

Mediating Affective and Discriminative Touch Through Socio-Adaptive Functioning in Adults with Complete Visual Impairment

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Abstract : This study investigated whether socio-adaptive deficits mediate the relationship between visual impairment and two broad domains of tactile perception, having two levels each : Affective Touch, where the adults were asked to rate their perceived pleasantness to soft brush strokes with their intensities lying between 1 cm/s and 10 cm/s - on a scale of 1 to 5, applied on their forearm and palm; and Discriminative Touch, where the adults were asked to rate their perceived roughness on a scale of 1 to 5, by touching two sand papers of 60-grit and 120-grit values. Mediation analyses of the obtained data from 120 adults revealed that socio-adaptive deficits do not significantly mediate this relationship across any of the evaluated tactile domains. Visual impairment however, strongly predicts Socio-Adaptive Deficits showing that Socio-Adaptive Deficits can be an effect and a behavior that comes from Visual impairment even though Socio-Adaptive Deficits remain a separate idea. Tactile Perception mainly uses changes in the somatosensory cortex and crossmodal activations in the region. In contrast Socio-Adaptive Deficits are tied to changes in the cortex, the amygdala and brain chemicals that disturb high-level thinking, not basic Affective Touch or Discriminative Touch. Therefore sensory processing in impairment does not rely on the cognitive and behavioural challenges of Socio-Adaptive Deficits. Mediation Analysis confirms the relationship between impairment and Socio-Adaptive Deficits.

Keywords: Visual Impairment, Socio-Adaptive Deficits, Tactile Perception, Affective Touch, Discriminative Touch, Mediation Analysis

I. INTRODUCTION

Rigorous research in the field of Neurosciences consistently reveals new information about the brain, opening a new realm of scientific discovery and understanding for the world. There is enough evidence that proves our brain to be the quintessential organ of adaptability and functionality. All the neural circuits of the brain connected to our sense organs are intricately designed and constantly modified to interact with our environment, learn from experiences, adapt to changes and hence, make our survival possible and meaningful.

But do we ever wonder, what happens when one or more of these senses suffer from any impairment, thereby leading to their partial or complete dysfunction? How do people manage that deficiency and still manage to fight the struggle for survival? Noteworthy to mention - sensory deficiency is managed and compensated by the efforts of the brain, altering different mechanisms to suit the adaptability of the individual (Marazziti D, Russomanno G, Gambini M, Diguseppe FR, Fazio E, Gurrieri R., 2026).

Neuroplasticity is a process that involves structural and functional changes to the brain, which facilitate the process of adaptation to one's own environment. A popular definition of Neuroplasticity refers it to be "the ability of the nervous system to change its activity in response to intrinsic or extrinsic stimuli by reorganizing its structure, functions, or connections" (Mateos-Aparicio, & Rodríguez-Moreno, 2019). Similar to neuroplasticity is another concept called Cross-modal Neuroplasticity. It refers to the specific changes that take place in the brain to compensate for impairment of one of the sensory organs, causing intact senses to repurpose the deprived brain regions. In other words, when one of the senses loses its functionality, the other senses increase theirs in order to compensate for the impairment and thereby adapt to the environment as adaptively as possible. Likewise justified by some research studies, it has been found that visually impaired individuals exhibit better and finer discriminatory thresholds in comparison to visually sighted individuals (Merabet, et.al; 2009).

Thus, it can be evidently stated that visual impairment enhances the tactile sensitivity of such individuals, which explains their Braille reading and understanding skills (*Discriminative Touch Perception*) and the ability to comprehend interpersonal touch, contact and warmth (*Affective Touch Perception*). On the other hand, visual impairment brings about certain social and adaptive deficits in the social adjustment of the individual which hinders their overall development.

In this research study, we explore whether Socio-adaptive impairment mediates the impact of Visual Impairment on the Tactile Perception of adult individuals, specifically on the domains of Affective and Discriminative Touch Perception.

NEED OF THE STUDY

Out of all senses, vision proves to be one of the most essential qualities that serves as the predominant toolkit for survival. For those living with complete or partial visual impairment, their Auditory and Tactile sensations occupy the major functioning. Functional imaging studies have shown that in blind adults there exists consistent occipital recruitment during tactile processing, and in congenitally blind individuals stronger occipital crossmodal activation is associated with superior tactile discrimination (Ortiz-Terán, L., Ortiz, T., Perez, D., Aragón, J., Díez, I., Pascual-Leone, Á., & Sepulcre, J., 2016) - which is known as crossmodal neuroplasticity.

The need of this study is to explore the occupational and rehabilitative opportunities of the visually impaired, through the neuronal gates of somatosensory modality. Along with that, it also focuses on enhancing social adaptation of an individual while leveraging the skills associated with affective and discriminative touch, thus allowing for complex high-resolution tactile feedback systems through discriminative touch and re-evaluating the role of visual experience in making tactile judgement by relying on affective touch for social bonding.

III. RESEARCH METHODOLOGY

3.1. Population and Sample

The sample under study comprises of 120 participants from West Bengal, India - across the experimental group (70 participants) and the control group (50 participants)

For the experimental group, the sample has been drawn from a population that included adults aged 18 to 45 years, covering emerging adulthood from 18 to 29 years and established adulthood from 30 to 45 years. The age brackets are validated by a study on 'Adult Development and Associated Health Risks', according to Halloran (2024). Participants satisfied the diagnostic rules for complete congenital or acquired visual impairment, as stated by The Gazette of India (2024). Participants also met DSM-5 rules for deficits in socio-adaptive functioning.

Specifically, participants who were screened based on the criteria for mild to moderate deficits in their socio-adaptive functioning. Mild deficits amount to 50% impairment and Moderate deficits to 75% impairment. The screening was conducted with the help of Vineland Social Maturity Scale (VSMS), and participants who scored between 36 and 69 were chosen - following guidelines from the Ministry of Social Justice and Empowerment as stated by The Gazette of India (2024).

Eligible male and female participants had at least an eighth grade education. Participants came from upper-middle (Class II) lower-middle (Class III) upper-lower (Class IV) or lower (Class V) socioeconomic classes as measured by the Modified Kuppaswamy Scale (Radhakrishnan & Nagaraja 2023).

Participants who had psychiatric conditions, physical illnesses that would affect participation or a history of substance use were excluded.

For the control group, both adult males and females, aged between 18 to 45 years were chosen. The participants had no disability - no visual impairment, deficits in socio-adaptive functioning, or had any illness, serious physical health problems or a history of any psychiatric condition and drug use. The participants were confirmed by obtaining scores above 84 on the Vineland Social Maturity Scale (VSMS) Social Quotient, indicative of 'no disability', had at least eighth-grade education, belonging to upper-middle (Class II) lower-middle (Class III) upper-lower (Class IV) or lower (Class V) according to the Modified Kuppaswamy Socioeconomic Scale.

3.2. Data and Sources of Data

The following institutions were selected as the source of sample -

Experimental Group -

- National Institute For Locomotor Disabilities (NILD, located in Baranagar, in West Bengal),
- Ramakrishna Mission Blind Boys Academy (Narendrapur, West Bengal),
- Blind School - Voice of the World (NGO), located in 4, Nrishingha Dutta Road, Kolkata - 700 008

For the *Control Group*, no particular institution was approached. Data was collected purposefully from individuals who were found to match the stated inclusion criteria for the Healthy controls.

3.3. Theoretical Framework

The variables under study comprise of the following:-

- Dependent - Affective touch perception and Discriminative touch perception,
- Independent - Visual Impairment, and,
- Mediating Variable - Socio-adaptive Impairment

Aim of the present study -

The aim of the present study is to find out the impact of Mild and Moderate impairment in socio-adaptive functioning, on the domains of affective and discriminative touch of adults (both males and females), who have complete Visual Impairment.

The Objective and Hypothesis of the present study are as follows -

Objective :

To assess the mediating impact of deficits in Socio-adaptive functioning in the domains of affective and discriminative touch of adults with complete visual impairment.

Hypothesis (Ha):

There is a significant mediating impact of deficits in Socio-adaptive functioning in the domains of affective and discriminative touch of adults with complete visual impairment.

Variables of the study

Study groups :

- Adults having 50% to 75% disability in socio-adaptive functioning along with visual impairment - 70 adult individuals
- Adults having no disability - 50 adult individuals

Study variables :

→ *Affective Touch of Adults, in the respective study groups.*

Affective Touch essentially refers to the interpersonal pleasant touch, such as cuddling, holding hands or stroking/caressing (Meijer et al., 2022). It is the tactile form of expressing love and attachment, and therefore makes up the essence of any relationship. Evidence shows that the tactile senses develop to accommodate for the loss of sight. Such changes related to “compensatory plasticity” take place inside the visual cortex (Lazzouni L, Lepore F, 2014). In this study, a soft brush is used to give slow strokes on two different regions of the hand (forearm and palm) with the intensity lying between 1 and 10 cm/s (with the optimal activation hitting at 3 cm/s strokes), which is proved

to activate CT-afferents. This kind of touch is referred to as CT-optimal touch (Björnsdotter et al., 2010). To that stimulation, participants are asked to rate their perceived pleasantness on a 5-point scale.

Rationale for selection:

Affective Touch is chosen as a dependent variable in the study, with its two levels being the areas which were stimulated - the localised non-hairy region of the Palm and on the hairy region of the Forearm, which is predicted to be influenced by visual impairment. It is a common understanding of the brain functions of neuroplasticity and adaptability which postulates that the brain rewires itself to adapt to sensory deprivation so as to maintain a viable state of social-adaptive functioning. This is possible due to sensory compensation, which enhances tactile acuity of the individual and helps in translating tactile cues into mental maps of space and shape. Different research studies have stated that blind individuals rated touch as more pleasant on the palm than on the forearm whereas the opposite was the finding for the healthy control group (Radzium, 2023).

→ Discriminative Touch of Adults, in the respective study groups.

Discriminative Touch facilitates one's ability to identify and discriminate between tactile sensations, say between different types of pressure, texture, temperature, quality, location, sizes, and the like. Unlike other crude forms of touch, it allows precise localization with the help of a specialized, fast conducting tactile system, and thus plays an important role in object recognition and manipulation. Blind individuals are found to have lower mean grating orientation threshold in comparison to sighted individuals, thus indicating superior spatial tactile acuity in them (Van Boven RW, Hamilton RH, Kauffman T, Keenan JP, Pascual-Leone, 2000). In this study, two sand papers of different grits (differing textures or roughness) are used, where the participants are asked to rate their perceived roughness of the sand papers (one at a time) on a 5-point scale.

Rationale for selection:

Discriminative touch is another dependent variable with its two levels being the use of two different textures to arouse tactile sensation. Researches indicate that discriminative touch acuity is more enhanced in blind individuals than in sighted individuals (Radzium, 2023), due to their heightened sensitivity to fine textures, therefore supporting the mechanism of sensory compensation involving textile acuity enhancement and neural plasticity of the brain (Yung-Ting Chen, 2025). Studies using neuroimaging techniques show that areas of the brain typically reserved for processing vision (like the visual cortex) become activated during tactile tasks. This is yet another example of cross-modal plasticity that helps translate tactile cues into mental maps of space and shape.

→ Socio-adaptive Deficits of Adults, in the respective study groups.

In this study, the participants are screened for disability in terms of their socio-adaptive functioning, which is also considered to be a manifestation of their visual impairment (Klauke S, Sondocie C, Fine I. 2023). Socio-adaptive functioning refers to the conceptual, social and practical skills that allow individuals to adapt to their environment and for functioning in their daily life (Hill, 2015). Deficits in adaptive skills are linked to problem behaviors (also termed maladaptive or challenging behaviors in some studies), such as stereotypes, self-injury, aggression, and tantrums.

Rationale for selection:

In the study, deficits in social adaptive functioning is a mediating variable. Here, adults with visual impairment are screened for socio-adaptive deficits, where these deficits are considered to be influenced or aggravated by their visual impairment. It is selected as a mediating variable because it explains the impact of visual impairment on tactile perception. Many research studies show that there is a strong positive correlation between vision impairment and difficulties with performing the activities of daily living and the instrumental activities of daily living, which are a manifestation of social and adaptive impairments (Rahmati, Smith, et al, 2025). The activities of daily living are a total package of the conduct of a person on a daily basis which allows him/her to live autonomously as well as be integrated in his/her environment, fulfilling a determined social role - therefore referring to the DSM 5 criteria for Socio-adaptive functioning in terms of meeting the standards of social responsibility and personal independence.

→ Visual impairment of the experimental group.

The World Health Organization (WHO) defines "blind" according to a maximum vision of 0.05 (Luers JC, Mikolajczak S, Hahn M, Wittekindt C, Beutner D, Hüttenbrink KB, Damm M, 2014). Participants of the experimental group are diagnosed with complete visual impairment, which is either congenital (born with visual impairment) or have developed visual impairment later in life. The brain comprehends this impairment and makes neural connections to develop tactile sensations, so as to compensate for the vision loss (Lazzouni L, Lepore F, 2014).

Rationale for selection:

In the present study, visual impairment is taken as the independent variable, having two levels: no visual impairment among the members of the healthy control group and complete or acquired visual impairment among the members of the experimental group. This variable is a form of sensory deprivation and brings about adaptations in the brain through the process of neuroplasticity and crossmodal plasticity, however accounting for certain social and adaptive deficits as a result of the impairment. Reduced sensory stimulation is associated with a rapid decline in cognitive functioning, probably due to a decline in neural plasticity and activity. Sensory deprivation has been broadly associated with impairments in attention and memory, executive dysfunction, difficulties in concentration, and disturbances in abstract thinking, with risk and severity of cognitive decline correlating with the duration and intensity of sensory deprivation. Several longitudinal studies suggest that reduced environmental/social stimulation and/or age-related hearing, visual, or olfactory loss constitute significant risk factors for cognitive decline (Marazziti, D., Russomanno, G., Gambini, M., Diguseppe, F. R., Fazio, E., & Gurrieri, R.; 2026).

3.4. Statistical tools used.

This section elaborates the proper statistical measures which are being used to forward the study from data towards inferences. The details of methodology are given as follows:

3.4.1. Descriptive Statistics

Descriptive statistics have been used to summarize the details of the sample distribution by using Mean, Standard Deviation, Test of Homogeneity of Variance, Skewness and Kurtosis, based on which the assumptions of Normality are statistically examined. And thereafter Parametric statistical methods were chosen for further analysis.

3.4.2. Levene Test

The Levene Test was conducted to figure out whether the groups under study have equal population variances.

3.4.3. Test for Skewness and Kurtosis

Test for Skewness and Kurtosis is conducted to check whether the obtained dataset follows a normal distribution.

3.4.4. Collinearity Diagnostic Tests

Collinearity Diagnostic test was conducted for the sample distribution, showing the dependent variable and the mediating variable - where multi collinearity was assessed using Tolerance and Variance Inflation Factor (VIF) statistics. Presence of Multicollinearity between the stated variables validates that the deficit in socio-adaptive functioning is taken as a consequence as well as a manifestation of Visual impairment of the sample under study.

3.4.5. Linear Regression Analysis

Mediation Analysis was conducted by examining the Coefficients of Linear Regression Analysis, for the variables of - Affective Touch - Forearm, Affective Touch - Palm, Discriminative Touch - 60 grit, Discriminative Touch - 120 grit. Based on the coefficients of Linear Regression Analysis, the following effects were studied and interpreted, to find out whether impairments in Socio-adaptive functioning mediated the relationship between Visual Impairment and Tactile Perception - Total Effect (Path c), Direct Effect (Path c'), IV to Mediator relationship (Path a), Mediator to DV relationship (Path b).

IV. RESULTS AND DISCUSSION

4.1. Descriptive Statistics of the Variables under study

Table 4.1 : Showing the sample under study and their respective Means and Standard Deviations.

<i>Sample</i>		<i>N</i>	<i>Mean</i>	<i>Standard deviation</i>
Affective Touch - Forearm	Control Group	50	3.5700	0.9689
	Experimental Group	70	3.4429	1.1812
Affective Touch - Palm	Control Group	50	3.7800	1.0887
	Experimental Group	70	3.9571	1.0381
Discriminative Touch - 60-grit	Control Group	50	4.0900	0.8187
	Experimental Group	70	4.1071	0.9551
Discriminative Touch - 120-grit	Control Group	50	2.3100	0.8683
	Experimental Group	70	2.5429	1.1349

The Descriptive Statistics analysis was done to identify the Means (M) and Standard Deviations (SD) for the Control group (n=50) and the Experimental group (n=70) on two different conditions of Tactile perception: Affective Touch (Forearm and Palm) and Discriminative Touch (60-grit and 120-grit). For the condition of Affective Touch - Forearm, the mean score for the control group (M = 3.57, SD = 0.97) was slightly higher than that of the experimental group (M = 3.44, SD = 1.18). For the condition of Affective Touch - Palm, on the other hand, the mean score of the experimental group (M = 3.96, SD = 1.04) was higher than that of the control group (M = 3.78, SD = 1.09). For the condition of Discriminative Touch - 60-grit, the mean scores for the control group (M = 4.09, SD = 0.82) and the experimental group (M = 4.11, SD = 0.96) were very much alike. Lastly, for the condition of Discriminative Touch - 120-grit, the mean score for the experimental group (M = 2.54, SD = 1.13) was higher than that of the control group (M = 2.31, SD = 0.87).

4.2. Levene Statistic

Table 4.2 : Showing the Test for Homogeneity of Variances.

<i>Variables</i>	<i>Levene Statistic</i>	<i>df1</i>	<i>df2</i>	<i>Significance</i>
Affective Touch - Forearm	1.004	1	118	0.318
Affective Touch - Palm	0.074	1	118	0.786
Discriminative Touch - 60-grit	0.980	1	118	0.324
Discriminative Touch - 120-grit	4.871	1	118	0.029

According to the data presented in the table above, the p-value (in the Significance column) is found to be greater than 0.05 for Affective Touch - Forearm, Affective Touch - Palm and Discriminative Touch - 60-grit. It can therefore be said that the assumption of Homogeneity of Variance has been met for the respective variables. However the p-value for Discriminative Touch - 120-grit is found to be more than 0.05 indicating the presence of a significant difference in data variance.

Based on a clinical observation and rapport established during data collection, one of the possible reasons for the statistically significant difference in the variance, as per the obtained p-value for Discriminative Touch - 120-grit, was the knowledge of Braille, influencing their relative perception of roughness in the visually impaired individuals. That is, the responses obtained by the individuals of the experimental group in the trials of discriminative touch were based in comparison to the level of the raised dots of the Braille board, therefore yielding varied scores in this case. On the other hand, individuals with 'no disability' were able to discriminate between the given two different textures as predicted.

This could be why the homogeneity of variance of discriminative touch - 120-grit is found to be higher than that of the healthy population.

4.3. Skewness and Kurtosis of the Variables under Study

Table 4.3 : Showing the Skewness and Kurtosis results for Normality of Distribution based on the variables under study - Affective Touch - Forearm, Affective Touch - Palm, Discriminative Touch - 60-grit, Discriminative Touch - 120-grit and Socio-adaptive deficits.

<i>Variables</i>	<i>Skewness</i>	<i>Kurtosis</i>
Affective Touch - Forearm	-0.438	-0.552
Affective Touch - Palm	-0.844	-0.008
Discriminative Touch - 60-grit	-0.723	-0.497
Discriminative Touch - 120-grit	0.437	-0.672

Based on the range of Skewness which falls between -0.5 to +0.5, the variables of Affective Touch - Forearm, Discriminative Touch - 120-grit and Socio-adaptive deficit meet the criteria of Normality. Similarly, based on the range of Kurtosis, which falls between the range of -2 and +2, all the variables - Affective Touch - Forearm, Affective Touch - Palm, Discriminative Touch - 60-grit, Discriminative Touch - 120-grit and Socio-adaptive deficits - meet the criteria of Normality. Therefore it can be concluded that the obtained data is fairly symmetrical.

4.4. Collinearity Diagnostic Tests

Table 4.4 : Showing Collinearity diagnostics of the sample distribution of the independent variable and mediating variable.

<i>Variables</i>	<i>VIF values</i>	<i>Tolerance</i>
Visual impairment	11.37	0.090
Socio-adaptive deficits	11.37	0.090

From the table above, the Tolerance values for the variables are found to be below 0.10, and their respective VIF values being above 10 - thus indicating very high multicollinearity between the variables.

The obtained results thus indicate that both the Independent variable (Visual Impairment) and the Mediating Variable (Socio-adaptive Impairment) show high multicollinearity, thus suggesting that the variable of Socio-adaptive Impairment taken under study is a manifestation of the deficits caused by Visual Impairment.

Thus, Linear Regression analysis was conducted for obtaining Mediational impact on the dependent variables.

4.5. Linear Regression Analysis

Table 4.5 : Showing Coefficients of Linear Regression Analysis for the variable of Affective Touch - Forearm, Affective Touch - Palm, Discriminative Touch - 60 grit and Discriminative Touch - 120 grit.

Variable	Effects	Unstandardized Beta Coefficient (B)	Standard Error (SE)	Significance*
Affective Touch - Forearm	Total Effect (<i>Path c</i>)	-0.127	0.203	0.533*
	Direct Effect (<i>Path c'</i>)	-0.881	0.677	0.196*
	IV to Mediator relationship (<i>Path a</i>)	61.429	1.776	< 0.001*
	Mediator to DV relationship (<i>Path b</i>)	0.012	0.011	0.246*
Affective Touch - Palm	Total Effect (<i>Path c</i>)	0.177	0.196	0.368*
	Direct Effect (<i>Path c'</i>)	-0.441	0.655	0.502*
	IV to Mediator relationship (<i>Path a</i>)	61.429	1.776	< 0.001*
	Mediator to DV relationship (<i>Path b</i>)	-0.410	0.010	0.324*
Discriminative Touch - 60 grit.	Total Effect (<i>Path c</i>)	0.017	0.167	0.918*
	Direct Effect (<i>Path c'</i>)	-0.347	0.558	0.536*
	IV to Mediator relationship (<i>Path a</i>)	61.429	1.776	< 0.001*
	Mediator to DV relationship (<i>Path b</i>)	0.006	0.009	0.496*
Discriminative Touch - 120 grit	Total Effect (<i>Path c</i>)	0.233	0.191	0.226*
	Direct Effect (<i>Path c'</i>)	0.002	0.640	0.997*
	IV to Mediator relationship (<i>Path a</i>)	61.429	1.776	< 0.001*
	Mediator to DV relationship (<i>Path b</i>)	0.004	0.010	0.707*

From the statistical analysis, the obtained results of Mediation Analysis indicate - for Affective Touch - Forearm, the Total effect of the Visual Impairment on Affective touch was not statistically significant ($B = -0.13$, $SE = 0.20$, $p = 0.533^*$). However, Visual Impairment significantly predicted the mediator, socio-adaptive deficits ($B = 61.43$, $SE = 1.776$, $p < 0.001^*$). When controlling for the sample, socio-adaptive deficits did not significantly predict affective touch ($B = 0.01$, $SE = 0.01$, $p = 0.246^*$). Finally, the direct effect of the sample on affective touch controlling for the mediator was also non-significant, ($B = -0.88$, $SE = 0.677$, $p = 0.196^*$).

For Affective Touch - Palm, the total effect of Visual Impairment on the Affective Touch - Palm is found to be not statistically significant ($B = 0.18$, $SE = 0.20$, $p = 0.368^*$). However, a significant positive relationship was found between Visual Impairment and the Socio-adaptive deficits ($B = 61.43$, $SE = 1.78$, $p < 0.001^*$), indicating that higher levels of the independent variable predicted higher levels of the mediator. When controlling for the impact of Socio-adaptive deficits, the direct effect of the Visual Impairment on Affective Touch on the Palm remained statistically non-significant ($B = -0.44$, $SE = 0.66$, $p = 0.502^*$). Furthermore, the relationship between Socio-adaptive deficits and Affective Touch on the Palm was also not statistically significant ($B = -0.41$, $SE = 0.01$, $p = 0.324^*$).

For Discriminative Touch - 60 grit, visual impairment significantly predicted socio-adaptive deficits ($B = 61.43$, $SE = 1.78$, $p < 0.001^*$). However, socio-adaptive deficits did not significantly predict discriminative touch when controlling for visual impairment ($B = 0.01$, $SE = 0.01$, $p = 0.496^*$). The total effect of visual impairment on discriminative touch was not significant ($B = 0.02$, $SE = 0.17$, $p = 0.918^*$). When the mediator was included in the model, the direct effect of visual impairment on discriminative touch remained non-significant ($B = -0.35$, $SE = 0.56$, $p = 0.536^*$).

For Discriminative Touch - 120 grit, the total effect of visual impairment on discriminative touch was not statistically significant ($B = 0.233$, $SE = 0.191$, $p = 0.226^*$). However, visual impairment was a statistically significant predictor of socio-adaptive deficits ($B = 61.429$, $SE = 1.776$, $p < 0.001^*$). When controlling for visual impairment, socio-adaptive deficits did not significantly predict discriminative touch ($B = 0.004$, $SE = 0.010$, $p = 0.707^*$). Finally, the direct effect of visual impairment on discriminative touch while controlling for socio-adaptive deficits was also not statistically significant, ($B = 0.002$, $SE = 0.640$, $p = 0.997^*$).

Therefore, based on the obtained results, it can be evidently concluded that the Hypothesis (H_a) under the present study stands rejected.

Based on the theoretical understanding of the two variables of Visual Impairment and Impairment in Socio-adaptive Functioning, it can be concluded that even though the variables show strong correlation, as here, the social and adaptive deficits are taken as a consequence as well a manifestation of visual impairment; they are two distinct constructs, which have the capability to exist independently. This is also supported by the neurophysiological knowledge that visual impairment accounts for sensory deficits and a neurological condition. Whereas, socio-adaptive deficits fall in the domain of cognitive and behavioral difficulties predominantly, with the common examples being children with autism or other neurodevelopmental disabilities.

Based on the Mediation Analysis, it can be statistically concluded that socio-adaptive deficits do not mediate the relationship between Visual Impairment and the different groups representing the two domains of Tactile Perception - Affective Touch-Forearm, Affective Touch-Palm, Discriminative Touch-60-grit, Discriminative Touch-120-grit, under study. But, in all of the above cases, it has also been found that visual impairment significantly predicted the variable of socio-adaptive deficits. This validates the previous proposition of the socio-adaptive deficits being a consequence as well a manifestation of visual impairment in this study, while being independent constructs themselves.

According to multiple research evidence, the neurophysiological markers of touch perception include the reorganisation of the Somatosensory Cortex of the brain via neuroplasticity and Crossmodal Occipital Activation (Karim et al., 2021). On the other hand the neurophysiological markers of socio-adaptive deficits include the malfunctions in the prefrontal cortex, amygdala and the dysfunctional dopaminergic and oxytocinergic pathway disruptions, which are implicated in influencing impact high-level tactile perception by disrupting attention, exploration strategies, and cognitive processing, but not Affective and Discriminative touch. This explains why socio-adaptive deficits do not have a mediating impact on tactile perception- explaining visual perception, in this study.

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