A Correlation Analysis on the Depression and the frequency of engagement in Creative Activities

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Abstract

This study aims to establish the correlation between depressed levels and creativity participation and find out if people with higher levels of depression participate in creativity activities. Participants were self-selected from a range of ages, backgrounds, mental health, depression, and creative activity, and completed questionnaires. Quantitative analysis was the main method adopted in the study; thus, the study used Spearman's rank correlation, chi-square tests and the Kruskal-Wallis tests to establish valid relationships. It was again evident that patients who self-reported moderate to severe levels of depression are into years of expressive and visual arts hence hinting at an attempt at creative solutions to combat distress. Moreover, the needs and preferences of creative domains vary depending on the mental health diagnosis; for example, dance for anxiety and literary arts for affective disorders. This work adds to the scholarship on how creativity could be used to enhance the role of self-empowerment as a healing mechanism in mental health interventions.

Keywords: **[** ***Depression, Creativity, Mental Health, Creative Activities, Correlation Analysis]***

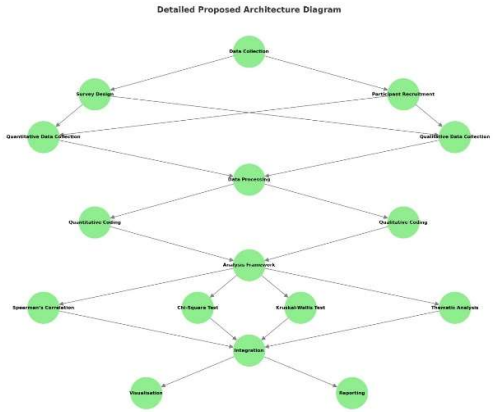
1.Introduction

This work aims to establish whether depressive symptoms are positively or negatively associated with creative involvement. It also examines how patterns of creative engagement link to mental health diagnoses, and whether certain diagnoses predict certain kinds of imaginative involvement. Depression, one of the common psychiatric disorders, affects an individual's mood, energy level and motivation and how such a person is capable of performing ordinary activities. Innovation and self-achievement are part of human qualities linked to creativity meaning the generation of new thoughts, ideas, or methods. Looking at history it seems that among creative personalities there might be a positive relationship between mental problems and creativity leaving questions as to how for example depression may affect creative performance.

The first aim of this research is to identify if people having more depressive symptoms are involved in creative activities more often and if the mental health disorders are related to the specific preferences of the creative domains. By identifying these relationships, the author's goal for this study is to establish potential trends in mental health and creativity.

The conclusions made in this research might have major ramifications, which would help the argument that creative activities can be used as interventions for depression. Additionally, this study may have implications for the underlying psychological process of creativity in Mental Health Care, Creative Education for students, and Policy. This study contributes to filling the gaps in the current state of the research discussing the relationships between mental health and creativity by, inter alia, using diverse samples and investigating multiple creative domains; in turn, the study seeks to promote well-being through creativity and individualised mental healthcare.

Proposed Architecture Diagram



2.Literature Review

2.1 Introduction

Studying the correlation between mental health and creativity is widely known – especially in the context of understanding how depression impacts creativity. In a review of the temperamental effects of depression on creativity, this chapter summarizes past literature; discusses prior approaches, and reveals the lacuna that this study seeks to fill.

This paper focuses on the psychological effects that depression has on creativity.

The literature review findings indicate that there is an interaction between depressive symptomatology and creativity. There are some theories like Andreasen (2008) indicating that mood disorders may lead to increased creativity as such users gain profound self-observation. On the other hand, self-reported depression may lead to disruptions in attention and executive control and therefore could be detrimental to the creative process. According to Forgeard (2013) and Richardson and Mallon (2001), a moderate level of depression can lead to increased creative endeavour as a way of dealing with depression but when depression is severe, there is low motivation for creativity.

2.2 Research Methodologies Used in Previous Research

Research employing a quantitative approach incorporates instruments such as the Beck Depression Inventory and the Torrance Tests of Creative Thinking which facilitate computation of coefficient of depression and creativity. Interviews and thematic analysis are more characteristic of the qualitative approach while the mixed method approach employs quantitative as well as qualitative in its approach to studies (Convoy, 2002; Kumpulainen & Lipponen, 2011).

2.3 Gaps in Current Research

- Population Diversity: The majority of research operates at the efficacy level and many are restricted to clinical or a particular kind of professional population. More sample diversity is required in research.
- Specificity of Creative Domains: By studying creativity we can identify only one general construct, while ignoring the fact that creative processes can be quite different depending on a specific domain, such as painting or music.
- Types of Mental Health Diagnoses: Hence for other mental health conditions it's clear that depression affects creativity but the extent and nature of this impact are not investigated as much. It is suggested that wider research may assist in creating specific treatments.
- Bidirectional Relationships: Depression is most often studied about creativity, and few studies exist which investigate whether creative activities can improve depressive states. Examining this bidirectional relation might improve therapeutic interventions.

3. Methodology

3.1 Data Collection

3.1.1Participants and Sampling

The participants were 95 people of both genders, aged between 18 and 60, who filled out the questionnaire about their mental health and creative practice sharing it through social media and in the mental health groups. Data was collected from a group of participants with different ages, genders and backgrounds, who spoke English fluently.

3.1.2 **Survey Instrument**

The data were collected using a Google form survey which was split into demographics, self-reported mental health status, participation in creative activity, and a list of coping strategies.

3.2 Research Questions and Hypotheses

3.2.1 Research Questions: Hypothesis Construction Process

The next step involved the formulation of research questions or the research hypothesis which would guide the study.

Main Research Question

What is the current state of Knowledge Management in South African organisations?

Subsidiary research questions

1. To what extent do South African organisations benefit from implementing Knowledge Management?

Main Research Question (RQ1)

Can it be postulated that creativity decreases with the level of depression is there a relationship between the level of depression and the frequency of creating activities?

Hypothesis (H1): Depressive symptoms and creative activity frequency of the participants are positively correlated.

Secondary Research Question (RQ2)

When a person is given a mental health diagnosis does the type of given diagnosis impact the areas of creativity?

Hypothesis (H2): There exist various creative fields associated with various mental health diagnoses.

3.3 Data Coding and Preparation

3.3.1. Quantitative Coding

Category variables, including depression, and creative activities were given numerical values. Mental health diagnosis and coping type were treated as dichotomous factors.

3.3.2 Qualitative Data Analysis

Qualitative data with respect to creativity and coping were coded into themes; creative interests, which may include 'Expressive Arts' and coping strategies which included; ' Physical Activities.'

3.4 Data Cleaning

More than this, responses that did not complete the prompt were not considered. Shapiro-Wilk and Kolmogorov-Smirnov tests determine the non-normal distribution of many of the variables used in this study.

3.4 Statistical Techniques

- Spearman's Rank Correlation: Applied to determine the impact of the levels of depression on the frequency of creative activity.
- Chi-Square Tests: Experimentally examined the linkage between and to creative disciplines.
- Kruskal-Wallis Test: Analyse creative activity frequency differences between the sample subdivided into five coping mechanism groups.

3.5 Tools Used

SPSS: Spearman correlation and Chi-square tests for Magnitude of Task.

R: To conduct the Kruskal-Wallis test and for visualization in 'ggplot2'.

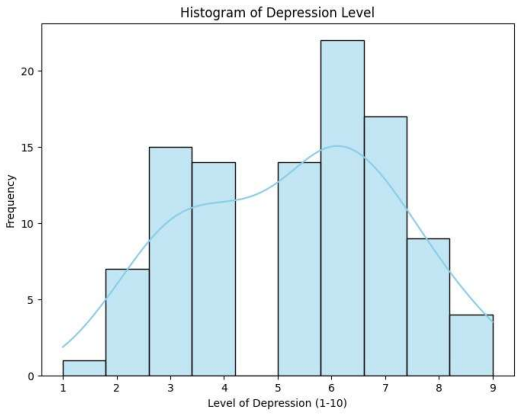
Python: For data wrangling and some of the data visualization techniques including (Pandas and Seaborn).

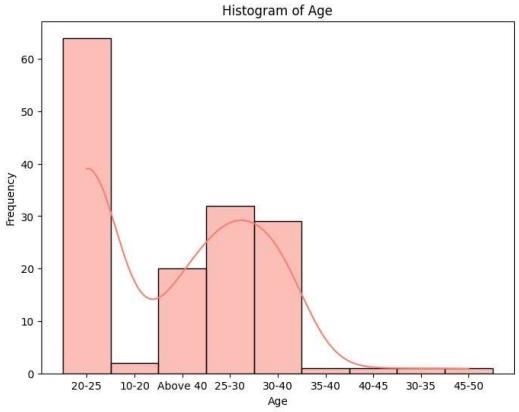
4. Results and Discussions

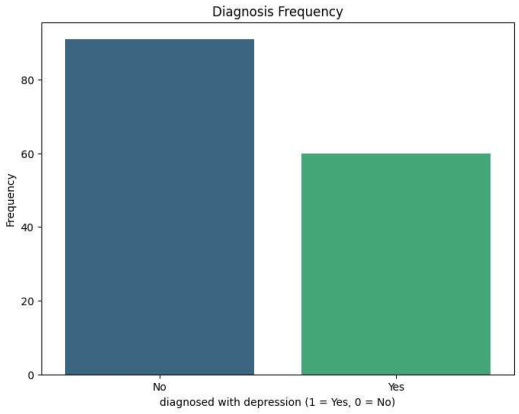
4.1 Descriptive Statistics

Demographics Overview: This Section highlights the participant's characteristics of age, sex, and background information that forms the background to the study.

Variable Distributions: The distribution of levels of depression and future creative engagement are examined next in order to provide a context for the analysis of the data.







4.2 Correlation Analysis

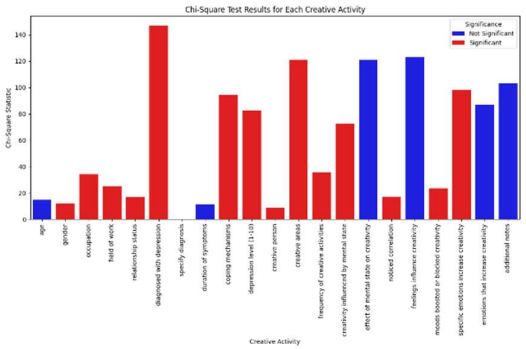
Spearman's Rank Correlation: Spearman correlation analysis showed the direct relationship between the depression level and engagement in the frequency of creative activities, which indicated a higher level of depressive symptoms among the people engaging in creative activities more frequently.

Interpretation of Results: This finding supports the suggested hypothesis that creativity may serve as a way of managing depressive symptoms, and data visualization helps to illustrate this pattern.

4.3 Chi-Square Analysis

Association with Creative Domains: Chi-square analysis showed that there was a dependence between the mental health diagnosis and the type of creative domain.

Diagnosis-Specific Preferences: Preliminary findings involving anxiety intuition exhibited a bias for performing arts while mood disorder patients had a fondness for literary arts and depression patients had the same for visual arts which was intriguing as preferences were inclined according to the disorder.



4.4 Kruskal-Wallis Test on Coping Mechanisms

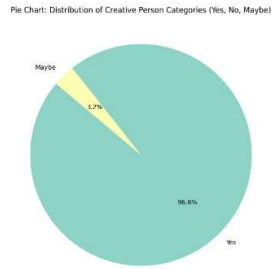
Frequency of Creative Engagement: K-W statistics were calculated to indicate that participants who had chosen creativity as their main coping strategy, spent more time in creativity-related activities than those who embraced other coping styles.

Comparison Across Coping Groups: Bar charts are utilized to compare the usage frequency between different coping groups of creativity and other types of coping like social support activity where it clearly indicated that this creativity emerging as a major coping strategy as compared to others.

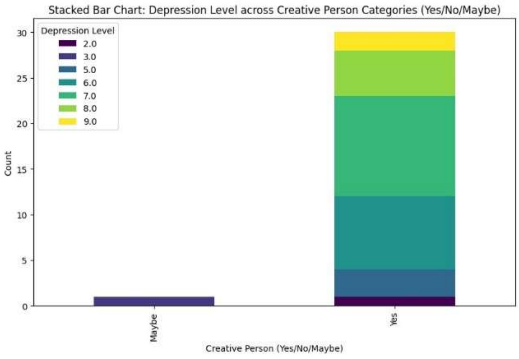
4.5 Data Visualizations

Pie Charts for Creative Domain Preferences: Pie charts allowed for illustrating the

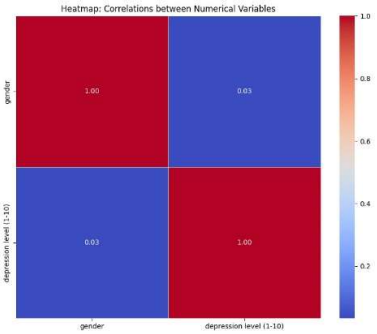
distribution of participants' preferences concerning creative domains depending on their mental health diagnosis; they also helped reveal the preeminence of some creative domains in each diagnosis.



Stacked Bar Charts for Coping Mechanism Engagement: Engagement frequencies of the coping mechanism groups were analyzed using stacked bar charts, which represented participants who used creative outlets as the most frequent users of the coping mechanisms.



Heatmaps for Correlation Insights: Depression, frequency of creative activity, and domains of creativity were mapped using heat maps which provided a better interpretation of the strength and direction of the relationships.



4.6 Discussion and Implication Discussion

Therapeutic Potential of Creativity: The study also indicates that creativity can help in a way that clients with depressive symptoms experience helpful therapeutic coping.

Tailored Mental Health Interventions: Implications of this study include the possibility of a tailored mental health treatment approach with art therapies for the improvement of quality of life for clients diagnosed with mental disorders of different categories.

5.Conclusion & Future works

5.1 Summary of Findings

In this research, the correlation of depression levels with the frequency of artistic practice was investigated to determine whether an increase in depressive symptoms influences the risk of creativity. The findings revealed:

1. Weak but Statistically Significant Correlation: On correlating the degrees of depression with the frequencies of participants' creative activities performed, a relatively small positive link (Spearman's rho = 0.8398, $p < 0.001$) was therefore determined. Though it is not very strong, the relationship is evident that a higher level of depressive symptoms is linked with more creative activity.

2. Demographic and Diagnosis-Based Influences: The Chi-square tests revealed some impacts of creativity on mental health diagnosis providing us with some significant correlations of the diagnostic results with the certain fields of creativity. As mentioned earlier, in one study persons with anxiety disorder had a propensity for arts-movement and those with mood disorders had a penchant for literary genres. Gender, occupation, and marital status were also found to be associated with the likelihood of having depression thus social /environmental factors also influence depression and creative activities.

3. Non-Normal Distribution of Depression and Creative Activity Frequency: In line with our expectations, both the distribution of depressive scores and creative frequency were non-normal, indicating sample variation

in depressive reactions and creativity. This was executed using non-parametric tests, which suggests that the association between these variables is not straightforward.

5.2 Significance of the Study

This series of studies brings insight into the mental health and creativity literature and suggests that creative engagements can be beneficial for those with depressive symptoms. Key significance points include:

- Creative Engagement as a Coping Mechanism: These results correlate with what has been suggested about creativity as an individual's creative activities that may be used as a form of emotional release. This insight is most appropriate for mental health-related interactions because creativity may supplement conventional healthy practices.

- Guidance for Practitioners: Counsellors and therapists may prescribe creative activity as an adjunct therapy form since it is not often recommended to Drs prescribe it as a primary treatment since it is not a drug modality, but could be useful for patients with mild to moderate depression. Practitioners seeking to help patients manage their mental health should allow the patients to pursue enacted self-assignments that would positively express their feelings and thoughts.

- Implications for Educational and Social Policies: An understanding of creativity in relation to mental health that is positive could guide the deliberate design of educational curricula as well as social programs that enhance people's well-being. Other stakeholders that might reap big are the educational institutions in regard to the further incorporation of creative arts in students' learning schedules to enhance their well-being.

5.3 Limitations

While the study offers valuable insights, several limitations need to be acknowledged:

1. Sample Bias: The work adopted convenience sampling, especially from online sources; therefore, the results may not be generalizable. This might mean that individuals who are willing to engage in the study are part of the society that is inapt in a digital platform hence the results will be skewed.

2. Self-Report Data and Bias: Information collected was based on self-report and therefore vulnerable to respondent bias of perception as well as social desirability. The participants could have over-reported or under-reported their depressive symptoms and creative activity frequency biases could also have occurred in completing the questionnaires.

3. Cross-Sectional Design: Data was collected at one specific point in time as this was a cross-sectional research type. This design means that we cannot prove that depressive symptoms affect the frequency of creative activity or vice versa.

4. Non-Specific Creative Domains: While the study showed that choice for imaginative domains differs per diagnosis, it failed to give a comprehensive analysis of how every particular domain has a relation with depression, whether it be writing or painting, for example. Consequently, such ambiguity hinders the putative study from being highly relevant to the development of specific therapeutic approaches.

5.4 Future Works

Future research should consider addressing these limitations to build on the current study's findings:

1.Longitudinal Studies: Future research could use a longitudinal design to provide a clearer picture of the processes through which depression reduces creativity further, or, perhaps, in which aspects of depression might facilitate increased creativity. This would help in establishing whether the deployment of creativity in a continuous manner benefits mental health in the long run.

2.Objective Measures of Depression and Creativity: It is recommended to include objective data, including the assessment of depression severity by the clinician-administered scale, and observers' ratings of creativity. This would decrease the amount of

information that is reported to the organization by individuals and minimize bias.

3.Exploring Specific Creative Domains: Future research could also compare it with other creative domains, for example, music, drawing, painting, or dancing, and see the difference in impact on depressive symptoms. The allocation of more creative therapies could be made contingent on particular domains where possible gains are most apparent, based on learning results.

4.Diverse and Larger Samples: Thus, extending the scope to cover a wider part of the population would improve the generalizability of results. You may focus on a certain population: adolescents, seniors, people with different cultural backgrounds – it will probably reveal different connections between psychological state and creativity.

5.Experimental Studies on Creative Engagement: Future research can build from more experimental designs with precise creativity defined as one of the treatment factors. This could help to explain the nature of the difference and evaluate creative endeavours as a treatment for reducing depressive symptoms.

5.5 Conclusion

This present research establishes that there is an interaction between levels of depression and the frequency of engaging in creative activities; the results point to the possibility that those with depressive symptoms employ creativity in the same way that people with high self-esteem may employ positive affect. The study results capture the elements of creativity as relating to therapeutic activity and the heterogeneity of demographic and psychosocial processes about this concept. As such, creative activities are postulated to have a beneficial role as complementary interventions for mental health disorders but the extent and scope of creative interventions for various populations and specific creative outlets remains to be investigated adequately.

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