ORIGINAL ARTICLE

Impact of Implementing Structured Compensatory Methods on Knowledge and Awareness of Cognitive Dysfunction Management Among Neurological Disorder Patients in Vijayapur Hospitals

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Abstract

Background: Cognitive impairment hinders thinking, learning, memory, and decision-making, with symptoms like memory loss, poor concentration, and mood changes. It can result from neurotoxicity, ischemia, or neurodegenerative diseases like Alzheimer's and Parkinson's.

Objectives: The study aimed to assess knowledge about cognitive impairment, evaluate the effectiveness of structured compensatory techniques, and analyze the relationship between knowledge scores and socio-demographic variables.

Methodology: The study assessed the effectiveness of structured compensatory techniques in improving knowledge about cognitive impairment among neurological patients in Vijayapura hospitals. A one-group pre-test post-test design was employed, with participants being adults literate in Kannada or English and hospitalized for neurological conditions. Exclusions included those unwilling to participate or with severe cognitive impairments. Data were gathered using a validated self-administered questionnaire over four weeks. Pre-test scores (mean 15.61) showed significant improvement post-intervention (mean 18.80, *P* < 0.05), highlighting the importance of educational programs to enhance knowledge in this group.

Results: Pre-test results revealed a mean knowledge score of 15.61 (SD ± 3.86), which improved to 18.80 (SD ± 3.85) post-intervention. Before the intervention, 76.7% (46 respondents) had average knowledge, 15% (9) had good knowledge, and 8.3% (5) had poor knowledge. Post-intervention, 68.3% (41) displayed average knowledge, while 31.7% (19) showed good knowledge. A paired t-test indicated a statistically significant improvement in scores (*P* < 0.05; *t* = 10.11).

Conclusion: The study revealed a significant improvement in knowledge about cognitive impairment and its management after implementing structured compensatory techniques, emphasizing the importance of educational programs for patients with neurological disorders.

Keywords: Cognitive impairment, Neurological disorders, Structured compensatory techniques, Patient education, Knowledge assessment

Introduction

Health is defined as the level of functional and metabolic efficiency of a living being, encompassing the mind, body, and spirit. The World Health Organization (WHO) expanded this definition in 1946 to describe health as "a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity".[1] Mental health, as defined by the American Psychiatric Association (1980), involves achieving success in work, love, and creativity, alongside the ability to resolve conflicts effectively.[2] In contrast, mental illness is characterized by maladjustment, resulting in a disharmony that impairs an individual's ability to meet basic human needs.[3] The WHO further defined mental illness in 2001 as clinically significant conditions marked by alterations in thinking, mood, or behavior that cause personal distress or impaired functioning.[4]

Cognitive impairment refers to difficulties in cognitive functions such as memory, reasoning, and decision-making, affecting individuals across their lifespan. It can arise from various factors, including genetic syndromes, prenatal exposure to toxins, trauma, and neurodegenerative disorders like Alzheimer's disease.[5] Neurological disorders, which affect the brain and nervous system, can lead to symptoms such as paralysis, confusion, and cognitive decline.[6] Early diagnosis and intervention are crucial for managing these disorders and improving patients' quality of life.[7]

Given the increasing prevalence of cognitive impairment and neurological disorders, particularly in low- and middle-income countries, there is a pressing need for effective educational interventions. The WHO's Intersectoral Global Action Plan emphasizes the importance of access to care and treatment for neurological disorders, which are a leading cause of disability and mortality worldwide.[8] This study aimed to evaluate the effectiveness of structured compensatory techniques on knowledge regarding cognitive impairment and its management among patients with neurological disorders at selected hospitals in Vijayapura.

Materials and Methods

This study employed a one-group pre-test post-test design to evaluate the effectiveness of structured compensatory techniques on the knowledge of patients with neurological disorders regarding cognitive impairment and its management. This study was conducted at selected hospitals in Vijayapura, including a purposive sample of 60 participants who met specific inclusion criteria (ability to read/write in Kannada or English and residing in the hospital) and exclusion criteria (unwillingness to participate).

A self-administered knowledge questionnaire, comprising socio-demographic data and a 30-item knowledge assessment, was developed with content validity confirmed by expert review (100% agreement) and reliability demonstrated through a split-half coefficient of 0.893. A pilot study involving six participants tested the feasibility of the data collection process and did not reveal significant issues. Data collection occurred over four weeks through one-on-one interviews, following permission from district health officers, and participants provided informed consent before completing the questionnaire. Data analysis involved descriptive statistics (e.g., frequency, mean, standard deviation) and inferential statistics, including Chi-square tests, to examine associations between knowledge and socio-demographic variables at a 0.05 significance level. The required sample size was determined via power analysis, yielding a suggested sample size of 53, ultimately leading to the inclusion of 60 participants in the study. This structured methodology ensured the assessment of knowledge levels regarding cognitive impairment among patients with neurological disorders, emphasizing validity and reliability in both data collection and analysis.

Results

The study analyzed the socio-demographic characteristics of the respondents, revealing that a substantial portion (45%) earned below Rs. 10,000 per month. The majority of participants (38.3%) were aged between 31 and 40 years, with a demographic composition that was predominantly male (63.3%) and primarily Hindu (51.7%). Most respondents resided in nuclear families (56.7%) and urban areas (60%).

In assessing knowledge related to cognitive impairment and its management, the pre-test mean score was 15.61, indicating an overall average knowledge level. Following the implementation of structured compensatory techniques, the post-test mean score increased to 18.80, signifying a noteworthy improvement in knowledge. As a result, the percentage of respondents demonstrating good knowledge increased from 15% in the pre-test to 31.7% in the post-test. Statistical analysis confirmed a significant difference between pre-test and post-

test scores, thus supporting the effectiveness of the intervention in enhancing knowledge.

Additionally, the study aimed to evaluate the association between respondents' knowledge levels regarding cognitive impairment and selected socio-demographic variables using the Chi-square test. The hypothesis posited that a significant association would exist at the 0.05 level of significance.

The analysis revealed a statistically significant association solely for gender, with a Chi-square value of 6.82. In contrast, other socio-demographic variables, including age, religion, type of family, residence, marital status, educational qualification, occupation, and family income, did not demonstrate significant associations with knowledge levels, as indicated by their respective Chi-square values.

These findings partially support the hypothesis, suggesting that gender is a significant factor influencing knowledge about cognitive impairment and its management, while other socio-demographic factors do not exhibit a significant correlation.

Discussion

This study aimed to evaluate the effectiveness of structured compensatory techniques on knoWWWwledge regarding cognitive impairment and its management among patients with neurological disorders in selected hospitals at Vijayapura. The demographic analysis revealed that a significant portion of the respondents (38.3%) were aged 31-40 years, with a male predominance (63.3%) and a majority belonging to the Hindu faith (51.7%). The findings also indicated that most participants resided in nuclear families (56.7%) and urban areas (60%) while facing economic challenges, as evidenced by 45% earning below Rs. 10,000 per month. This demographic profile emphasizes the necessity of tailored educational interventions for this population, particularly given that cognitive impairment can significantly affect daily functioning and quality of life in patients with neurological disorders.[9]

The evaluation of knowledge scores demonstrated a notable improvement following the implementation of the compensatory techniques, moving from a pre-test mean score of 15.61 to a post-test mean score of 18.80. This indicates that the structured intervention effectively enhanced participants' understanding of cognitive impairment and its management. The significant

difference in scores, confirmed by a paired 't' test (P <0.05), aligns with previous studies that advocate for educational strategies as vital components in healthcare settings, particularly for chronic conditions.[10,11]

Furthermore, the association analysis using Chi-square tests revealed a statistically significant relationship between knowledge levels and gender, suggesting that male respondents had higher knowledge scores compared to females. This finding aligns with other research that indicates gender disparities in health knowledge, highlighting the potential need for gender-sensitive approaches in educational programs.[12] However, no significant associations were found with other socio-demographic variables, indicating the complexity of factors influencing health knowledge.[13]

Overall, this study underscores the importance of structured educational interventions in improving knowledge among patients with neurological disorders, while also acknowledging the need for ongoing research to explore the underlying causes of knowledge disparities among different demographic groups. These findings contribute to the broader dialogue on improving health literacy in vulnerable populations and suggest actionable strategies for healthcare practitioners in similar settings.

Conclusion

This study demonstrates the effectiveness of a structured teaching program in enhancing the knowledge and attitudes of primary school teachers regarding child mental disorders. The significant improvements observed among participants underscore the critical need for ongoing mental health education to cultivate supportive learning environments for children. By equipping educators with the necessary knowledge and skills to identify and address mental health issues early, we can facilitate timely interventions that lead to better academic and emotional outcomes for students. Future research should focus on exploring innovative training approaches and assessing their long-term impacts on both educators and the children they serve.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest

Nil

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