



Psychosocial and Neurological Predictors of Creative Imagination of Artists: The Mediating Role of Social Adaptation

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Vol. 2, No. 3 (Summer 2022)

Pages: 157 – 166

ISSN (Print): 2789-441X

ISSN (Online): 2789-4428

Key Words

Hemispheric Orientation, Social Adaptation, Well-being, Creative Imagination, Artists

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Abstract: The present study aimed to assess the role of hemispheric orientation, emotional sensitivity, cognitive imagination and their correlation with the well-being of fine artist students, as well as to evaluate the mediating role of social adaptation. A correlational research design was used, and a sample of 200 artists or people from art communities (100 males and 100 females aged 18 to 30) was selected using purposive sampling. The data collection was done through an open hemispheric brain dominance scale, the Creativity scale created by Kaufman (2012) (K-DOCS), an Emotional sensitivity self-assessment scale, the Mental Health Continuum-short form, and scales for Social adaptation. Data analysis was done through Pearson Product Moment Correlation, Independent Sample t-test, Multiple Regression Analysis, ANOVA and Mediation Analysis test. The results indicated that hemispheric orientation had a statistically significant association with creative imagination, emotional sensitivity, psychological well-being and social adaptation. Moreover, social adaptation significantly mediated the association between hemispheric orientation and creative imagination. The study adds to our understanding of the role of hemispheric orientation, social adaptation and emotional sensitivity in predicting the well-being and creative imagination of artists.

Introduction

Creative imagination is an essential component of an artist's work. Research has shown that while creative imagination is marked for being the ability to create or visual something that artists excel in this area, there might be a significant role that an individual's hemispheric orientation has to play in the strive towards creativity (Runco et al., 1993). Studies have also shown how creativity is associated with the right hemisphere of the brain, which is responsible for processing emotions, intuition, and creativity (Bryant & Throsby, 2006). This hemisphere is also responsible for visual-spatial tasks, such as

recognizing patterns and manipulating shapes. In order to develop one's creative imagination, it is important to practice activities that use the right hemisphere, such as drawing, painting, sculpting, and writing (Arnold, 2020). Other activities that can help to foster creative thinking include reading, music, and meditation. Learning new skills, such as a foreign language, can also help to stimulate creative thought (Mace & Ward, 2002).

Studies have shown a majority of artists tend to be high on emotional sensitivity (Jamison, 1989; Vellante et al., 2011). There is also evidence to show that artists also have the ability to tap into

their emotions to use them as creative fuel, and this can lead to powerful works of art (Sanchez-Ruiz et al., 2011). In general, the emotional sensitivity of artists can be seen as a tool that allows them to create meaningful and impactful pieces of art. At the same time, there is evidence to show that the emotional sensitivity of an individual is also influenced by their hemispheric orientation (Zaidel, 2013). People with a more left-hemispheric orientation may have a greater ability to regulate their emotions, while those with a more right-hemispheric orientation may be more emotionally sensitive (Drago et al., 2009). Those with a balanced hemispheric orientation may experience a greater level of emotional regulation. Additionally, the degree of emotional sensitivity may also be influenced by other factors such as personality, environment, and upbringing.

Overall, creativity, emotional sensitivity, and the creative process can all have a positive effect on the well-being of fine arts students. Creativity can help to reduce stress and anxiety, improve problem-solving skills, and increase self-esteem. Emotional sensitivity can help fine arts students to be more aware of their emotions and to better regulate them. Finally, the creative process can provide an outlet for emotional expression and can help to reduce stress and anxiety.

Purpose of the Study

There continues to be an extensive gap in the relevant literature with regard to assessing the predictive role of hemispheric orientation (left brain orientation vs. right brain orientation), emotional sensitivity and social adaptation in the well-being and creative imagination of fine artists. Additionally, the study sought to explore the gender differences in hemispheric orientation (left brain orientation vs. right brain orientation), emotional sensitivity, well-being, social adaptation and creative imagination in fine artists and to contribute to the gap in the literature on this area in Pakistan. Therefore, the present study

is aimed at assessing the psychosocial and neurological determinants of creative imagination and the well-being of artists.

Hypotheses

- There would be a significant association among hemispheric orientation, emotional sensitivity, creative imagination, well-being, and social adaptation of artists.
- Hemispheric orientation, emotional sensitivity, and social adaptation would predict creative imagination.
- There would be significant gender differences among hemispheric orientation, emotional sensitivity, social adaptation, and well-being in artists.
- Social adaptation would mediate the association between hemispheric orientation and creative imagination.

Method

Design and Participations

The study used a correlational research to assess the association among the study variables. The sample of the study was comprised of 200 artists or people from art communities, including (100 males and 100 females). The participant age range was from 18-30 selected through snowball sampling technique. The approach involved the recruitment of those individuals who are professional artists.

Measuring Instruments

Hemispheric Orientation

The Open Hemispheric Brain Dominance Scale (HBDS) is a psychological assessment tool used to measure the degree of left- or right-brain dominance in an individual (Jorgenson, 2015). The scale assesses various aspects of cognitive functioning, such as problem-solving skills, creative thinking, mental flexibility, and visual-spatial abilities. It is typically administered through a questionnaire that consists of a series of questions about how the individual typically

thinks, solves problems, and perceives the world. The results of the assessment can then be used to determine whether the individual is left-brain dominant, right-brain dominant, or balanced in their brain dominance. This scale yielded 21 items and alpha reliability of .78. The inventory consists of 21 items that must be rated on how much you agree with them on a five-point scale where 1=Disagree, 3=Neutral and 5=Agree.

Creativity

The Kaufman Creativity Scale is a standardized assessment designed to measure individual creativity (Kaufman, [2012](#)). It was developed by James C. Kaufman and his colleagues at the University of Connecticut in the early 2000s. The scale consists of 30 items that measure different aspects of creativity, such as divergent thinking, originality, and fluency. Respondents are asked to rate themselves on each item on a 5-point scale. Scores range from 0 to 5, with higher scores indicating higher levels of creativity. The Kaufman Creativity Scale has been used in numerous studies to assess individual creative potential. Creativity is the least assessed construct, especially in the Pakistani context. Creativity scale was created by Kaufman ([2012](#)) as K-DOCS, which accesses 5 domains of creativity. These scales contain 50 items with 5 Likert levels. Co-efficient Alpha reliability for the K-DOCS ranges from 0.92 for all domains.

Emotional Sensitivity

The Emotional Sensitivity Scale (ESS) is a psychological measure developed by Wall et al. ([2018](#)) to assess an individual's level of emotional sensitivity. The ESS is designed to measure the ability of a person to accurately identify and respond to the emotional components of situations. The ESS consists of twenty-five items that measure the individual's capacity to recognize and respond to their own emotions, the

emotions of others, and their ability to effectively manage their own emotions. Each item has five response options that range from strongly disagree to strongly agree. Scores are then assigned to each response, with higher scores indicating higher levels of emotional sensitivity. The ESS is an effective tool for assessing the emotional sensitivity of individuals and can be used to better understand an individual's emotional functioning and inform interventions.

Psychological Well-being

The Mental Health Continuum-short form would be used. The short form of the Mental Health Continuum (MHC-SF) is derived from the long form (MHC-LF), which consisted of seven items measuring emotional well-being, six 3-item scales (or 18 items total) that measured the six dimensions of Ryff's ([1989](#)) model of psychological well-being, and five 3-item scales (or 15 items total) that measure the five dimensions of Keyes' (1998) model of social well-being.

Procedure

Approval for the study was sought through the Institutional Ethics Review Board of Government College University, Lahore. The participants were approached through their professional circles. Information was provided to them about the study's purpose and their rights to confidentiality and anonymity. Once the specified number of participants had completed the questionnaires, data analysis phase was initiated. Data analysis was done using undermentioned statistical analyses.

Data Analysis

Data analysis was done on SPSS 21.0. The tests used were Pearson Product Moment Correlation, Independent Sample t test, Multiple Regression Analysis, ANOVA and Mediation Analysis

Results and Data Analysis

Table 1. Descriptive Statistics of Demographic Variables of the Sample

Variables	N	%
Gender		
Male	33	16.5
Female	167	83.5
Education		
Intermediate	27	13.5
Graduation	142	71.0
Post-Graduation	31	15.5
Institution		
Private	83	41.5
Public	117	58.5
Age		
18-22	132	66.0
22-26	49	24.5
26-30	19	9.5

Note. N=200

Table 2. Psychometric properties of Variables

Variables	M	SD	α	No. of Items
HO	74.47	8.91	.70	21
ES	53.4	6.63	.76	19
CI	164.2	21.02	.92	50
SA	39.93	8.26	.78	22
WB	84.10	10.3	.72	18

Note. M= Mean, SD= Standard Deviation, α = Reliability coefficient, HO=Hemispheric orientation scale, WB=Psychological Wellbeing Scale, ES= Emotional Sensitivity scale, CI= Creative Imagination, SA= Social Adaptation

Reliability analysis was conducted to see the reliabilities of the Hemispheric orientation scale, Well-being scale, emotional sensitivity scale, creative imagination scale, and Social adaptation

scale. Creative imagination had the highest reliability of .92 followed by social adaptation scale, emotional sensitivity, well-being and hemispheric orientation scale.

Table 3. Correlation Matrix among Hemispheric orientation, Emotional sensitivity, Creative Imagination, SocialAdaptation and Well-Being (N=200)

S. No	Variables	1	2	3	4	5
1	HO	—	.10**	.30**	.14*	-.001
2	ES	—	—	-.09*	-.13	-.05**
3	CI	—	—	—	.39**	0.04

4	SA	—	—	—	—	.071
5	WB	—	—	—	—	—

** $p < .01$, * $p < .05$

Note. HO= Hemispheric Orientation, ES= Emotional Sensitivity, CI= Creative Imagination, SA= Social Adaptation and WB= Wellbeing

The result of Pearson Product Moment Correlation indicates that Hemispheric orientation has a statistically significant positive correlation with Emotional sensitivity ($r = .10$, $p < .01$), with creative imagination ($r = .30$, $p < .01$),

with social adaptation ($r = .14$, $p < .05$), emotional sensitivity was correlated with creative imagination ($r = -.09$, $p < .05$), with well being ($r = -.05$, $p < .01$), creative imagination was correlated with social adaptation ($r = .39$, $p < .01$).

Table 4. Regression to Assess the Predictors of Creative Imagination (N=200)

Variable	Model 1		
	B	B	SE
Constant	110.25		11.93
Hemispheric Orientation	.72*	.30	.59
Emotional Sensitivity	-.41	-.13	.21
Social Adaptation	.88*	.34	.20
R ²	.22		
DR ²	.21		

Step 1: $F(3, 196) = 19.29$, $p = .000$

Table 4 indicates the level of contribution of hemispheric orientation in terms of the prediction of creative imagination. The results showed that hemispheric orientation significantly predicted ($B = .72$, $p < .05$). Moreover, it was found that social adaptation significantly

predicts ($B = .88$, $p < .05$). However, emotional sensitivity did not have any role in the prediction of creative imagination. R^2 was .22 which indicates that the independent variables accounted for 11 % variance in the dependent variable i.e. creative imagination.

Table 5. Independent Sample T-test

Measures	Men	Women			95% CI		Cohen's d
	M(SD)	M(SD)	t(12)	P	UL	LL	
HO	74.20(8.02)	74.20(4.92)	1.026	1.698	5.09	-1.067	0.28
ES	51.67(6.74)	53.77(6.58)	-1.1673	1.259	0.377	-4.588	0.31
CI	161.9(24.02)	164.6(20.42)	-0.674	4.01	5.207	-10.609	0.12
SA	41.2(8.18)	39.6(8.27)	0.995	1.57	4.67	-1.53	0.19
WB	86.03(8.8)	83.7(10.57)	1.18	1.965	6.192	-1.557	0.23

Note. N= 300. (Males= 165, Females=135), HO=Hemispheric Orientation, ES=Emotional Sensitivity, CI=Creative Imagination, SA=Social Adaptation and WB=Wellbeing

Independent sample t test was performed to assess gender differences on hemispheric orientation, emotional sensitivity, creative imagination, social adaptation and well-being.

The results showed that there are no significant gender differences among the participants with regard to these constructs.

Table 6. Mediating Effect of Social Adaptation on the Association between Hemispheric Orientation and Creative Imagination (N=200)

Measures	B	SE	p
Step 1 (Path c)			
Outcome: CI			
HO	.60	.14	.000
Step 2 (Path a)			
Outcome: SA			
HO	.13	.06	.000
Step 3 (Path b)			
Outcome: CI			
SA	.91	.16	.001
(Path c')			
Mediator: SA			
Predictor: HO	.12	.06	.002

Note: HO= Hemispheric Orientation, SA= Social Adaptation, CI=Creative Imagination, B=standardized coefficient, * $p < .05$, ** $p < .01$

Mediation analysis via the Preacher and Hayes method was used. The assumptions for conducting a mediation analyses were checked, and the criteria were met. The path c exhibits the predictive effect of hemispheric orientation on creative imagination without controlling for the influence of social adaptation while c prime path shows that with the inclusion of the mediating variable, the predictive impact of hemispheric orientation on creative imagination remained significant. The findings thus show that social adaptation had a partial mediating effect on the association between hemispheric orientation and creative imagination ($B = .12$, $p < .002$).

Discussion

The purpose of the study was to assess the relationship between hemispheric orientation, emotional sensitivity, creative imagination, well-being and social adaptation in fine artists. The results of the study provided numerous important findings with regard to these relationships. The

findings also provided a wide range of insights with regard to the role of hemispheric orientation, emotional sensitivity and creative imagination and the mediating role played by social adaptation.

Firstly, it was hypothesized that there would be a significant association among hemispheric orientation, emotional sensitivity, creative imagination, well-being and social adaptation. The results of the study offered a partial confirmation of this hypothesis. Specifically, the results of the present study showed that hemispheric orientation was significantly and positively associated with emotional sensitivity, creative imagination and social adaptation. Emotional sensitivity was also found to be negatively associated with creative imagination and well-being. These findings are backed by a number of studies focused on assessing the mental health and well-being of artists. Aberg et al. (2017) found that right-brain dominance is

associated with creativity not only in artists but also in other individuals. Lindell and Kidd (2011) also identified the positive association between right brain orientation with emotional sensitivity. There is also evidence to show that individuals who have a right brain orientation are marked for having a high social adaptation. It is also pertinent to note that right-brained individuals are able to engage more with other individuals, are sociable and are able to engage in higher levels of structured interactions. Research done in the domain of neuroscience has also found that individuals who have a right brain orientation are more sociable, interactive and are easy to get along. Brain imaging studies have linked extraversion, approach behaviour and the production of positive emotional states to the dorsolateral prefrontal cortex (DLPFC) (Grim et al., 2012).

Research findings have shown that hemispheric orientation (right brain, left brain orientation) is associated with emotional sensitivity. However, right brain orientation is more closely associated with creative imagination (Bong et al., 2017). Another research also reported that right brain orientation is associated with creativity. The study has shown that both the left and right hemispheres of the brain are linked with the different emotions of the individual. Whereas, the right brain hemisphere may be related to the difficulty with coping and regulating emotions. It has also been reported that the individuals with left brain hemispheric dominance have considerable control on their impulses whereas the individuals with right-brain hemispheric dominance have lower control on their impulses.

Secondly, it was hypothesized that hemispheric orientation, emotional sensitivity and social adaptation would predict psychological well-being. The results of the present study did not confirm this hypothesis. However, the third hypothesis that hemispheric orientation, emotional sensitivity and social adaptation would predict creative imagination was confirmed. Specifically, the results found that hemispheric

orientation and social adaptation significantly predicted creative imagination. Research has indicated that right brain orientation fosters the level of creativity (Aberg et al., 2017). Kenett et al. (2018) have also found that individuals who have a right brain orientation are marked for having a creative orientation. Guess et al. (2019) have also shown that individuals who have a right brain orientation are able to pursue higher levels of intelligence and are also able to exhibit higher levels of creativity. The professional artists identified in Cuba are highly creative and are also quite sociable.

It was also hypothesized that there would be significant gender differences among hemispheric orientation, emotional sensitivity, well-being, social adaptation and well-being in artists. The results of the study, however, did not offer a confirmation of this hypothesis. The research evidence on this area has also indicated mixed findings in this regard with some studies showing the existence of significant gender differences in relevance to these constructs while others showing that no such difference exists (Cho, 2017; Huang et al., 2020; Jia et al., 2020). The present study also hypothesized that social adaptation would mediate the association between hemispheric orientation and creative imagination. The findings of the present study offered a confirmation for this mediating effect. Though there is limited evidence with regard to social adaptation and its mediating effect on hemispheric orientation and creative imagination, still the direct impact of social adaptation in promoting creative imagination has been identified extensively (Barysheva & Matyuschicheva, 2019; Yakymchuk et al., 2019). It is critical to note that social adaptation, in the present study, was identified as having a partial mediating effect, which indicates that there might be other potential variables which might account for a majority of the variance in this relation. Apart from this, it is pertinent to understand how the level of social intelligence in artists allows them to enhance their creativity and

how the neuro-scientific correlates of creativity need to be understood more extensively in artists.

Limitations

The data for the study was collected online through the usage of snow ball sampling technique. Though data collected online is often marked for being robust but reliance on snow ball sampling limited access to a large sample size. The researchers had problems in terms of gathering such a large amount of data. However, it was necessary for increasing the external validity of the findings. The study was correlational nature. It has established associations among hemispheric orientation, emotional sensitivity and creative imagination in the well being of fine artists. However, the study cannot be classified as having a causal association.

Implications

The present study has contributed towards a better understanding about the relationship among hemispheric orientation, emotional sensitivity and creative imagination in artists. Also, the finding would contribute to mediating role of social adaptation in fine artists. This study has also contributed to fill the gap in literature the role of hemispheric orientation and its relationship with emotional sensitivity and creative imagination in the well-being of fine artists. The media also needs to come forward in terms of arranging talk shows and programs with mental health experts in order to provide more awareness to aspiring students pursuing fine artists and even for artists. There is also limited literature in Pakistan with regard to the mental health and functioning of artists. The findings can also encourage students towards pursuing studies and researches in the domain of fine arts. Apart from this, the present study warrants the need of conducting more extensive neurological investigations especially with regard to the hemispheric orientation of artists. It is also recommended that more experimental studies

need to be conducted in Pakistan using artists and students enrolled in such disciplines with regard to assessing the causal association of hemispheric orientation with creative imagination, well-being and emotional sensitivity and the mediating effect of social adaptation.

Conclusion

It is thus concluded that hemispheric orientation and social adaptation significantly predicted creative imagination of fine artists. The findings also showed that right brain dominance is identified extensively in fine artists which in turn predicts their creative imagination. Though the study used a correlational research design and did not conduct experimentation to establish causality but still the findings provide a wide range of insights into the association of right brain orientation and creativity in artists. The results also showed that there are no gender differences in fine artists in terms of hemispheric orientation, social adaptation, emotional sensitivity, creative imagination and well-being. This finding contributes towards the literature which indicates that male and female artists are similar to one another with regard to their creativity, social adaptation, emotional sensitivity and well-being. This finding might also be used to assert that gender has no significant role to play in relevance to the right brain-left brain debate and in terms of their creativity, social adaptation, emotional sensitivity and well-being.

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