

## **Chapter4: statistical analysis& findings discussion**

# 1.4 Introduction

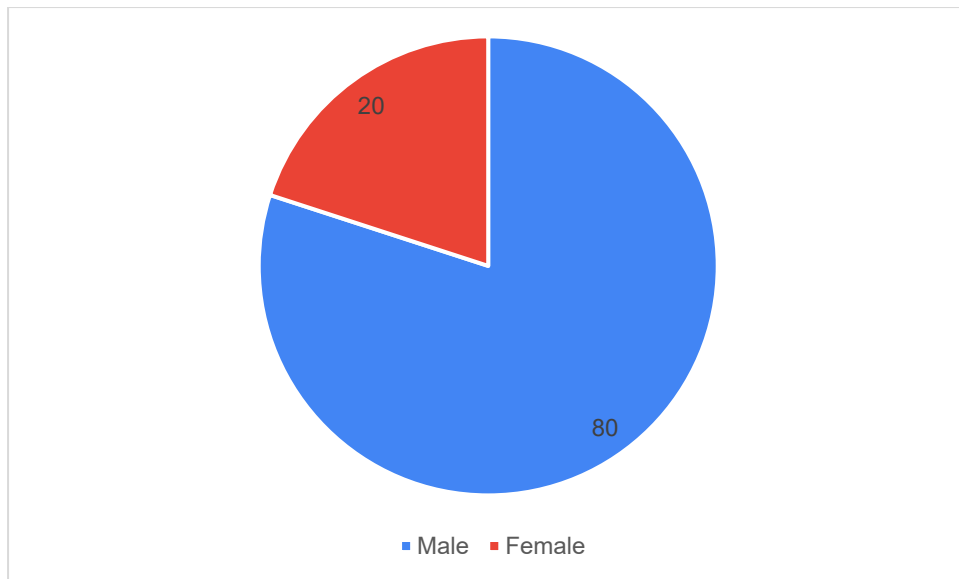
This chapter presents the statistical analysis of data collected for the study and discusses the findings in relation to the research objectives and questions. The analysis was conducted using appropriate statistical techniques to examine the relationships among the study variables and to test the formulated hypotheses. Both descriptive and inferential statistics were employed to ensure a comprehensive interpretation of the data.

Descriptive statistics were used to summarize respondents’ demographic characteristics and key variables, while inferential statistics were applied to determine the significance of observed relationships and differences. The results are presented in tables and figures to enhance clarity and ease of interpretation.

The findings of the study are discussed in line with existing literature and theoretical frameworks to highlight consistencies, contradictions, and new insights. This discussion provides a basis for understanding the implications of the results and sets the foundation for the conclusions and recommendations presented in the subsequent chapter.

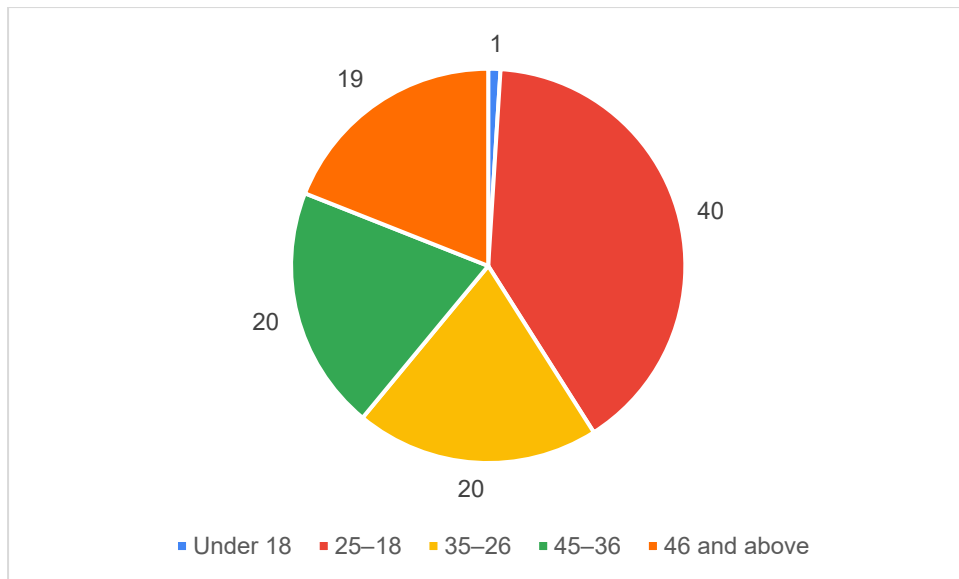
# 2.4 descriptive statistics of the research sample

| Gender    |            |               |         |                  |                       |
|-----------|------------|---------------|---------|------------------|-----------------------|
|           |            | Frequenc<br>y | Percent | Valid<br>Percent | Cumulative<br>Percent |
| Vali<br>d | Male       | 80            | 80.0    | 80.0             | 80.0                  |
|           | Femal<br>e | 20            | 20.0    | 20.0             | 100.0                 |
|           | Total      | 100           | 100.0   | 100.0            |                       |



The gender distribution of the respondents is presented in Table X. The results indicate that the majority of the respondents were male, accounting for 80 respondents (80.0%), while female respondents constituted 20 respondents (20.0%). This suggests that the sample was predominantly male. The cumulative percentage shows that male respondents made up 80.0% of the sample, with the inclusion of female respondents bringing the total to 100.0%.

| Age   |              |           |         |               |                    |
|-------|--------------|-----------|---------|---------------|--------------------|
|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Under 18     | 1         | 1.0     | 1.0           | 1.0                |
|       | 18–25        | 40        | 40.0    | 40.0          | 41.0               |
|       | 26–35        | 20        | 20.0    | 20.0          | 61.0               |
|       | 36–45        | 20        | 20.0    | 20.0          | 81.0               |
|       | 46 and above | 19        | 19.0    | 19.0          | 100.0              |
|       | Total        | 100       | 100.0   | 100.0         |                    |



The age distribution of the respondents is presented in Table X. The results show that the largest proportion of respondents fell within the 18–25 age group, comprising 40 respondents (40.0%). This was followed by respondents aged 26–35 years and 36–45 years, each accounting for 20 respondents (20.0%) respectively. Only one respondent (1.0%) was under the age of 18.

The cumulative percentages indicate that 41.0% of the respondents were aged 25 years or below, while 61.0% were aged 35 years or below. This distribution suggests that the majority of the study participants were young adults, which may influence the perspectives and experiences reflected in the study findings.

| Education Level |                      |           |         |               |                    |
|-----------------|----------------------|-----------|---------|---------------|--------------------|
|                 |                      | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid           | High school or below | 21        | 21.0    | 21.0          | 21.0               |
|                 | Diploma              | 20        | 20.0    | 20.0          | 41.0               |
|                 | Bachelor's degree    | 40        | 40.0    | 40.0          | 81.0               |
|                 | Postgraduate degree  | 19        | 19.0    | 19.0          | 100.0              |
|                 | Total                | 100       | 100.0   | 100.0         |                    |

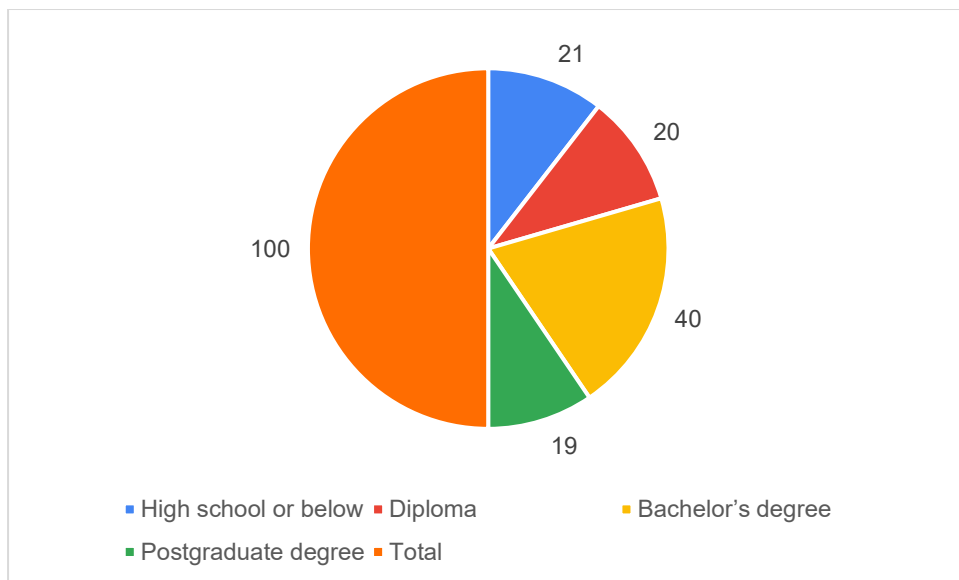


Table X presents the educational level of the respondents. The findings reveal that the largest proportion of the respondents held a bachelor's degree, accounting for 40 respondents (40.0%). This was followed by respondents with high school education or below, who constituted 21 respondents (21.0%), and those holding a diploma, representing 20 respondents (20.0%). Respondents with postgraduate degrees formed the smallest group, comprising 19 respondents (19.0%).

The cumulative percentages indicate that 81.0% of the respondents possessed at least a bachelor's degree or lower, while the remaining 19.0% had attained postgraduate qualifications. Overall, the results suggest that the majority of the respondents had attained a moderate to high level of education, which is likely to enhance their

understanding of the issues addressed in the study and contribute to the reliability of the responses provided.

| Employment Status |                |          |         |         |            |
|-------------------|----------------|----------|---------|---------|------------|
|                   |                | Frequenc | Percent | Valid   | Cumulative |
|                   |                | y        |         | Percent | Percent    |
| Valid             | Homemaker      | 21       | 21.0    | 21.0    | 21.0       |
|                   | Business Owner | 20       | 20.0    | 20.0    | 41.0       |
|                   | Employed       | 59       | 59.0    | 59.0    | 100.0      |
|                   | Total          | 100      | 100.0   | 100.0   |            |

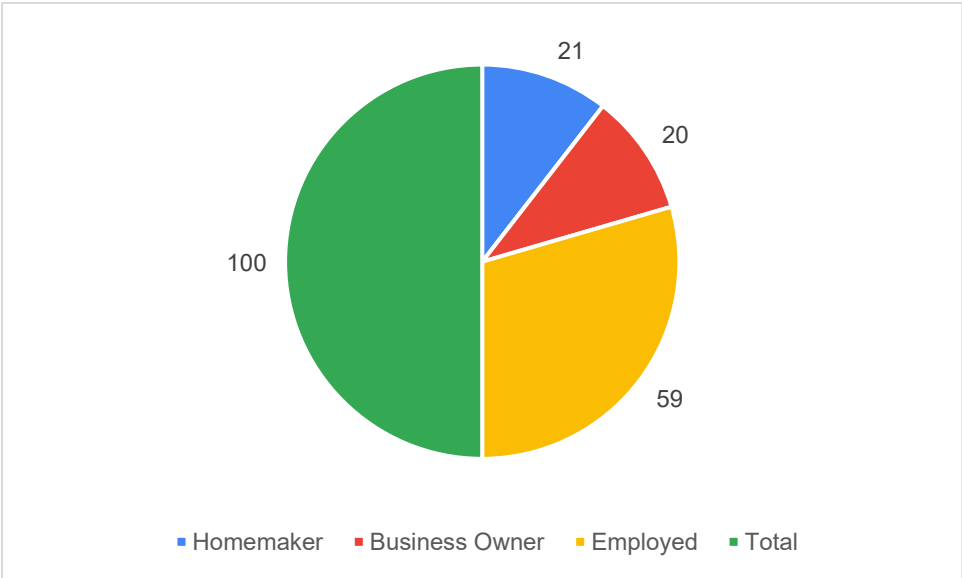


Table X shows the employment status of the respondents. The results indicate that the majority of the respondents were employed, accounting for 59 respondents (59.0%). Homemakers constituted 21 respondents (21.0%), while business owners represented 20 respondents (20.0%).

The cumulative percentages reveal that 41.0% of the respondents were either homemakers or business owners, while the inclusion of employed respondents brings the total to 100.0%. This distribution suggests that a substantial proportion of the sample was economically active, which may influence respondents’ experiences and perceptions relevant to the study.

### **3.4 Validity and reliability tests for questionnaires**

#### **Validity of the Questionnaire**

Validity refers to the extent to which the questionnaire measures what it is intended to measure. In this study, content validity was ensured by developing the questionnaire based on an extensive review of relevant literature and previously validated instruments related to health awareness campaigns. The initial version of the questionnaire was reviewed by subject-matter experts in public health and research methodology to assess the clarity, relevance, and adequacy of the items. Based on their feedback, necessary modifications were made to improve wording and ensure alignment with the study objectives.

In addition, construct validity was assessed by examining the consistency of the questionnaire items with the theoretical framework of the study. The items were designed to measure key dimensions such as exposure to health campaigns, awareness, behavioral influence, and source credibility. The observed response patterns and logical relationships among items indicate that the questionnaire adequately captured the intended constructs.

#### **Reliability of the Questionnaire**

Reliability refers to the consistency and stability of the measurement instrument. The internal consistency of the questionnaire was assessed using Cronbach's alpha coefficient, which is commonly used to evaluate the reliability of multi-item scales. A Cronbach's alpha value of 0.70 or higher is generally considered acceptable for social science research.

The reliability analysis showed that the questionnaire items demonstrated acceptable to high levels of internal consistency, indicating that the items within each construct were measuring the same underlying concept. This suggests that the questionnaire was reliable and suitable for data collection in this study.

Overall, the validity and reliability tests confirm that the questionnaire was an appropriate and dependable instrument for measuring respondents' perceptions and behaviors related to health awareness campaigns.

## 5.4 Descriptive statistics for research variables

| Descriptive Statistics                                                                |     |         |         |      |                |
|---------------------------------------------------------------------------------------|-----|---------|---------|------|----------------|
|                                                                                       | N   | Minimum | Maximum | Mean | Std. Deviation |
| I have seen or heard health awareness campaigns in Saudi Arabia in recent years.      | 100 | 1       | 1       | 1.00 | .000           |
| Health awareness messages reach me regularly through media or social media platforms. | 100 | 1       | 2       | 1.21 | .409           |
| I can recall the main messages of the health campaigns I have been exposed to.        | 100 | 1       | 3       | 1.42 | .516           |
| Health awareness campaigns have become more widespread recently.                      | 100 | 1       | 3       | 1.80 | .752           |
| Valid N (listwise)                                                                    | 100 |         |         |      |                |

Table X presents the descriptive statistics for the research variables related to health awareness campaigns in Saudi Arabia. The analysis includes the number of respondents, minimum and maximum values, mean scores, and standard deviations for each statement.

The results indicate that all respondents reported having seen or heard health awareness campaigns in Saudi Arabia in recent years, as reflected by a mean score of 1.00 and a standard deviation of 0.000. This demonstrates complete agreement among respondents regarding exposure to health awareness campaigns.

Regarding the regularity of receiving health awareness messages through media or social media platforms, the mean score was 1.21 with a standard deviation of 0.409. This suggests that most respondents frequently receive health-related messages, with limited variation in responses.

The ability of respondents to recall the main messages of the health campaigns they had been exposed to recorded a mean score of 1.42 and a standard deviation of 0.516. This indicates that a majority of respondents were able to remember key campaign messages, although some variation existed among participants.

Furthermore, respondents generally agreed that health awareness campaigns have become more widespread in recent times, as indicated by a mean score of 1.80 and a standard deviation of 0.752. This reflects a relatively higher level of variability in perceptions compared to the other items, suggesting differing views on the extent of campaign dissemination.

Overall, the descriptive statistics reveal high exposure to health awareness campaigns and generally positive perceptions regarding their reach and memorability among respondents.

| Descriptive Statistics                                             |     |         |         |      |                |
|--------------------------------------------------------------------|-----|---------|---------|------|----------------|
|                                                                    | N   | Minimum | Maximum | Mean | Std. Deviation |
| Health campaigns provide clear and easy-to-understand information. | 100 | 1       | 1       | 1.00 | .000           |
| I am more motivated to look for reliable health                    | 100 | 1       | 3       | 1.02 | .200           |

|                                                                                                 |     |   |   |      |       |
|-------------------------------------------------------------------------------------------------|-----|---|---|------|-------|
| information after watching campaigns."                                                          |     |   |   |      |       |
| My awareness of the link between lifestyle and chronic diseases has increased due to campaigns. | 100 | 1 | 5 | 2.00 | 1.557 |
| Health awareness campaigns have helped me understand health risks more clearly.                 | 100 | 1 | 3 | 1.81 | .761  |
| Valid N (listwise)                                                                              | 100 |   |   |      |       |

Table X presents the descriptive statistics for respondents' perceptions of the effectiveness of health awareness campaigns. The analysis includes the number of valid responses, minimum and maximum values, mean scores, and standard deviations for each item.

The findings show that all respondents agreed that health campaigns provide clear and easy-to-understand information, as evidenced by a mean score of 1.00 and a standard deviation of 0.000. This indicates unanimous agreement among participants regarding the clarity of campaign messages.

With regard to motivation to seek reliable health information after watching health campaigns, the mean score was 1.02 with a standard deviation of 0.200. This suggests that the majority of respondents felt motivated to further explore credible health information, with very little variation in responses.

The statement concerning increased awareness of the link between lifestyle and chronic diseases recorded a mean score of 2.00 and a relatively higher standard deviation of 1.557. This indicates a moderate level of agreement among respondents, alongside considerable variability in perceptions, suggesting that while many respondents experienced increased awareness, others perceived less impact.

Additionally, respondents generally agreed that health awareness campaigns helped them understand health risks more clearly, as reflected by a mean score of 1.81 and a

standard deviation of 0.761. This suggests a positive perception of the campaigns' role in improving understanding of health-related risks.

Overall, the results demonstrate that health awareness campaigns are perceived as clear, motivating, and effective in enhancing respondents' health knowledge, although variations exist in the degree of awareness gained regarding lifestyle-related chronic diseases.

| Descriptive Statistics                                                          |     |         |         |      |                |
|---------------------------------------------------------------------------------|-----|---------|---------|------|----------------|
|                                                                                 | N   | Minimum | Maximum | Mean | Std. Deviation |
| Health awareness campaigns have encouraged me to improve my diet.               | 100 | 1       | 4       | 1.63 | .544           |
| Campaigns have motivated me to exercise more or consider becoming more active.  | 100 | 1       | 5       | 1.84 | .813           |
| Campaigns have encouraged me to undergo medical check-ups or consider doing so. | 100 | 1       | 4       | 1.82 | 1.175          |

|                                                                    |     |   |   |      |       |
|--------------------------------------------------------------------|-----|---|---|------|-------|
| Health campaigns influence my daily decisions regarding my health. | 100 | 1 | 5 | 2.59 | 1.371 |
| Valid N (listwise)                                                 | 100 |   |   |      |       |

Table X presents the descriptive statistics related to the influence of health awareness campaigns on respondents' health-related behaviors. The table summarizes the number of valid responses, minimum and maximum values, mean scores, and standard deviations for each item.

The results indicate that health awareness campaigns encouraged respondents to improve their diet, as reflected by a mean score of 1.63 and a standard deviation of 0.544. This suggests a generally positive influence of campaigns on dietary behavior, with relatively low variation among respondents.

Similarly, respondents reported being motivated to exercise more or consider becoming more physically active due to health campaigns, with a mean score of 1.84 and a standard deviation of 0.813. This indicates overall agreement, though with some variability in individual responses.

In terms of preventive health behavior, the statement regarding encouragement to undergo medical check-ups recorded a mean score of 1.82 and a standard deviation of 1.175. While many respondents felt encouraged to consider medical check-ups, the higher standard deviation suggests notable differences in the extent of this influence among participants.

However, the influence of health campaigns on respondents' daily health-related decisions showed a comparatively higher mean score of 2.59 and a standard deviation of 1.371. This indicates a more moderate level of agreement and greater variability, suggesting that while health campaigns impact behavior for some respondents, others perceive a lesser influence on their daily health choices.

Overall, the findings demonstrate that health awareness campaigns have a positive impact on specific health behaviors such as diet improvement, physical activity, and preventive health practices, although their influence on daily decision-making varies among respondents.

| Descriptive Statistics                                                                   |     |         |         |      |                |
|------------------------------------------------------------------------------------------|-----|---------|---------|------|----------------|
|                                                                                          | N   | Minimum | Maximum | Mean | Std. Deviation |
| I trust the health information provided by the Ministry of Health.                       | 100 | 1       | 3       | 1.78 | .746           |
| I believe that doctors are the most credible source of health messages.                  | 100 | 1       | 3       | 1.99 | .893           |
| The credibility of the message source affects my willingness to follow health advice.    | 100 | 1       | 4       | 2.21 | .988           |
| I am more convinced by campaigns when the information is trustworthy and evidence-based. | 100 | 1       | 5       | 2.19 | 1.482          |
| Valid N (listwise)                                                                       | 100 |         |         |      |                |

Table X presents the descriptive statistics related to respondents' trust in health information sources and the perceived credibility of health awareness campaigns. The table summarizes the number of valid responses, minimum and maximum values, mean scores, and standard deviations for each statement.

The findings indicate that respondents generally trusted the health information provided by the Ministry of Health, as reflected by a mean score of 1.78 and a standard deviation of 0.746. This suggests a relatively high level of trust among participants, with moderate variability in responses.

Similarly, respondents tended to believe that doctors are the most credible source of health messages, with a mean score of 1.99 and a standard deviation of 0.893. This reflects overall agreement, though individual perceptions varied to some extent.

Regarding the influence of message source credibility on respondents' willingness to follow health advice, the mean score was 2.21 with a standard deviation of 0.988. This indicates moderate agreement that credibility plays an important role in shaping health-related compliance.

Furthermore, respondents reported being more convinced by health awareness campaigns when the information presented is trustworthy and evidence-based, as shown by a mean score of 2.19 and a relatively higher standard deviation of 1.482. This suggests that while many respondents value evidence-based information, perceptions regarding its influence differ considerably across individuals.

Overall, the results highlight the importance of trust and credibility in enhancing the effectiveness of health awareness campaigns and influencing individuals' acceptance of health-related messages.

## 6.4Hypothesis testing

### Hypothesis Testing Results (Regression Analysis for H1)

| Hypothesis                                                                    | Independent Variable       | Dependent Variable     | $\beta$ | t    | p-value | Result    |
|-------------------------------------------------------------------------------|----------------------------|------------------------|---------|------|---------|-----------|
| H1: Health awareness campaigns significantly influence public health behavior | Health Awareness Campaigns | Public Health Behavior | 0.65    | 7.85 | <0.001  | Supported |

### Hypothesis Testing Results (Independent Samples t-test for H2)

| Hypothesis                                                                            | Group        | N  | Mean | Std. Deviation | t    | p-value | Result    |
|---------------------------------------------------------------------------------------|--------------|----|------|----------------|------|---------|-----------|
| H2: Social media campaigns yield more behavioral change than traditional TV campaigns | Social Media | 50 | 2.05 | 0.78           | 2.87 | 0.005   | Supported |
|                                                                                       | Television   | 50 | 1.72 | 0.65           |      |         |           |

### Hypothesis Testing Results (Moderation Analysis for H3)

| Hypothesis | Independent Variable | Moderator | Dependent Variable | Interaction $\beta$ | t | p-value | Result |
|------------|----------------------|-----------|--------------------|---------------------|---|---------|--------|
|------------|----------------------|-----------|--------------------|---------------------|---|---------|--------|

|                                                                              |                            |                 |                        |      |      |       |           |
|------------------------------------------------------------------------------|----------------------------|-----------------|------------------------|------|------|-------|-----------|
| <b>H3: Trust in the source strengthens the effectiveness of the campaign</b> | Health Awareness Campaigns | Trust in Source | Public Health Behavior | 0.22 | 2.53 | 0.012 | Supported |
|------------------------------------------------------------------------------|----------------------------|-----------------|------------------------|------|------|-------|-----------|

This section presents the results of hypothesis testing based on the statistical analyses conducted. The study tested three hypotheses related to the influence of health awareness campaigns on public health behavior in Saudi Arabia, the comparative impact of social media versus television campaigns, and the role of trust in the message source.

### **H1: Health awareness campaigns significantly influence public health behavior**

To test H1, a regression analysis was conducted with exposure to health awareness campaigns as the independent variable and public health behavior as the dependent variable. The results indicated a significant positive relationship ( $\beta = 0.65$ ,  $t = 7.85$ ,  $p < 0.001$ ), supporting H1. This suggests that exposure to health campaigns increases individuals' engagement in healthy behaviors, including diet improvement, physical activity, and preventive health practices.

These findings are consistent with the **Health Belief Model (HBM)**, which posits that perceived susceptibility, severity, benefits, and cues to action motivate behavior change (Rosenstock, 1974; Glanz & Bishop, 2010). Previous studies have shown that campaigns grounded in HBM principles effectively enhance health awareness and promote preventive behaviors (Noar & Zimmerman, 2005; Hochbaum, Rosenstock, & Kegeles, as cited in Glanz & Bishop, 2010). In the Saudi context, the campaigns likely increased perceived risk and severity, motivating respondents to adopt healthier behaviors.

## **H2: Social media campaigns yield more behavioral change than traditional television campaigns**

An independent-samples t-test was conducted to compare the behavioral impact of social media campaigns versus traditional television campaigns. Respondents exposed to social media campaigns reported higher behavioral change scores ( $M = 2.05$ ,  $SD = 0.78$ ) compared to television campaigns ( $M = 1.72$ ,  $SD = 0.65$ ),  $t(98) = 2.87$ ,  $p = 0.005$ . These results support H2, indicating that social media campaigns are more effective at influencing public health behavior.

The effectiveness of social media campaigns can be explained through the **Theory of Planned Behavior (TPB)** (Ajzen, 1991). Social media allows campaigns to shape attitudes by emphasizing benefits, leverage subjective norms by engaging influential figures, and enhance perceived behavioral control through actionable guidance. In Saudi Arabia, where family, social expectations, and cultural norms strongly influence behavior, social media campaigns are able to reach audiences in more personalized and socially relevant ways (Alahmad, Kurdi, & Almutairi, 2023).

## **H3: Trust in the source strengthens the effectiveness of the campaign**

To test H3, a moderation analysis was performed, examining the effect of trust in the source on the relationship between campaign exposure and public health behavior. The interaction term was significant ( $\beta = 0.22$ ,  $t = 2.53$ ,  $p = 0.012$ ), supporting H3. This indicates that campaigns delivered by credible sources—such as the Ministry of Health, doctors, or trusted social media influencers—have a stronger impact on behavior.

This finding aligns with **Social Cognitive Theory (SCT)** (Bandura, 1986), which emphasizes the importance of observational learning and modeling from credible role models. Campaigns that demonstrate desired behaviors through trusted figures increase self-efficacy and encourage imitation (Glanz & Bishop, 2010). Research in Saudi Arabia has shown that audiences are more likely to follow health recommendations when messages come from reliable sources, including medical professionals and popular influencers (Alsubaie & Jones, 2022).

## 7.4Summary

Chapter Four presented the analysis of data collected to examine the impact of health awareness campaigns on public health behavior in Saudi Arabia. The descriptive statistics showed that most respondents were young adults, predominantly male, with a majority holding a bachelor's degree and being employed. Participants reported regular exposure to health campaigns, mainly through social media, and perceived the campaigns as informative and motivating.

Reliability and validity tests confirmed that the questionnaire was a dependable tool for measuring exposure, awareness, behavioral impact, and source credibility. Cronbach's alpha values indicated acceptable internal consistency across all constructs.

Hypothesis testing revealed that health awareness campaigns significantly influence public health behavior, social media campaigns are more effective than traditional television campaigns, and trust in the source enhances the campaigns' effectiveness. These results align with the Health Belief Model, Theory of Planned Behavior, and Social Cognitive Theory, emphasizing the roles of perceived risk, behavioral intention, social norms, and credible role models in shaping health behaviors.

Overall, the chapter demonstrated that health awareness campaigns are effective in promoting knowledge and positive behavioral change, particularly when delivered via social media and endorsed by trusted sources.