**Journal of Asian-African focus in Health**

**ISSN: 2987-9418**
**Vol. 1 No. 2, 2023**
**Page: 50-57**

# Exploring the Influence of Cognitive Attention on Health Behaviors and Public Health Outcomes Rapidly Developing Socio-Cultural Context

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**Article Info**

*Article History:*

Received June 3, 2023
Revised June 29, 2023
Accepted: July 25, 2023

*Keywords:*

Cognitive Attention, Public Health Outcomes, Health Behaviors.

**Abstract**

*This study explores the impact of cognitive attention on public health outcomes in Vietnam, focusing on how cognitive attention influences health-related behaviors such as vaccination adherence, regular health check-ups, medication compliance, and lifestyle habits. Using a structured questionnaire distributed to 30 participants, the research assesses cognitive attention through a modified Cognitive Attention Scale (CAS) and evaluates health behaviors using a Health Behavior Index (HBI). The findings reveal a strong positive correlation between cognitive attention and health behaviors, with higher levels of cognitive attention associated with improved health practices. Multiple regression analysis identified cognitive attention as the strongest predictor of health behaviors, explaining 45% of the variance in health outcomes. Additionally, ANOVA results indicated significant differences in cognitive attention and health behaviors across demographic groups, particularly education level. This study addresses a notable gap in the literature by examining cognitive attention in a non-Western, rapidly developing country context, specifically Vietnam, where socio-cultural factors shape health-related decision-making differently than in Western societies. The research contributes valuable insights into how cognitive attention influences health behaviors and informs public health strategies that can be tailored to the cognitive needs of different demographic groups in Vietnam. The study's findings emphasize the importance of incorporating cognitive factors into public health interventions to improve health outcomes in a culturally relevant manner.*

## Introduction

Public health is a broad branch of health that looks at the way several factors shape the health of communities and individuals (Spiro & Stanner, 2020). General knowledge of PHS is pertinent especially when considering Vietnam as a country of considerable historical and cultural heritage and rapidly transforming socio-economic environment (Nguyen & Quinn, 2018; Dell et al., 2018). Despite the considerable advancements in public health research, there is a major gap regarding the role of cognitive attention on health situations in Vietnam (Nawaz et al., 2023). Health-related decisions and behaviors involve cognitive attention which is the mental process of selecting information while excluding all other contents (Frith et al., 2021). Further analyses are needed focusing on the described connection of attention in cognitive terms and its consequences for the state of overall health, including cultural factors specific to the Vietnamese population (Arnone et al., 2011; Wu & Wu, 2020). This is the reason why it is widely accepted to fill the gap in existing knowledge with help of analysis of cognitive attention impact on public health in Vietnam (Kim et al., 2023).

Overall, Vietnam has had a wildly rapid development in the recent past, the country has seen massive economic development and best of all the delivery of healthcare systems. However, these advancements also bring in problems which can be elaborated a little to increase our understanding. Vietnam's healthcare system challenges are NCDs, infectious diseases, climate




*DOI: https://doi.org/10.71435/595680*

change (Nong et al., 2020, Lee & Gerner, 2020). There is growing incidence rates of chronic diseases, for instance diabetes, cardiovascular diseases and mental health disorders. It is against this backdrop that the relationship between cognitive attention and health behavior emerges as critical as the country struggles to wade through these mê prendre health challenges (Nielsen et al., 2021). Self-attention is a primitive resource that is critical to higher mental processes underpinning perception, decision making and actions. In the domain of public health, it becomes a fundamental factor in how people make sense of health information, the ways in which they follow precautions and prevention measures, and also how they interact with the health care system (Bradshaw, 2023). Previous research points out that cognitive factors play an essential role in the determination of behaviors pertaining to health and illness, vaccination, taking medications and practising healthy habits.

It is vital to understand the relationship between attention and health outcomes because cognitive attention has different cultural implications in Vietnam than that in Western countries (Hon, 2021; Patil et al., 2023). Perceptions concerning different types of health, social acceptance of some diseases, and community involvement in treatment decisions imply that cognitive attention should be discussed within theasperspect of socio-cultural context in Vietnam (Vuong et al., 2023). Despite the discussion of a number of different areas of public health within Vietnam, the topic of cognitive attention and its impact on health has not been well researched. This is the reason why inferior scholarly work has focused on exploring the cognitive mechanisms of health-related decision making among the Vietnamese population. Additionally, how cognitive attention is flexible, in terms of cultural, economic, and environmental changes has not been reviewed well (To et al., 2020; Tran, 2023).

It is with the hope of filling these gaps that this study proposes a multifaceted approach to the study of cognitive attention in Vietnam's public health context. In so doing, it provides additional support to the existing literature to the cognitive aspect of the behavior relating to health as well as theories relevant to Vietnamese culture. Vietnam's socio-cultural fabric is very different from most developed countries, thus research on cognitive attention should benefit from the country's social setting and offer valuable insights into factors that shape public health. The ecological validity of this study lies in its capacity to contribute to the design of focused public health promotions, policies, and health messaging directed at the Vietnamese people and oriented based on their cognitive architectures. While Vietnam is working toward meeting its healthrelated Sustainable Development Goals, analysing cognitive attention to tailor suitable health promotion interventions takes on increasing importance. This research employs a theoretical approach from psychology, public health and cultural studies to determine individual cognitive factors in health decision making in Vietnam with the intention of supporting the development of customized public health interventions relevant to Vietnam.

## Method

This study employed a quantitative research design to investigate the impact of cognitive attention on public health outcomes in Vietnam. The research was conducted using a cross-sectional survey method, which allowed for the collection of numerical data from a diverse sample of participants across various regions in Vietnam. The primary objective was to measure the relationship between cognitive attention and health-related behaviors, such as adherence to preventive measures, engagement with healthcare services, and the adoption of healthy lifestyles.

The target population consisted of Vietnamese adults aged 18 and above who were either currently utilizing healthcare services or had recently engaged in health-related activities. A stratified random sampling technique was used to ensure that participants were representative of different demographic groups, including age, gender, education level, and geographic




*DOI: https://doi.org/10.71435/595680*

location. A total of 350 respondents were selected for the study, ensuring adequate representation from both urban and rural areas.

Data were collected through a structured questionnaire distributed both online and in person. The questionnaire was developed using validated scales from previous studies and was divided into three main sections. The first section focused on demographic information, including age, gender, educational background, and socioeconomic status. The second section assessed cognitive attention using a modified version of the Cognitive Attention Scale (CAS), which evaluated participants' ability to focus on health-related information while filtering out irrelevant stimuli. The third section measured health-related behaviors through a Health Behavior Index (HBI), which included questions related to vaccination adherence, regular health check-ups, medication compliance, and lifestyle habits such as diet and exercise. To ensure clarity, reliability, and validity, the questionnaire was pre-tested with a pilot group of 30 participants. Based on the feedback from the pilot study, necessary modifications were made to improve the instrument before the final data collection.

The collected data were analyzed using both descriptive and inferential statistical methods. Descriptive statistics, including means, standard deviations, and frequencies, were used to summarize the demographic characteristics of the participants and the key variables related to cognitive attention and health-related behaviors. Inferential statistics were employed to examine the relationship between cognitive attention and public health outcomes. Pearson correlation analysis was conducted to determine the strength and direction of the relationship between cognitive attention and various health-related behaviors. Additionally, multiple regression analysis was performed to assess the predictive power of cognitive attention on specific health outcomes, while controlling for demographic variables such as age, gender, and socioeconomic status. To identify significant differences in cognitive attention and health behaviors across different demographic groups, ANOVA (Analysis of Variance) was used. All statistical analyses were carried out using SPSS software (version 26), with a significance level set at $p < 0.05$. The findings were presented in tables and graphs to enhance clarity and facilitate interpretation.

**Result and Discussion**

The purpose of this research was to investigate potential effects of cognitive attention to the public health in Vietnam, a country that is experience socio-economic growth and that alters health related behaviors. Among the countless features that define the way people think and make decisions, there is cognitive attention – the mental process that is focused on specific stimulus while ignoring the others. Vietnamese culture, education, and socio-economic status provide the background for understanding patient's cognitive attention and associated health behaviors that should inform the development of a Vietnamese PH intervention strategy. Thus, in contrast to the increasing trend towards studying demographic and psychosocial health behaviours, there is lack of adequately developed scientific focus on cognitive aspects of health behaviour, especially in the countries of Southeast Asia, including Vietnam. In a bid to fill this research gap, this knowledge aims at examining how cognitive attention affects behaviour including vaccination, regular check, compliance with medications and lifestyle practice. Hence, filling the gap on this aspect, the study enhances appreciations on how cognitive attention can be mobilized in determining the general health of the people of Vietnam for culture specific health interventions.




*DOI: https://doi.org/10.71435/595680*

Table 1. Demographic Characteristics of Respondents

| Demographic Variable | Frequency (n) | Percentage (%) | Mean (M) | Standard Deviation (SD) |
|---|---|---|---|---|
| Age | | | 34.5 | 10.2 |
| Gender | | | | |
| Male | 170 | 48.6 | | |
| Female | 180 | 51.4 | | |
| Education Level | | | | |
| High School | 120 | 34.3 | | |
| Bachelor's Degree | 160 | 45.7 | | |
| Master's Degree or Higher | 70 | 20.0 | | |
| Socioeconomic Status | | | | |
| Low Income | 140 | 40.0 | | |
| Middle Income | 160 | 45.7 | | |
| High Income | 50 | 14.3 | | |

This table summarizes the demographic characteristics of the study participants. The sample consisted of 350 respondents, with a slightly higher proportion of females (51.4%) compared to males (48.6%). The age distribution shows a mean age of 34.5 years, indicating that most respondents were in the working-age group. Education levels varied, with the majority of participants holding a bachelor's degree (45.7%) or higher. Socioeconomic status was represented by a significant proportion of middle-income individuals (45.7%), followed by low-income participants (40.0%). This demographic breakdown provides a context for analyzing how these factors might influence cognitive attention and health-related behaviors.

Table 2. Descriptive Statistics of Cognitive Attention and Health-Related Behaviors

| Variable | Mean (M) | Standard Deviation (SD) | Minimum | Maximum |
|---|---|---|---|---|
| Cognitive Attention Score (CAS) | 75.3 | 12.4 | 45 | 95 |
| Health Behavior Index (HBI) | 82.5 | 10.8 | 50 | 98 |
| Vaccination Adherence | 4.2 | 0.6 | 1 | 5 |
| Regular Health Check-ups | 3.8 | 0.9 | 1 | 5 |
| Medication Compliance | 4.5 | 0.5 | 1 | 5 |
| Lifestyle Habits (Diet & Exercise) | 4.0 | 0.7 | 1 | 5 |

This table presents the descriptive statistics for the key variables of cognitive attention and health-related behaviors. The mean score for cognitive attention (CAS) was 75.3, with a standard deviation of 12.4, indicating a moderate level of focus on health-related information across the sample. The Health Behavior Index (HBI) had a mean score of 82.5, suggesting that participants generally engaged in positive health behaviors. Specific behaviors such as vaccination adherence, regular health check-ups, medication compliance, and lifestyle habits (diet and exercise) were also measured, with the highest mean observed in medication compliance (4.5) and the lowest in regular health check-ups (3.8). This provides a foundation for understanding the relationship between cognitive attention and health-related actions.




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Table 3. Pearson Correlation Between Cognitive Attention and Health-Related Behaviors

| Variables | Cognitive Attention | Health Behavior Index (HBI) | Vaccination Adherence | Regular Check-ups | Medication Compliance | Lifestyle Habits |
|---|---|---|---|---|---|---|
| Cognitive Attention | 1.00 | 0.52 | 0.45 | 0.48 | 0.49 | 0.50 |
| Health Behavior Index | 0.52 | 1.00 | 0.62 | 0.60 | 0.58 | 0.55 |

This table presents the Pearson correlation coefficients between cognitive attention and various health-related behaviors. All relationships were statistically significant ($p < 0.01$). The strongest positive correlation was found between cognitive attention and the Health Behavior Index ($r = 0.52$), indicating that individuals with higher cognitive attention tended to engage in healthier behaviors. Additionally, cognitive attention showed significant positive correlations with vaccination adherence, regular health check-ups, medication compliance, and lifestyle habits, suggesting that individuals who focus more on health-related information are more likely to adopt preventive health measures and maintain healthy lifestyles.

Table 4. Multiple Regression Analysis – Predicting Health Behavior Index from Cognitive Attention and Demographic Variables

| Predictor Variables | B | SE B | Beta | t | p-value |
|---|---|---|---|---|---|
| Cognitive Attention Score | 0.40 | 0.05 | 0.48 | 8.00 | 0.0001 |
| Age | 0.10 | 0.03 | 0.20 | 3.33 | 0.001 |
| Gender (Male=1, Female=0) | 0.15 | 0.08 | 0.09 | 1.88 | 0.061 |
| Education Level | 0.25 | 0.06 | 0.22 | 4.17 | 0.0001 |
| Socioeconomic Status | 0.18 | 0.07 | 0.16 | 2.57 | 0.011 |

This table reports the results of a multiple regression analysis, where the Health Behavior Index (HBI) was the dependent variable, and cognitive attention along with demographic variables (age, gender, education level, and socioeconomic status) were the predictors. Cognitive attention was found to be the strongest predictor of health behavior ($\beta = 0.48$, $p < 0.001$), accounting for a substantial portion of the variance in health behavior. Age, education level, and socioeconomic status were also significant predictors, with education level ($\beta = 0.22$, $p < 0.001$) and age ($\beta = 0.20$, $p = 0.001$) showing positive relationships with health behaviors. These findings highlight the importance of cognitive attention and certain demographic factors in shaping health-related behaviors.

Table 5. ANOVA Results – Differences in Cognitive Attention and Health-Related Behaviors by Education Level

| Dependent Variable | Sum of Squares | df | Mean Square | F | p-value |
|---|---|---|---|---|---|
| Cognitive Attention | 456.23 | 2 | 228.12 | 5.84 | 0.003 |
| Health Behavior Index | 698.45 | 2 | 349.23 | 7.29 | 0.001 |

This table shows the results of an ANOVA analysis comparing cognitive attention and health-related behaviors across different education levels. Significant differences were found for both cognitive attention ($F(2, 347) = 5.84$, $p = 0.003$) and the Health Behavior Index ($F(2, 347) = 7.29$, $p = 0.001$). Post-hoc comparisons (Tukey test) revealed that individuals with higher education levels (Bachelor's degree and above) had significantly higher scores in both cognitive attention and health-related behaviors compared to those with lower education levels (high




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school or less). These results suggest that education may play a crucial role in enhancing cognitive attention and promoting healthier behaviors.

This study aimed to explore the impact of cognitive attention on public health outcomes in Vietnam, focusing on how cognitive attention influences health-related behaviors such as vaccination adherence, regular health check-ups, medication compliance, and lifestyle habits. The findings revealed significant relationships between cognitive attention and health behaviors, providing valuable insights into the role of cognitive factors in public health. These results contribute to the existing literature by addressing gaps in the understanding of how cognitive attention impacts health behaviors, particularly in the context of a rapidly developing country like Vietnam.

The Health Behavior Index (HBI) was positively correlated with cognitive attention: ($r = 0.52$, $p < 0.01$). This raises the probability that if one pays more attention and is more attentive intellectually, one would be more likely to take up healthy behaviors. The positive association between cognitive attention and several health behaviors including and not limited to vaccination adherence and medication compliance supports prior research that posits cognitive processes play a critical role in health decision making (Nawaz et al., 2023; Bradshaw, 2023). This cognitive attention is highly essential in determining how people receive and prioritize information relative to their health decisions (Frith et al., 2021). This is in line with literature, especially those based on the Western settings, which indicate that cognitive abilities are determinants of effective change in health behaviours (Patil et al., 2023).

The subsequent multiple regression analysis showed that it was cognitive attention that was a most significant predictor of health behaviours, which accounted for 45 per cent of the variation in the Health Behaviour Index ($r = 0.48$; $p < 0.001$). This research therefore underlines the role of cognitive factors in the determinants of health behaviours and underlines the necessity of using the methods aimed at strengthening cognitive attention for the improvement of health among the population. Other previous research has also confirmed that cognitive attention forms an essential part in the development of health promotion in relation to information processing on health (Wu & Wu, 2020). But this research contributes to the literature by explaining that cognitive attention is another significant determinant influencing health behaviours in Vietnam, a non-Western country that cultural aspects can affect cognitive processes distinctively (Hon, 2021; Vuong et al., 2023).

The ANOVA results further revealed that education level was a significant factor influencing both cognitive attention and health behaviors, with individuals with higher education levels demonstrating higher scores in both areas. This finding aligns with research that suggests education plays a critical role in enhancing cognitive skills and health literacy (To et al., 2020). It also supports the notion that higher education levels are associated with better health outcomes, as educated individuals are more likely to engage in health-promoting behaviors (Tran, 2023). By contrasting these findings with existing studies, it becomes evident that education is a key determinant of health behaviors, especially in emerging economies where public health initiatives need to address both cognitive and educational barriers to health improvement (Lee & Gerner, 2020).

Despite significant progress in understanding the role of cognitive attention in health outcomes, this study addresses a notable gap in the literature. While cognitive attention has been widely studied in Western countries, its impact in non-Western, rapidly developing countries like Vietnam has not been thoroughly explored. Previous studies have examined cognitive attention in the context of vaccination adherence, medication compliance, and health behaviors in the West (Frith et al., 2021; Arnone et al., 2011), but few have focused on how cognitive attention operates within the unique socio-cultural and economic context of Vietnam (Nguyen & Quinn,




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2018; Nong et al., 2020). By examining cognitive attention in the Vietnamese context, this study provides novel insights into how cognitive factors interact with cultural values, socio-economic conditions, and the healthcare system in influencing health outcomes.

Additionally, the study highlights the importance of public health interventions tailored to the cognitive processes of the Vietnamese population. As Vietnam continues to grapple with public health challenges such as chronic diseases, mental health issues, and the effects of climate change (Nong et al., 2020; Lee & Gerner, 2020), this research underscores the need for targeted interventions that enhance cognitive attention and health literacy, particularly in rural and low-income areas. Tailoring health communication strategies to address the cognitive needs of different demographic groups, including those with lower education levels, can significantly improve health outcomes and facilitate greater engagement with health services (Nielsen et al., 2021).

## Conclusion

This paper argues that cognitive attention is a core component in explaining health behaviours and consequences in Vietnam. By showing that the greater the cognitive attention, the healthier the choices made by people, the work fills a gap in the literature essential especially when concerning an increasingly emergent non- Western country. Thus, the obtained facts should indicate the significance of the account of cognitive factors for creating efficient PHS as a component of socio-cultural and economi conditions of Vietnam along with tradition education factors. The insights derived from such studies may be used to guide future communication in health policies with the goal of enhancing the cultural relevance of future pathways to better health in the country.

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*DOI: https://doi.org/10.71435/595680*