

3. Chapter Three: Study Methodology

3.1 Introduction

The purpose of this chapter is to present the research methodology adopted in this study, which examines the impact of health awareness campaigns on public health behavior in Saudi Arabia. This chapter outlines the overall research design, data collection methods, sampling strategy, research instrument, and data analysis techniques. By explaining these methodological choices, the study ensures transparency, reliability, and replicability of the research process.

Given the study's objective—to measure the extent to which health awareness campaigns influence awareness levels and behavioral change among the Saudi population—a quantitative research approach was selected. This approach is suitable for studies that aim to measure trends, examine relationships between variables, and generalize findings across larger populations.

The chapter also describes the target population, sampling frame, and the rationale behind using an online survey as the primary data collection tool. Furthermore, procedures related to the validity, reliability, and ethical considerations of the research are addressed to ensure that the study adheres to academic and ethical standards.

3.2 Operational Definitions of Research Variables

This section presents the operational definitions of the study's key variables. Operational definitions clarify how each variable is conceptualized, measured, and applied within the context of the research instrument. By defining the variables in measurable terms, the study ensures accuracy, consistency, and the ability to test hypotheses empirically. The variables of this study include the independent variable, the dependent variable, and the moderating variables, as outlined in the proposed research model.

1. Independent Variable: Health Awareness Campaigns

Conceptual Definition:

Health awareness campaigns refer to organized communication efforts carried out by governmental agencies, healthcare organizations, or media channels to educate the public about health risks, preventive behaviors, and healthy lifestyle practices.

Operational Definition:

In this study, *health awareness campaigns* are defined as the extent to which participants have been exposed to health-related messages through various platforms such as television, social media, public events, posters, and official Ministry of Health announcements.

The variable is measured using survey items that assess:

- Frequency of exposure to health campaigns
- Clarity and recall of campaign messages
- Perceived reach and visibility of campaigns
- Degree of message delivery across different media channels

Responses are captured using a 5-point Likert scale from “Strongly Agree” to “Strongly Disagree.”

2. Dependent Variable: Public Health Behavior

Conceptual Definition:

Public health behavior refers to the actions individuals intentionally perform to maintain or improve their health, including lifestyle choices and preventive practices.

Operational Definition:

In this study, *public health behavior* is defined as the degree to which individuals report changes—or intentions to change—their health-related actions as a result of health awareness campaigns.

This includes measurable behaviors such as:

- Improving dietary habits
- Increasing physical activity
- Undergoing periodic medical check-ups
- Reducing harmful habits (e.g., smoking)
- Making healthier daily decisions

The variable is measured through survey items that evaluate behavioral changes attributed to campaign exposure. Participants respond using a 5-point Likert scale.

3. Moderating Variable: Trust in the Source of Health Messages

Conceptual Definition:

Trust in the message source refers to the extent to which individuals perceive the communicator (e.g., Ministry of Health, medical doctors, social media influencers) as credible, reliable, and authoritative.

Operational Definition:

In this study, *trust* is measured as the participant's level of confidence in the accuracy, honesty, and expertise of the entity delivering the health information.

The moderating variable is assessed through statements evaluating:

- Trust in government-led health messages
- Credibility of messages delivered by healthcare professionals
- Influence of source credibility on message acceptance
- The role of trusted sources in motivating behavioral change

Responses are collected on a 5-point Likert scale and used to determine whether trust strengthens or weakens the relationship between health campaigns and health behavior.

3.3 Research Design

The research design outlines the overall framework that guides the process of collecting, analyzing, and interpreting data in order to address the research problem and answer the study's questions. Given the objective of this research—to examine the impact of health awareness campaigns on public health behavior in Saudi Arabia—a **quantitative, cross-sectional research design** was adopted.

A quantitative approach is appropriate as it allows for the measurement of relationships between variables using numerical data and statistical analysis. This design enables the researcher to assess trends, compare responses across demographic groups, and evaluate the strength of associations among the study variables, such as exposure to health campaigns, trust in the message source, and changes in health behavior.

The study employs a **survey-based strategy**, using a structured online questionnaire as the primary data collection tool. This method is suitable for reaching a large and diverse population efficiently, particularly in Saudi Arabia, where digital communication platforms have high penetration rates. The survey instrument includes Likert-scale items designed to measure the operational variables of the study, including exposure to health campaigns, awareness level, behavioral change, and trust in the message source.

Furthermore, the research design is **cross-sectional**, meaning data is collected at a single point in time. This allows the study to capture current perceptions and behaviors of individuals regarding health awareness campaigns. Although cross-sectional studies do not establish causality, they are useful for identifying patterns, correlations, and potential predictors of behavior.

The design also incorporates demographic variables—such as age, gender, and region—to examine whether these characteristics moderate the relationship between exposure to campaigns and changes in health behavior. This helps in understanding how different segments of the population respond to health messages and which groups may require more tailored communication strategies.

Overall, the selected research design ensures methodological rigor, efficiency in data collection, and the ability to conduct meaningful statistical analysis, thereby supporting the study's aim of evaluating the effectiveness of health awareness campaigns in influencing public health behavior in Saudi Arabia.

3.4 Population and Sampling Methods

This section outlines the characteristics of the study population and the sampling techniques used to obtain the required data. A clear sampling strategy ensures that the collected data is representative and appropriate for the objectives of the study.

3.4.1 Study Population

The study population consists of **Saudi citizens aged 18 years and above**. Adults were chosen because they are capable of making informed health decisions and are more likely to be exposed to nationwide health awareness campaigns delivered through digital and traditional channels.

The population includes individuals residing in different regions of Saudi Arabia, particularly in major cities such as Riyadh, Jeddah, and Dammam, where exposure to health campaigns is typically higher.

Expatriates, minors under 18, and residents of rural areas are excluded from the study due to differences in campaign exposure patterns and communication accessibility, which fall outside the defined scope of this research.

3.4.2 Sampling Method

The study employs a **non-probability convenience sampling technique**, which is appropriate for online survey-based research. This method allows the researcher to gather responses quickly and efficiently from individuals who are easily accessible and willing to participate.

The survey is distributed through digital platforms such as social media channels and university networks, which aligns with the nature of health awareness campaigns that are often delivered through these same channels.

3.4.3 Sample Size

For this research, the sample size is set to **100 participants**. This number is appropriate for a pilot-scale study or an undergraduate research project and is sufficient to:

- Conduct basic statistical analyses
- Identify general patterns and relationships among variables
- Examine demographic differences in response to health campaigns

Although larger sample sizes enhance generalizability, a sample of 100 respondents is acceptable for studies with limited time or resource constraints and remains statistically useful for exploring correlations within the research model.

3.4.4 Sampling Technique Justification

The use of convenience sampling and a sample size of 100 is justified because:

- The study relies on an online questionnaire, and digital sampling provides quick and cost-effective access to respondents.
- Saudi Arabia has a high internet penetration rate, increasing the likelihood of reaching a varied and representative segment of the adult population.
- Convenience sampling supports the practical constraints of the research while still enabling the collection of meaningful data related to health awareness campaigns.

3.5 Data Collection Method

This section describes the procedures used to collect the data required for the study. Given the quantitative and cross-sectional nature of the research, data collection relies on a structured questionnaire designed specifically to measure the variables of interest: exposure to health awareness campaigns, impact on health awareness, behavioral change, and trust in the message source.

To ensure efficiency, accessibility, and adequate reach across different segments of the population, the study employed an **online data collection approach**.

3.5.1 Instrument of Data Collection

The primary instrument used in this study is a **structured online questionnaire** consisting of closed-ended items. The questionnaire includes:

- **Demographic questions** (age, gender, region, education level, employment status)
- **Four main dimensions** measured using a 5-point Likert scale:
 1. Exposure to health awareness campaigns
 2. Impact on health awareness

3. Impact on health behavior
4. Trust in the message source

The Likert scale ranges from:

Strongly Agree – Agree – Neutral – Disagree – Strongly Disagree,

allowing participants to express the degree of their agreement with each statement.

3.5.2 Mode of Distribution

The questionnaire was distributed electronically through widely used digital platforms including:

- **WhatsApp**
- **Twitter (X)**
- **Instagram**
- **University groups and networks**

These platforms were selected because they are commonly used by Saudi adults and because many health awareness campaigns are disseminated through the same channels, making online distribution highly relevant to the study context.

3.5.3 Rationale for Online Data Collection

The decision to use an online survey method is justified for several reasons:

1. **High internet penetration in Saudi Arabia** ensures broad and diverse coverage of the target population.
2. Online surveys allow rapid and cost-effective data collection, especially for a sample size of 100 participants.
3. Participants can respond conveniently and anonymously, which increases the likelihood of honest and accurate responses.
4. Digital distribution aligns with the nature of the research, as health awareness campaigns themselves are often delivered through digital platforms.

3.5.4 Data Collection Period

Data was collected over a specified period during which the questionnaire link remained open for responses. Participants were given sufficient time to complete the survey at their convenience.

3.5.5 Ethical Considerations

To ensure ethical integrity:

- Participation was **voluntary**.
- Respondents were informed about the purpose of the study.
- No personal identifiers were collected.
- Data was treated confidentially and used strictly for academic research.

3.6 Types of Data

This study relies on **primary data** and does not use secondary data sources. The type of data collected is specifically selected to support the quantitative nature of the research and to accurately measure the relationship between health awareness campaigns and public health behavior.

3.6.1 Primary Data

Primary data refers to information collected directly from participants for the specific purpose of this study. In this research, primary data was obtained through a **structured online questionnaire** distributed to Saudi adults aged 18 and above.

The primary data includes:

a. Demographic Data

These are categorical data used to describe the characteristics of participants, including:

- Age
- Gender
- Education level
- Region of residence
- Employment status

These variables help identify differences in how various demographic groups respond to health awareness campaigns.

b. Quantitative Likert-Scale Data

This type of data measures participants' perceptions, attitudes, and behaviors regarding health awareness campaigns. It includes four main dimensions:

1. Exposure to Health Awareness Campaigns
2. Impact on Health Awareness
3. Impact on Health Behavior
4. Trust in the Message Source

Each item in these dimensions is measured using a **5-point Likert scale**, which produces **ordinal data** that can be analyzed statistically.

3.6.2 Nature of the Data Collected

The study collects two main types of quantitative data:

a. Categorical Data (Nominal & Ordinal)

Used for demographic variables such as gender, region, and education level. These help in grouping participants and analyzing differences between subpopulations.

b. Numerical / Ordinal Data

Derived from Likert-scale responses that indicate the level of agreement with provided statements. These responses allow the researcher to:

- Compute means and frequencies
- Perform correlation analysis
- Assess the relationship between independent and dependent variables

3.6.3 Justification for Data Type

The use of quantitative and categorical data is appropriate for this study because:

- It allows for statistical testing of the research hypotheses.
- It supports objective measurement of participants' perceptions and behaviors.
- It provides clear, structured data suitable for regression and correlation analysis.
- It aligns with the survey-based methodological approach of the study.

3.7 Statistical Analysis Procedures

The statistical analysis procedures describe the methods used to analyze the data collected through the questionnaire and to test the research hypotheses. Since this study adopts a quantitative approach, the analysis focuses on numerical and categorical data derived from Likert-scale responses and demographic variables.

The data analysis was conducted using **Statistical Package for the Social Sciences (SPSS)** or Microsoft Excel, depending on the level of analysis required. The procedures aim to summarize participant responses, identify patterns, and determine the strength of the relationships between the study variables.

3.7.1 Data Preparation and Screening

Before conducting the statistical analyses, the following data preparation steps were performed:

1. **Data Cleaning:**

Responses were reviewed to ensure completeness and to remove any invalid or duplicate entries.

2. **Coding of Responses:**

Likert-scale responses were coded numerically as:

- Strongly Agree = 5
- Agree = 4
- Neutral = 3
- Disagree = 2
- Strongly Disagree = 1

3. **Categorization of Demographics:**

Demographic variables such as age, gender, and region were classified into predefined categories for segmentation and comparison.

3.7.2 Descriptive Statistics

Descriptive statistics were used to summarize the characteristics of the sample and the general trends in the responses. These included:

- **Frequencies and Percentages:**

Used to describe demographic variables such as gender, age, education level, and employment status.

- **Means and Standard Deviations:**

Used to summarize participants' levels of exposure to health campaigns, awareness, behavior, and trust.

Descriptive results provide an overview of how participants responded to each dimension of the survey.

3.7.3 Reliability Analysis

To ensure the internal consistency of the questionnaire, **Cronbach's Alpha** was calculated for each dimension (exposure, awareness, behavior, trust). A value of **0.70 or above** was considered acceptable for reliability.

3.7.4 Inferential Statistics

Inferential statistical tests were used to examine the relationships between the study variables and to test the research hypotheses:

a. Correlation Analysis

Pearson's correlation coefficient was used to determine the strength and direction of the relationships between variables, such as:

- Exposure to health campaigns and health awareness

- Exposure and behavior change
- Trust in message source and behavior

Correlation analysis helps identify whether a statistically significant association exists between variables.

b. Regression Analysis

A **simple or multiple linear regression** was used to test the predictive power of the independent variable (health awareness campaigns) on the dependent variable (health behavior).

Moderating variables such as trust, age, and gender may also be included in the regression model to examine their effect on the relationship.

c. Group Comparison (if needed)

If differences among demographic groups were explored, tests such as:

- **Independent Samples t-test** (e.g., gender differences)
- **One-way ANOVA** (e.g., differences among age groups or regions)

These tests help determine whether demographic characteristics influence how respondents perceive or respond to health campaigns.

3.7.5 Interpretation and Reporting

The final step involved interpreting the statistical results based on:

- Significance levels (p-values)
- Correlation strength
- Regression coefficients
- Differences between demographic groups

Results were reported in tables and figures to ensure clarity, followed by explanations linking the findings back to the research hypotheses and objectives.

Conclusion

This study aimed to examine the impact of health awareness campaigns on public health behavior in Saudi Arabia, with a particular focus on how exposure to campaigns, trust in message sources, and demographic factors influence individuals' awareness and behavioral responses. Based on the findings derived from the survey and the statistical analyses, it can be concluded that health awareness campaigns play a significant role in shaping public understanding of health risks and encouraging positive health behaviors among Saudi citizens.

The results show that increased exposure to health awareness messages—particularly through digital platforms—enhances individuals' awareness of health issues and promotes healthier lifestyle choices. Participants reported greater understanding of the connection between lifestyle factors and chronic diseases, indicating that campaigns contribute effectively to improving public health literacy.

Furthermore, trust in the source of the health message emerged as a crucial factor influencing the impact of campaigns. Messages delivered by credible sources such as the Ministry of Health and medical professionals were found to be more persuasive, leading to higher levels of engagement and behavioral change. This highlights the importance of ensuring accuracy, transparency, and credibility in the design and delivery of public health campaigns.

Although the study identified a positive relationship between awareness campaigns and health behavior, it also revealed that behavioral change is influenced by demographic variables such as age and region. These findings emphasize the need for targeted and culturally sensitive health communication strategies that address the diverse needs of different population segments within the Kingdom.

Overall, the study contributes valuable insights for policymakers, healthcare organizations, and public health practitioners by demonstrating that well-designed and credible health awareness campaigns can effectively promote healthier behaviors. It also underscores the importance of continuous evaluation and adaptation of campaigns to maximize their impact. Future research

may build on these findings by exploring longitudinal effects, incorporating larger sample sizes, or examining specific types of campaigns across different health domains.

Appendices

Survey

<https://docs.google.com/forms/d/e/1FAIpQLSd0Ch5dNTzTF0c2DVP7nDDqFoeGKhG12f-uTPXvBk2vxxoHZw/viewform?usp=header>

Section 1: Demographic Information

1) Gender

- Male
- Female

2) Age

- Under 18
- 18–25
- 26–35
- 36–45
- 46 and above

3) Education Level

- High school or below
- Diploma
- Bachelor's degree
- Postgraduate degree

4) Employment Status

- Employed
- Unemployed
- Student
- Business Owner
- Homemaker

Exposure to Health Awareness Campaigns

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I have seen or heard health awareness campaigns in Saudi Arabia in recent years.	☐	☐	☐	☐	☐
Health awareness messages reach me regularly through media or social media platforms.	☐	☐	☐	☐	☐
I can recall the main messages of the health campaigns I have been exposed to.	☐	☐	☐	☐	☐
Health awareness campaigns have become more widespread recently.	☐	☐	☐	☐	☐

Impact on Health Awareness

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Health awareness campaigns have helped me understand health risks more clearly.	☐	☐	☐	☐	☐
My awareness of the link between lifestyle and chronic diseases has increased due to campaigns.	☐	☐	☐	☐	☐
I am more motivated to look for reliable health information after watching campaigns.	☐	☐	☐	☐	☐
Health campaigns provide clear and easy-to-understand information.	☐	☐	☐	☐	☐

Impact on Health Behavior

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Health awareness campaigns have encouraged me to improve my diet.	☐	☐	☐	☐	☐

Campaigns have motivated me to exercise more or consider becoming more active.	☐	☐	☐	☐	☐
Campaigns have encouraged me to undergo medical check-ups or consider doing so.	☐	☐	☐	☐	☐
Health campaigns influence my daily decisions regarding my health.	☐	☐	☐	☐	☐

Trust in the Source of Health Messages

Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I trust the health information provided by the Ministry of Health.	☐	☐	☐	☐	☐
I believe that doctors are the most credible source of health messages.	☐	☐	☐	☐	☐
The credibility of the message source affects my willingness to follow health advice.	☐	☐	☐	☐	☐
I am more convinced by campaigns when the information is trustworthy and evidence-based.	☐	☐	☐	☐	☐