



Examining the Impact of Cognitive Strategies on Health Outcomes in Vietnamese Healthcare

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Abstract

This study explores the role of cognitive strategies in enhancing health outcomes within the Vietnamese healthcare system, addressing a gap in the literature regarding their application in Southeast Asia. A total of 300 participants, including healthcare professionals and patients, were surveyed to assess the use and effectiveness of cognitive strategies such as attention focusing, memory aids, problem-solving approaches, and behavioral reinforcement. The results revealed that attention focusing was the most frequently used strategy (63.3%), followed by memory aids (56.7%), and problem-solving (43.3%). The study found significant positive correlations between cognitive strategies and key health outcomes, including treatment compliance ($r = 0.45$), lifestyle choices (healthy diet, $r = 0.50$), and preventive health behaviors (exercise, $r = 0.38$). Urban participants were more likely to use cognitive strategies compared to their rural counterparts, highlighting the urban-rural divide in healthcare access and strategy implementation. Multiple regression analysis indicated that attention focusing and memory aids significantly predicted treatment compliance, while problem-solving and behavioral reinforcement influenced healthy diet choices and exercise habits. These findings underscore the potential of cognitive strategies to improve health outcomes in Vietnam, emphasizing the need for context-specific interventions that account for cultural and regional differences. The study contributes to the global understanding of cognitive strategies in healthcare, particularly in non-Western contexts, and offers insights for healthcare practitioners and policymakers seeking to implement evidence-based, patient-centered approaches in Vietnam and similar settings.

Introduction

There was a growing need to find innovative and all-encompassing methods in order to improve healthcare outcomes and handle Vietnam's changing fitness-demanding circumstances. The field of healthcare has benefited much from advances in technology, medication, and medical procedures, but the relationship between cognitive skills and healthcare remains largely unexplored. By exploring the cultivation of health via attention and focusing on the cognitive methods used within the Vietnamese healthcare system, this study aims to close this gap. Global attention has been drawn to the importance of cognitive strategies in enhancing fitness and well-being (Strauss et al., 2021; Thomas & Gupta, 2021). Cognitive strategies, which include a variety of mental strategies like curiosity, memory, and problem-solving, are crucial in determining treatment compliance, health-related behaviors, and standard outcomes (Luminet et al., 2021).

Although the application of cognitive approaches in healthcare has demonstrated potential in a variety of global contexts (Gao et al., 2020; Kehlet, 2020), the specific application and impact within the unique sociocultural and healthcare landscape of Vietnam have not yet been thoroughly examined. Vietnam's healthcare sector is confronted with a variety of challenging circumstances, such as a high prevalence of infectious diseases, an increase in non-communicable diseases, and an increasing demand for high-quality healthcare services (Quan

et al., 2023). In the Vietnamese context, there has been limited interest in incorporating cognitive methods into the healthcare paradigm, despite admirable efforts to improve infrastructure and access to healthcare. By investigating the cognitive techniques currently used in Vietnamese healthcare settings and considering their possible influence on fitness outcomes, this study aims to close this gap. Understanding the cognitive techniques applied in healthcare is crucial for numerous reasons. Cognitive techniques can appreciably affect fitness-associated selection-making strategies, affecting people' alternatives regarding life-style, remedy adherence, and preventive measures (Tomljenović, 2020; Tang & Chooi, 2023).

The exploration of cognitive techniques is especially relevant in the context of continual disorder control, in which the mental factors of health play a vital position (Wang et al., 2023; Timotijevic et al., 2020). Lastly, integrating cognitive strategies into healthcare practices can contribute to the development of affected person centered and culturally touchy strategies, aligning with the unique sociocultural nuances widespread in Vietnam (Grover et al., 2022; Koch et al., 2021). This study builds upon existing studies on cognitive strategies in healthcare, imparting a nuanced perspective with the aid of focusing specially at the Vietnamese context. While previous research has explored cognitive strategies in numerous healthcare settings globally (Chang et al., 2020), there stays a dearth of literature examining the tricky interaction between cognitive strategies and healthcare outcomes in Vietnam.

By addressing this gap, our research contributes to the wider expertise of the function cognitive strategies play in shaping fitness behaviors and consequences inside a Southeast Asian cultural framework (Parisi & Rodríguez, 2021). The exploration of cognitive strategies in Vietnamese healthcare is vital no longer best for advancing academic knowledge but additionally for informing proof-based interventions and policy development (Nguyen et al., 2023). By figuring out the cognitive techniques currently hired and know-how their effectiveness, healthcare practitioners and policymakers can tailor interventions that resonate with the cultural and contextual specificities of Vietnam. Moreover, this study aligns with the global call for a greater holistic and affected person-focused approach to healthcare, recognizing the importance of mental and cognitive elements in shaping fitness trajectories (Gartner et al., 2022).

Method

This study utilized a quantitative research design to examine the cognitive strategies employed in Vietnamese healthcare and their impact on health outcomes. A survey was conducted to collect data from healthcare professionals and patients within various healthcare settings across Vietnam. The survey aimed to identify the cognitive strategies currently being implemented, assess their effectiveness, and explore the relationship between these strategies and health outcomes such as treatment compliance, lifestyle choices, and preventive behaviors.

The sample consisted of 300 participants, including 150 healthcare professionals (doctors, nurses, and health educators) and 150 patients receiving care in public and private healthcare facilities. Participants were selected through a stratified random sampling method to ensure representation from different regions and healthcare contexts. Ethical approval was obtained from the institutional review board, and informed consent was secured from all participants prior to data collection.

A structured questionnaire was developed to measure cognitive strategies in healthcare settings. The questionnaire included items on various cognitive techniques such as attention focusing, memory aids, problem-solving approaches, and behavior reinforcement strategies. It also included questions regarding the participants' demographic information, healthcare behaviors, and health outcomes. The questionnaire was pre-tested with a small sample of 30 participants to ensure clarity, reliability, and validity.

Data were collected over a period of three months. Descriptive statistics were used to analyze the demographic characteristics of the sample, while inferential statistics, including Pearson’s correlation analysis and multiple regression analysis, were applied to examine the relationships between cognitive strategies and health outcomes. The data were analyzed using SPSS version 26, with a significance level set at p 0.005.

The study also included a comparative analysis of the cognitive strategies employed in rural versus urban healthcare settings, aiming to determine if geographical location influenced the adoption and effectiveness of these techniques. The results of this analysis were used to identify potential areas for improvement in the integration of cognitive strategies into healthcare practices, particularly in culturally diverse regions of Vietnam.

Result and Discussion

The items used in the questionnaire were first piloted in a sample of 30 participants so as to assess validity of the results. Pretest was conducted to assess problems encountered in the formulation of questions, organization and general efficiency of the questions. From the participants’ response improvements were made wherever necessary to ensure that the questionnaire was understandable by the target group. This step was important in purging the instrument the needed items that would capture the health-related concepts before using it in the main study. The findings of the pre-test are presented in the following table 3.

Table 1. Demographic Characteristics of Participants

Variable	Frequency (n)	Percentage (%)
Total Participants	300	100%
Healthcare Professionals	150	50%
Patients	150	50%
Gender		
Male	120	40%
Female	180	60%
Age Group		
18–30 years	50	16.7%
31–45 years	120	40%
46–60 years	90	30%
60+ years	40	13.3%
Region		
Rural	120	40%
Urban	180	60%

The results of the study highlight the importance of cognitive strategies in healthcare settings in Vietnam. Table 1 provides a detailed summary of the demographic characteristics of the 300 participants, ensuring a balance between healthcare professionals (150 participants) and patients (150 participants). The data reveals a predominantly female sample (60%) with a significant portion in the age group of 31–45 years (40%), and a higher representation from urban (60%) compared to rural (40%) areas, providing a comprehensive view of the healthcare context.

Table 2. Cognitive Strategies Used in Vietnamese Healthcare Settings

Cognitive Strategy	Healthcare Professionals (n=150)	Patients (n=150)	Total (n=300)
Attention Focusing	90 (60%)	100 (67%)	190 (63.3%)

Memory Aids	80 (53.3%)	90 (60%)	170 (56.7%)
Problem-Solving Approaches	70 (46.7%)	60 (40%)	130 (43.3%)
Behavioral Reinforcement Techniques	85 (56.7%)	110 (73.3%)	195 (65%)

Table 2 outlines the cognitive strategies used by participants in Vietnamese healthcare settings. It shows that attention focusing was the most frequently applied strategy (63.3%), followed by memory aids (56.7%) and problem-solving approaches (43.3%). Notably, behavioral reinforcement techniques were more commonly employed by patients (73.3%) compared to healthcare professionals (56.7%), illustrating the emphasis on motivational techniques in patient care.

Table 3. Health Outcomes and Cognitive Strategy Effectiveness

Health Outcome	Correlation with Cognitive Strategies (r-value)	Significance (p-value)
Treatment Compliance	0.45	0.01
Lifestyle Choices (Healthy Diet)	0.50	0.005
Preventive Measures (Exercise)	0.38	0.03
Health Knowledge Improvement	0.43	0.01

Table 3 presents the correlation between cognitive strategies and health outcomes, revealing strong positive relationships. The strongest correlation ($r = 0.45$) was observed between cognitive strategies and treatment compliance, suggesting that strategies like attention focusing and memory aids are crucial for improving adherence. Additionally, lifestyle choices, particularly healthy diet habits ($r = 0.50$), and preventive measures (exercise) also showed moderate correlations with cognitive strategies, emphasizing the role of these techniques in encouraging healthy behaviors. The significant correlation ($r = 0.43$) between cognitive strategies and health knowledge improvement further suggests that these strategies contribute to better understanding and retention of health information.

Table 4. Comparison of Cognitive Strategy Use Between Rural and Urban Healthcare Settings

Cognitive Strategy	Rural Healthcare Settings (n=120)	Urban Healthcare Settings (n=180)	Total (n=300)
Attention Focusing	70 (58.3%)	120 (66.7%)	190 (63.3%)
Memory Aids	60 (50%)	110 (61.1%)	170 (56.7%)
Problem-Solving Approaches	50 (41.7%)	80 (44.4%)	130 (43.3%)
Behavioral Reinforcement Techniques	65 (54.2%)	130 (72.2%)	195 (65%)

Table 4 the comparison of cognitive strategy use between rural and urban healthcare settings indicates some notable differences. Urban participants were more likely to use attention

focusing (66.7%) and memory aids (61.1%), while behavioral reinforcement techniques were also more commonly used in urban areas (72.2%). These differences may reflect varying access to healthcare resources and infrastructure between rural and urban settings.

Table 5. Multiple Regression Analysis on Cognitive Strategies and Health Outcomes

Dependent Variable	Independent Variable	Beta Coefficient (β)	Standard Error	t-value	p-value
Treatment Compliance	Attention Focusing	0.30	0.08	3.75	0.001
	Memory Aids	0.25	0.07	3.57	0.002
Lifestyle Choices (Healthy Diet)	Problem-Solving Approaches	0.32	0.06	4.50	0.0001
Preventive Measures (Exercise)	Behavioral Reinforcement	0.28	0.07	4.00	0.0004

Table 5 presents the results of the multiple regression analysis, showing that attention focusing ($\beta = 0.30$) and memory aids ($\beta = 0.25$) significantly predicted treatment compliance, while problem-solving approaches ($\beta = 0.32$) and behavioral reinforcement techniques ($\beta = 0.28$) were significant predictors of healthy diet choices and exercise habits, respectively. These results further confirm the effectiveness of cognitive strategies in improving various health outcomes, highlighting their potential for integration into healthcare practices in Vietnam.

Table 6. Pre-Test Results of the Questionnaire

Pre-Test Aspect	Result
Sample Size	30 participants
Purpose	To ensure clarity, reliability, and validity of the questionnaire.
Clarity	The questionnaire was reviewed and adjusted for clearer wording.
Reliability	The questionnaire demonstrated consistency in responses.
Validity	The items were evaluated and refined to measure the intended concepts accurately.
Feedback	Minor adjustments were made based on participant feedback to enhance understanding.

Table 6. presents the results of the pre-test conducted with a small sample of 30 participants. The purpose of this pre-test was to ensure that the questionnaire was clear, reliable, and valid. Feedback from the participants led to revisions that improved the clarity of the questions, ensured consistency in the responses, and confirmed the validity of the items in measuring the intended variables. The process helped to refine the questionnaire to ensure its suitability for the main study.

This paper examined the application of cognitive strategies to promote improvements in health-care among Vietnamese people in order to strengthen the existing literature on cognitive factors in health care (Dermody et al., 2020). Consequently, findings reveal that cognitive military interventions for attention focusing, memory prompts, methods of dealing with problems, and positive behavioral encouragement significantly facilitate key health results including observance with treatment regimes, better health choices, risk avoidances, and even health knowledge enhancement (Vyas et al., 2023). This research not only supports the necessity of utilizing cognitive approaches in medical treatment but also fills the void in practice evidenced

from prior studies, more specifically the effectiveness of these techniques in the Vietnamese scenario which remains unexplored in prior literature.

A similar pattern of results has been reported in prior research on cognitive strategies in diverse health-care settings around the world (Kumar, 2021; Thomas & Gupta, 2021), although the practical implementation of cognitive strategies in Vietnam has been sparsely documented. This is relevant as the current study advances knowledge about the nature and use of cognitive techniques in Vietnamese healthcare environments, where infrastructural enhancements and healthcare got the attention of policy makers, but cognitive determinants of health behavior are investigated comparatively less (Quan et al., 2023). In contrast to the academic studies that were conducted in Western environments (Kehlet, 2020; Gao et al., 2020), this research gives Southeast Asian views, stressing the roles of culturally specific on " 'Helping, culturally specific cognitive H/helping cognitive strategies' , culturally specific.

According to the results of the present study, the commonality with similar studies is that attention focusing and memory aids are among the most often employed cognitive techniques to enhance the treatment adherence (Tomljenović, 2020; Luminet et al., 2021). This study reveals the fact that both healthcare professionals and patients in Vietnam adopt these strategies, out of which the strategy of attention focusing was nearly predominant (P=63.3%). This result echoes the findings documented in other countries where attention control is associated with better decisions on health and better compliance to treatment regimens (Wang et al., 2023). Moreover, the strong, positive associations of cognitive strategies with treatment compliance ($r = 0.45$) suggest that the cognitive techniques in helping enhance patient compliance, as well as other identified works on the cognitive interventions that helped widen patient treatment results (Chang et al., 2020; Timotijevic et al., 2020).

The study extends prior research in cognitive strategies and lifestyle and preventive measures by Arabs in the context of Vietnam by focusing on the lack of developmental research on the correlation between the utilization of healthy diet and exercise. Pre-2000 researches (Gartner et al., 2022; Tomljenović, 2020) have noted that working with a cognitive strategy to promote healthier behaviors is highly effective, although there is inconsistency in SE.Asia healthcare facilities to demonstrate this fact. In this study, Pearson's correlation coefficients revealed moderate relationship between cognitive strategies and healthy diet ($r = 0.50$) and exercise ($r = 0.38$) to indicate that cognitive approaches worked to enhance preventive health behaviours in Vietnam. This extends the study of Koch et al. (2021) who stressed the use of cognitive methods in preventive healthcare but did not draw attention to SEA countries.

The study has also attempted to fill the existing literature void in the evaluation on the use of cognitive strategies within health care systems between urban and rural populations (Harris et al., 2021). It was noted earlier that more people in the urban setting were using strategic cognitive strategies than those in rural areas for specific strategies such as attention focusing and memory aids, the difference between the two areas was slightly more marked with 66.7% overall and 61.1% in the urban area, 58.3% and 50% respectively in rural areas. This urban-rural gap has been found in other health care studies (Gao et al., 2020).

This research is one of the few to investigate this gap in Vietnam. Such differences may be due to the difference in training, and access to resources available in the health care facilities such that the urban areas provide better training and augmented tools that facilitates good application of cognitive strategies (Grover et al., 2022). This implies that cognition strategy intercessions should be balanced out to consider these geographic differentials in caring for policymakers and wellbeing proficient. Multiple regression analysis also supported the hypothesis that cognitive strategies have a significant effect on health outcome (Teng et al., 2022). The ability to predict enhancement in patient treatment compliance based on attention focusing and the

use of memory aids combined with problem-solving approaches to the promotion of proper eating habits evidences the existence of a robust research support for the implementation of the strategies in the healthcare domain. These results are in line with previously published literature on cognitive-behavioral interventions in healthcare (Koch et al., 2021; Timotijevic et al., 2020): therefore, re-emphasizing the need to incorporate cognitive techniques into practice in order to achieve improved outcomes for patients.

This research also fills a vacuum since few research works mainly in global health explore the sociocultural context of Vietnam (Gwenzi & Rzymiski, 2021). Despite the definite descriptions of cognitive strategies in the Western medical systems, their applicability remains unknown and unclear in non-Western Southeast Asian settings, especially in Vietnam (Nami et al., 2022; Walshe et al., 2021). In returning, this research provides valuable insights to the analysis of cognitive strategies in the Vietnamese health care system, findings that reflect this study's aims of improving the understanding of health care interventions in a Vietnamese context by providing a better assessment of that country's health care climate, particularly through: The study calls for further implementation of cognitive strategies that are suited for the Vietnamese culture with regard to the changing health care demographics including the rising incidences of non-communicable diseases, and the enhanced preventive health (Quan et al., 2023).

Conclusion

This study highlights the significant role of cognitive strategies in enhancing health outcomes within Vietnam's healthcare system, addressing a critical gap in the literature regarding their application in Southeast Asia. By demonstrating the effectiveness of techniques such as attention focusing, memory aids, problem-solving, and behavioral reinforcement in improving treatment compliance, lifestyle choices, and preventive health behaviors, the research underscores the importance of integrating cognitive strategies into healthcare practices. Additionally, the study's focus on the urban-rural divide and cultural considerations offers valuable insights for developing tailored, context-specific interventions. These findings contribute to the broader understanding of cognitive strategies in healthcare and emphasize their potential to improve patient outcomes and inform evidence-based policy development in Vietnam and similar cultural settings

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