected if the computed P-value was greater than the error margin of 5%. The alternative hypothesis was accepted if the computed P-value was less than the error margin of 5%. This was due to the fact that at 95% there was a minimum of 5% of uncertainty that is allowed in order to reject the null hypotheses. Also, this was to reduce the chances of committing a type I error (rejecting the null hypotheses when it should not be rejected) there by increasing the accuracy of the results.

Findings

Tactual orientation Skills

Table 1 presents findings on the influence of tactual orientation skills on self-autonomy of persons with severe visual impairments in the English-Speaking Regions of Cameroon

Table 1: Frequency responses on Tactual orientation skills

	Item	I	IN	TA	LTA	No response	Total
1	Show recognition of a variety of objects, textures, symbols, etc. that represent familiar activities and concepts.	219 (75%)	9 (3%)	41 (14%)	9 (3%)	14 (5%)	292 (100%)
2	I am able to use the cane effectively to move from one position to another through feel of the environment	248 (85%)	12 (4%)	12 (4%)	6 (2%)	14 (5%)	292 (100%)
3	Show recognition of tactile representations of words and letters when touched	166 (57%)	18 (6%)	18 (6%)	76 (26%)	14 (5%)	292 (100%)
4	With spatial awareness skill can localize an identical stimulus on both flat surfaces and an upright surface	166 (57%)	76 (26%)	26 (9%)	9 (3%)	15 (5%)	292 (100%)
5	Can match objects from a given set of concrete objects, based on shape, size, and texture	213 (73%)	29 (10%)	29 (10%)	6 (2%)	15 (5%)	292 (100%)
6	With tactile skills the use of the cane helps me navigate unfamiliar environment, land marks and clues	231 (79%)	26 (9%)	12 (4%)	9 (3%)	14 (5%)	292 (100%)
7	Can search through touch for a dropped object for example a ball behind the chair	64 (22%)	169 (58%)	6 (2%)	12 (4%)	41 (14%)	292 (100%)
Multiple response set		1307 (64%)	339 (17%)	144 (7%)	127 (6%)	127 (6%)	2044 (100%)

Table 1 presents the items that were used to measure the tactual orientation skills of persons with severe visual impairments, rating the items based on the proportion of persons who could perform these skills independently or with instructions needed. The most independently performed item was

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(item 2) the use of the cane effectively to move from one position to another through feel of the movements (85%); linked to this was (item 6) which was the next most independently performed skill that was about the use of the cane to navigate in unfamiliar environment, landmarks and clues (79%). The third most independently practiced skill (item 1) was the ability to show recognition of a variety of objects, textures, symbols that represent familiar activities and concepts (75%); attached to this skill was the ability to match objects from a given set of concrete objects, based on shape, size, and texture (73%) making it the fourth most independently practiced skill. The fifth most independently practiced skill (item 4) had to do with spatial awareness; the ability to localize an identical stimulus on both flat surfaces and an upright surface (57%). This was followed by (item 3) the ability to recognize tactile representation of words and letters when touched (57%) and the least independently practiced item (item 7) had to do with the ability to search through touch for a dropped object for example a ball behind the chair (22%) however, most of the respondents (58%) could perform this skill but with some instruction needed.

The multiple response section of the table indicates that most of the respondents could independently perform tactual orientation skills (64%) while the next highest majority could perform these skills with some instruction needed (17%), while only a few of them could perform these skills with temporal assistance (7%) and long-term assistance (6%). Thus, this was clear indication that the respondents possessed some level of tactual orientation skills.

Relationship between tactual orientation skills and the attainment of self-autonomy

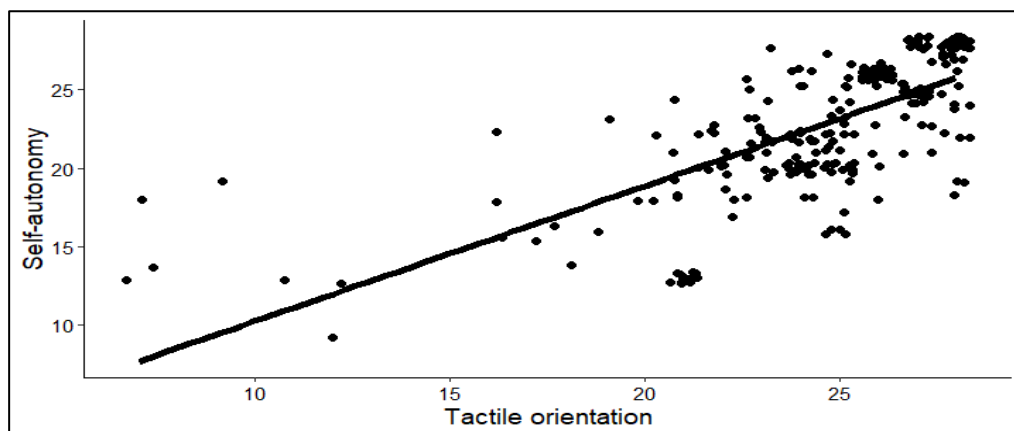


Figure 1: A scatter diagram of tactual orientation skill and the attainment of self-autonomy

Figure 1 presents the relationship between the tactual orientation skills of persons with severe visual impairments and their attainment of self-autonomy. It can be noticed on the scatter diagram that the points indicate a positive relationship between tactual orientation and the attainment of self-autonomy. Those with low tactual orientation skills appeared to have attained a relatively low level of self-autonomy. Again, it shows that most of the respondents had a high level of tactual orientation skills as well as self-autonomy skills. The correlation coefficient stood at 0.713 indicating a strong relationship between tactual orientation skill and self-autonomy with a p-value of 0.000 implying that this level of relationship was not due to chance.

Qualitative findings of tactual orientation skills and self-autonomy of persons with severe visual impairments

The ability to distinguish between materials and objects

It was captured from the respondents that they had the chance to practice distinguishing object right from school. In school, respondents were taught how to trace, identify, explore, manipulate and communicate what they feel and this gave them the opportunity to develop their tactual orientation skills. One of the respondents reported to practice over and over with objects of different shapes till

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they become familiar with the shape; this had to do with practicing also with objects of different textures and sizes. Thus repetition was the main method of distinguishing the ability to differentiate between objects and materials. This particularly as seen below in the words of the respondent;

“I have trained my sense of touch over time. And so, anything that I had ever touched before whenever I come across it now, then I’m able to touch, feel and recognize or understand it very well”.

“I make use of the shapes, sizes, and textures to distinguish materials and objects from first touch and train myself often with them. For example, I am able to differentiate maize, beans, rice, plantain, fruits from their shapes, sizes and textures without help because I have trained myself with the functional skills through continuous repetition”

“During orientation in rehabilitation school we are taught how to trace, identify, explore, manipulate and communicate what we feel by touch with our fingers. Using these skills since childhood has given me independence in differentiate objects and materials from just touching and feeling them”

Use of senses of touch to perceive beauty

The respondents affirmed that beauty depends on the person perceiving it but they mentioned that they had preconceptions of what is beautiful and what is not. They mentioned that they attributed rough surfaces to bad and ugly while smooth surfaces were attributed to good and beautiful but when it comes to objects or things but when it comes to persons, they mentioned that beauty lies in the heart. Again, they confirmed that these perceptions were based on popular societal opinions about what is beautiful and what is not; just as the society attributes soft and smooth to good or beautiful, so did they. Below is a verbatim quote of the responses;

“Except that I might not have understood this question well, beauty cannot be determined or detected via the sense of touch. Hence, the adage “beauty lies in the eyes of the beholder”. However, anything or person that I touch and feel their smoothness and maybe softness as required by societal perception, I can therefore independently assume that to be beautiful. Therefore, smooth is good and beautiful; meanwhile rough is bad and ugly”.

“Beauty to me depends on individual opinion. In regards to the face, I may touch and regard a rough skin texture as ugly and a soft one as beautiful. For example I have a girl child each time they plait her hair just with a touch and feel I can guess if it is beautiful or not”

Hypothesis testing

H3_o: The mastery of tactual orientation skills has no significant effect on Self autonomy of persons with severe visual impairments in the English-Speaking Regions of Cameroon.

H3_a: The mastery of tactual orientation skills has a significant effect on Self autonomy of persons with severe visual impairments in the English-Speaking Regions of Cameroon.

Table 2: The linear regression of tactual orientation skill and attainment of self-autonomy of persons with severe visual impairments

		Estimate	St. Error	t value	Pr(> t)	95% Confidence interval	
						Lower	Upper
	(Intercept)	1.158	0.180	6.430	0.000	0.803	1.512
Skill	Tactile	0.617	0.054	11.441	0.000	0.510	0.723

Multiple R-squared: 0.4956, Adjusted R-squared: 0.4681

F-statistic: 18.06 on 13 and 239 DF, p-value: < 2.2e-16

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Table 2 presents the coefficients of the linear regression of tactual orientation skills against the attainment of self-autonomy by persons with severe visual impairments. As noticed on the table above, tactual orientation skills significantly predicted the attainment of self-autonomy of persons with severe visual impairments (estimate = 0.617, p-value = 0.000), that is, as tactual orientation skills increase by one unit, the self-autonomy of the persons with severe visual impairments increase by 0.617. The model is a good fit for the data ($F_{(13,239)} = 18.06$, p-value = 0.000) and as indicated by the R-squared it explained 46.8% of the variability in the self-autonomy of the respondents.

Table 3: Model diagnostic table of tactual orientation skills and attainment of self-autonomy

	Df	Sum sq	Mean sq	F value	Pr(>F)
Tactual orientation	1	4.773	4.773	197.694	0.000
Residuals	239	5.770	0.024		

Table 3 presents the model diagnostic table of tactual orientation skills and the attainment of self-autonomy of persons with severe visual impairments. As noticed on the table, tactual orientation skills had the highest variability (4.773) which significantly explained approximately 40% of the attainment of self-autonomy in the persons with severe visual impairments (p-value = 0.000).

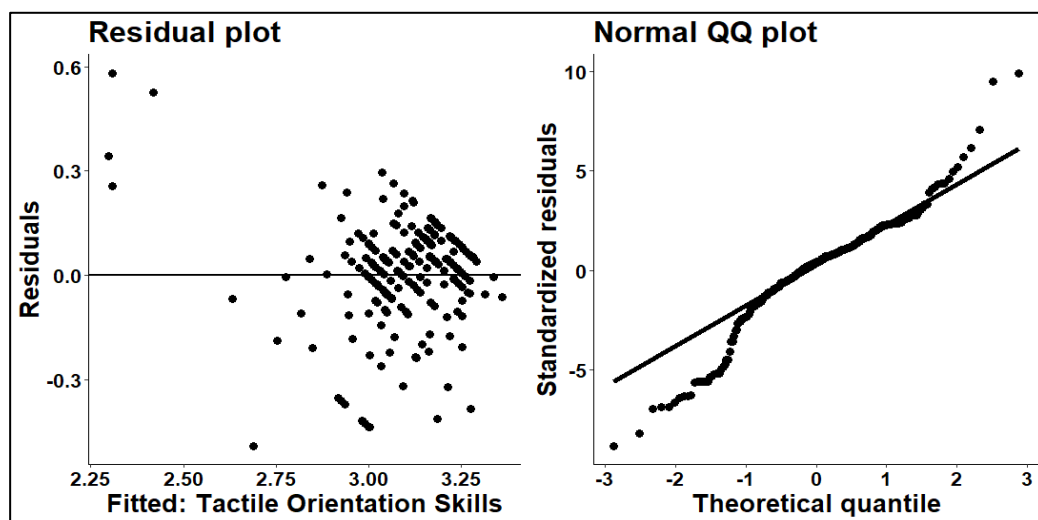


Figure 2: Model evaluation of linear regression of tactual orientation skills and Self-autonomy

Figure 2 presents the residual and the normal quantile plots that were used to evaluate the fitness of the model with the data. The residuals were equally scattered around the horizontal line thus indicating that the model was a good fit; also, the residuals appeared to follow the theoretical quantile with most of them lying on the straight line there by validating the model as a good fit for the data.

In conclusion, tactual orientation skills had a significant influence on the attainment of self-autonomy by the respondents. From the qualitative findings, respondents were able to distinguish between materials and objects as well as having the ability to appreciate beauty using their sense of touch, nevertheless, this was limited to the beauty of crafted materials and not humans for the acknowledged that the beauty of humans depended on several factors.

The respondents scored an average of 24.62 ± 0.22 points on the tactual orientation scale with a standard deviation of 3.57 implying that most the respondents, were similar their tactual orientation skills. Also, this is reflected by a median of 25 which indicated that more than half the sample possessed this skill at 25 points on a scale of 28. Thus, the scores were negatively skewed (-2.35), that is, most of the respondents possessed high tactual orientation skills and this resulted in scores that were significantly not normally distributed ($W = 0.774$, p-value = 0.000).

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Discussion of findings on Tactual orientation skills and self-autonomy of persons with severe visual impairments

The findings revealed the use of tactual orientation skills had a very significant and positive influence on attainment of self-autonomy as most of the respondents could independently perform the tactual orientation skills. This is to say with flexible fingers, legs, together with the use of mobility cane most of them could automate their lives by using the skills to identify objects, textures, navigate unfamiliar environment and to distinguish flat from upright surfaces safely and independently. In addition to the hypothesis statistics, it was confirmed that majority of persons with severe visual impairments with high levels of self-autonomy were those that were effectively using their tactual orientation skills to automate their activities while a few of them are not or do it with instructions or long term assistance.

In conclusion, the findings in the study and that from other studies reviewed revealed that tactual orientation skills have a significant link with the attainment of self-autonomy of persons with severe visual impairments. The alternative hypothesis was therefore accepted. The hypothesis was further confirmed by the fact that with tactual orientation skills persons with severe visual were able to automate some aspects in their lives such as being able to distinguish between materials, objects and appreciate beauty by touch from the qualitative data.

The findings match with the views of Davidson & Simmons, (1984), who says hearing, touch has been known to be a powerful information supplier of known as well as unknown environments. The sense of touch or haptic senses is also viewed by them as the skin sense or haptic information, which commonly relates to include recognition of objects by any part of the legs, palms and fingers. In addition, they revealed is the sense used for fine recognition of objects' form, texture, location, and any surface information.

Furthermore, the findings tie with those of Reddy et al. (2000) who explains that tactual perception is primarily how persons with visually impairments learn and develop a variety of concepts as compared to the sighted child who acquires the concepts through his or her sense of sight. They further discussed two kinds of tactual perceptions exist, which are the synthetic touch and analytic touch. "Synthetic touch refers to a person's tactual exploration of objects small enough to be enclosed by one or both hands.

The findings further supports the information theory by Shannon and Weaver (1963), which highlights the importance of information flow from the sender to the receiver, in completing the communication process. It also indicates that for effective and efficient communication to take place, appropriate communication skills must be acquired. In the case of persons with severe visual impairments to independently communicate with their environment they need to acquire tactual orientation skills.

In addition, the findings on tactual orientation skills relate with those of Bandura (1994), who opines that the mastery experiences, or personal performance and accomplishments, are the most effective way to create a strong sense of efficacy. To him successes build a strong belief in one's self and failures undermine it, especially if failures occur before a sense of ability is firmly established. To persons with severe visual impairments mastery and successful use of tactual orientation skills may give them a high sense of self-belief. In all, for self-autonomy to take place successfully, persons with severe visual impairments are expected to make sufficient use of their tactual orientation skills as failure to make effective use of this, safe mobility, identification and discrimination of objects might become difficult for many of them.

The finding tallies with the self-determination theory by Ryan and Deci (2000). According to them all individuals strive for and need autonomy (the need to feel free and carry out task on their own), competence (the need to feel effective), and relatedness (the need to connect closely with others) in

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order to flourish and grow. Based on the study, persons with severe visual impairments are not different as they need basic psychological needs as individuals to strive for their self-autonomy, competence and relatedness which may be achieved through communication skills such as tactual orientation.

Conclusion

The purpose of this study was to examine the influence of tactual orientation skills on the attainment of self-autonomy of persons with severe visual impairments in the North West and South West Regions, Cameroon. Specifically, the researcher then set out to determine how persons with severe visual impairments can use these tactual orientation skills to automate some aspects of their lives with little or no assistance. The aforementioned research variable especially in the North West and South West Regions, Cameroon have stressed the influence, training of persons with severe visual impairments in the tactual orientation skills have to meet up with their self-autonomy.

The findings revealed that there is a significant relationship between tactual orientation skills and the attainment of self-autonomy in persons with severe visual impairments in the two English speaking regions of Cameroon. The present study therefore recognized the importance of the role tactual orientation skills have on the attainment of self-autonomy of persons with severe visual impairments who are already challenged by gap they have due to vision loss. Drawing from the conclusion of the findings it can be concluded that the society at large and the educational system in particular has a bigger role to play in the lives of persons with severe visual impairments by training them in the compensatory skills they need to give them some level of autonomy. For instance, after training them in the skills in rehabilitation centres and schools, they should also be encourage to use the skills by giving the opportunity to put the skills into practice through absorption into the society in the various sectors for disability is not inability as the society may perceive.

It will be recalled from the theoretical framework that guided this study that when individuals possess skills that can help them independently manipulate their environment, they develop that self-ability to carry out task successfully and independently, and also self-determination with intrinsic motivational attitude to succeed in their goals the reason findings showed most of them at least have certain levels of education thereby proving the saying that “Disability is not inability”.

Implications of the study to education

From the findings, it is obvious that tactual orientation skills are vital skills that avails persons with severe visual impairments the capability to live self-autonomous lives and function independently like every other individual despite their vision loss. The implication of this is that though parents, teachers and the state are aware about giving persons with severe visual impairments the education and autonomous life they deserve like their normal peers, some due to their background factors still find it difficult to acquire all the skills. This is especially true with expressive and receptive skills that are mostly dependent on special educational training and trained teachers. Due to this sometimes appropriate assistance is not provided in the schools training them thereby affecting acquisition of the skills and hence self-autonomy compelling them to be dependent on family members and those around them for help. The study therefore, has contributed knowledge on the understanding that persons with severe visual impairments can live autonomous lives if only they are well trained in the various communication skills tactual orientation skills inclusive. Such support which most of the time is given through specialised institutions should be handled with kin attention by the state and families. Information collected from the performance of persons with severe visual impairments on the influence of tactual orientation skills and the attainment of self-autonomy in the study will be crucial to shed light on the areas they need much attention to develop so as to live like their sighted peers and to also change the perception of the society that ‘disability is inability’. Based on the qualitative findings the study reveals persons with severe visual impairments were able to automate

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certain aspects of their lives using their tactual orientation skills. This implies if they develop this compensatory skill (tactual orientation) through the support efforts of the society and those around them they will greatly do better in life.

Recommendations

From the findings, the tactual orientation skills showed a strong relationship with influence on the attainment of self-autonomy of persons with severe visual impairments. The peripatologists, therapists, orientation and mobility instructors, families of persons with severe visual impairments should collaborate to teach the persons with severe visual impairments fine and gross motor skills and good gait pattern to enhance the use of tactual orientation skills and give them that self-autonomy to carry on their lives with little or no help.

The tactile/haptic sense also has a serious significance on the self-autonomy of persons with severe visual impairments hence it is recommended that special centres or rehabilitation centres and inclusive learning institutions should ensure each and every child with visual impairments owns and uses the mobility cane for effective and independent movement.

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