

# Preventive Practices Followed During the COVID-19 Pandemic as a Mediating Variable between Illusion of Illness and Psychological and Social Adjustment among Members of Saudi Society

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## Abstract

This study aimed to identify the preventive practices followed during the COVID-19 pandemic as an intermediary variable between hypochondria and psychological and social adjustment among members of Saudi society. The descriptive correlative and comparative approach and path analysis were used. The study sample consisted of 941 respondents, to whom the measure of preventive practices followed during the COVID-19 pandemic, the hypochondria scale, and the psychological and social adjustment scale were used. The results of the study indicated that the highest preventive practices followed during the COVID-19 pandemic among the study members were health practices, followed by cognitive practices. The behavioral practices ranked last and the level of psychological adjustment recorded a lower degree than social adjustment and a higher level of hypochondria. It was also noted that there is a positive and statistically significant relationship at the level  $\alpha=0.05$  or less between the cognitive practices dimension, the total degree of the behavioral practices scale used during the COVID-19 pandemic, all dimensions of the psychological and social adaptation scale and the total score. It was also observed that there was no relationship for the same three dimensions with psychological adjustment and that there was a negative relationship between all dimensions of the measure of preventive practices followed during the COVID-19 pandemic, except for the dimension of social practices and the overall degree of the disease delusion scale. And the preventive practices behavioral, cognitive and social explained an amount of 93% of the psychological and social adaptation to COVID-19 disease, and there was a statistically significant effect of cognitive, behavioral, and social practices on psychological and social adaptation at the level of significance  $p<0.05$ . It was also noted that the modified effect of hypochondria on the relationship between cognitive preventive practices, behavioral practices and psychological and social adaptation with COVID-19 was not accepted. There was a modified effect of hypochondria on the relationship between social preventive practices and psychological and social adaptation with COVID-19 at the level of significance  $p<0.5$ .

**Keywords:** Preventive practices • Hypochondria • Psychological and Social adjustment

## Introduction

On 30/1/2020, the World Health Organization announced that the disease COVID-19 resulting from the emerging corona virus stands as a public health emergency with a global impact and is rapidly evolving, very contagious and fatal to become a pandemic threatening the world in all aspects and levels WHO, 2020. Its effects have extended to the psychological, social, health, economic, educational and cultural aspects, which led to the adoption of a number of medical measures and preventive practices based on scientific evidence as a necessity to prevent the virus. Moreover, there was a clear and apparent role played by psychological effects and problems [1]. More than half of US states have imposed stay-at-home orders to stop the spread of the virus. Public health efforts to mitigate the spread of disease, such as social distancing, have led to societal stresses, such as social isolation, job loss, and economic devastation, which are likely to be linked to worse outcomes in mental health, strained social relationships, and reduced health behaviors, such as: decline in physical activity and healthy food [2]. Among the behavioral practices that were followed during the pandemic COVID-19 were the introduction of behavioral rules and standards for social distancing, and the adoption of new patterns and practices of socialization, and virtual interactions became increasingly preferred over personal meetings. Some studies that have examined the manifestations and psychological impact of Middle East Respiratory Syndrome SARS have shown an increase in stress levels, memory impairment, symptoms of depression, anxiety, psychosis, sleep

disturbances, and suicidal behavior, and the long-term persistence of such symptoms. The infection rate of these disorders and mental illnesses has reached 16.5% [3].

The consequences of the pandemic were reflected on members of society by increasing social isolation and increasing symptoms of anxiety, depression, fear, tension and psychological distress. Psychological distress was associated with greater participation in negative health behaviors such as stress, psychological and social pressures, inability to psychological and social adaptation, higher hypochondria, and lower psychological immunity of individuals. The results of 23 psychological studies that accompanied the SARS virus, influenza and Ebola indicated a reflection of the psychological and social effects and the inability of the individual to bear the forced restrictions of health safety, especially if it were combined with an unknown period and a serious health situation. This makes the patient suffer from pressure and great psychological challenge along with a high level of hypochondria. Freedom and a sense of security and psychological peace are among the basic needs. Behavioral restrictions such as quarantine and loss of contact with family members and friends impose different levels of isolation on people and cause stress. The effects of different stresses on cognitive performance in different cognitive fields such as risk perception, working memory, attention, decision making, problem solving, and emotional control have been demonstrated [4].

The statistics indicate the effective role of preventive practices to deal with the COVID-19 pandemic in the Kingdom of Saudi Arabia by mitigating its

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impact and effects. The credit for this is due to the adoption of a wide range of preventive and strict behavioral measures and practices, the progress of the health system, epidemiological investigation and organized institutional work, which had an effective role in raising the level of psychological and social adaptation of community members[5]. The hypochondria can be considered a psychological structure that contributes significantly to achieving psychological and social adjustment during the pandemic, as it includes behavioral and cognitive components that reflect the human personality in life and are associated with feelings of reassurance, calm, peace with oneself and others and general psychological satisfaction regardless of life circumstances and positive or negative events [6]. The term hypochondriac disease refers to the persistent complaint of physical symptoms without real organic causes. It is a psychogenic disorder as an unconscious symbolic expression of internal conflicts and recurring frustrations according to psychoanalytic theory, or as learned behavior, especially from models of social normalization according to behavioral theory, or abnormal thinking according to cognitive theory. Preoccupation with physical symptoms and fear of suffering a serious illness fall into a continuum from mild to intense preoccupation, fear or conviction in individuals whose thoughts and actions center around an exaggerated risk of developing a life-threatening illness. Concern for health becomes a matter of constant preoccupation, fear or distress that interferes with the practices of daily life. The prevalence of hypochondriac symptoms in the community is estimated at 5-7%, and doubles in patients who have some previous diseases by 17%[7]. Psychological and social adjustment is one of the most important personal psychological strategies during difficult circumstances. This means that each individual needs a specific method in order to effectively deal with stress and anxiety. Psychological and social adaptation skills are used when the individual is in a particular problem. Concern is also increasing in the lives of individuals, especially with the current emergency conditions and their fear of infection with the emerging corona virus COVID-19. Adaptation skills and psychosocial adaptation strategies are ways to deal with stressful situations and they include a set of adaptive tools that we proactively manage to avoid exhaustion or stress. These tools can be our thoughts, emotions, and actions and extend to our personalities and social relationships Madhuleena. The importance of social adaptation lies in the fact that it is one of the important processes in the context of social life through which individuals can achieve an appropriate degree of harmony in their society, establish successful relationships and reduce the possibility of conflict between them. Adaptation plays an important role in achieving the continuity, orderliness and stability of social life. Achieving psychological and social adaptation is linked to a number of traits, including the individual's ability and willingness to adapt, and the characteristics and nature of the psychological and social field that requires adaptation. This means a balance between the internal and external environments of the individual [8]. Psychological and social adaptation is achieved through satisfaction, self-confidence, psychological and social stability and emotional balance as one of the most important dimensions of spiritual orientation in life and good psychological existence, as well as on the preventive practices that have been taken on the other hand [9]. Therefore, positive psychosocial adaptation strategies are actions that an individual takes to manage and relieve stress in his life in a way that will not be harmful in the long term. People who use positive stress adaptation strategies are not only better able to adapt with challenges and setbacks in stressful times, but they are also happier. In general, any psychological coping strategy will not be harmful or ineffective in the long term, however some strategies may work better for an individual than others in terms of the extent to which they reduce stress and help with self-management [10]. The current study sought to examine the effect of pathological hypochondria and psychological and social adjustment on the preventive practices followed during the COVID-19 pandemic, and the psychological repercussions of these practices on the mental health of community members in general. It also aimed to highlight the impact of hypochondria and psychological and social adjustment on these practices, which included cognitive, behavioral and social practices and the resulting repercussions on the mental abilities and general mental health of the individual according to the nature of the individual and his daily practices. People's adoption of the behaviors that

prevented the spread of COVID-19 varies between groups, leaving room for overall. Monitoring people's perceptions and behavioral responses to COVID-19 is essential to improving health risk communication and achieving successful changes in people's behaviors.

## Literature Review

### Theoretical framework and previous studies

During the period of the spread of the COVID-19 pandemic, individuals faced one of the most difficult crises, classified by the World Health Organization as a pandemic of severe impact, necessitating concerted efforts by all countries of the world to limit its results and effects. Their lives differed in light of this pandemic and its prevalent spread from different sides, as mental disorders, diseases and some negative behaviors spread, and individuals suffered from psychological and social adjustment difficulties during that period. Preventive practices during the COVID-19 pandemic: These practices took three forms, namely: 1. Behavioral preventive practices. 2. Social preventive practices. 3. Cognitive preventive practices. Preventive measures taken during the COVID-19 pandemic include physical or social distancing, quarantine, ventilation of indoor spaces, covering coughs and sneezes, washing hands, and keeping unwashed hands away from the face. The use of face masks or coverings in public places is also recommended to reduce the risk of transmission [11]. The Kingdom of Saudi Arabia has taken strict preventive measures to control the crisis related to the Corona pandemic COVID-19 [12]. Health behavior plays an important role not only in non-communicable diseases such as diabetes but also in communicable diseases by monitoring and supporting infection prevention and control behaviors related to communicable diseases. Hygienic behavior is critical in the context of epidemics to control the spread of diseases.

**Illusion of illness disorder:** The historical origins of hypochondria as a psychological concept go back to the seventeenth century when it was defined as a common physical condition, with the name "hypochondria", introduced by "Hippocrates" and literally meaning "below the cartilage", with the initial reference to the psychological state in the early nineteenth century, linking "hypochondria" melancholy personality traits, caused by bodily gastrointestinal disturbances. Psychological concepts became more prominent in the description of "hypochondria" from the late eighteenth century onwards. It was believed that the "pathological" state of depression would alter the body's consciousness, leading to digestive disorders. It has come to be viewed as a functional disorder characterized by physical preoccupation, excessive alertness, and abnormal pathological behaviors. Previously called paranoid disorder, hypochondria is a type of serious mental illness-called "psychosis"-in which a person cannot tell what is real from what is imagined. The main feature of this disorder is the presence of delusions, an unshakable belief in something that is not true. People with hypochondriac disorder have non-bizarre delusions that involve situations that could happen in real life, such as being followed, poisoned, deceived, plotted, or loved from a distance. These delusions usually involve misinterpretation of perceptions or experiences. However, in reality, those positions are either completely incorrect or exaggerated [13]. Hypochondria, also known as IAD, is an intense fear of developing a serious illness or life-threatening illness while emphasizing that a person's symptoms are mild or there may be no symptoms at all. This disorder may cause people to interpret the body's normal responses as evidence of a serious illness or create fears in sick people that they are sicker than they really are. This disorder usually lasts for a long time and its severity varies from person to person, increasing in intensity during times of stress and with age [14].

Hypochondria is the belief that you are seriously ill based on simple, normal symptoms in the body such as stomach sounds or mild symptoms such as occasional headaches, a simple rash or itching. Symptoms of hypochondria may include excessive anxiety and great fear of serious illness, provided that this anxiety lasts for at least six months, anxiety about minor body sensations and mild symptoms, a feeling that they confirm that the person has a serious illness, and frequent appointments with the doctor to ensure being free of any disease. The most prominent symptoms

of hypochondriac illness also include avoiding any medical care for fear of telling the person that he has a serious illness, and avoiding dealing with people and going to places where the person feels risks to his health. Symptoms also include frequent searching on the Internet for symptoms and possible causes of serious illness, difficulty maintaining a certain job for a long time, difficulty maintaining relationships, failure to perform daily activities due to anxiety and depression, constantly checking the body for signs of a particular illness, difficulty carrying out daily tasks due to anxiety and excessive thinking about serious illness, constant talk about health and focus on serious diseases such as cancer and heart disease, fear of contracting a certain disease or the possibility of contracting it due to its spread among family members, feeling uncomfortable due to negative results of medical examinations and doubting the validity of these examinations, and ease of stirring feelings of fear and stress in relation to health [15]. The reasons for hypochondria are due to a weakness in the ability to understand and analyze physical and pathological sensations, the presence of a person in the family suffering from this problem, exposure to health problems in childhood, which creates a state of anxiety and fear of anything future, exposure to a traumatic or stressful situation, and exposure of violence during childhood [16].

**Psychosocial adaptation:** Adaptation is a continuous dynamic process by which the individual aims to change his behavior to create a relationship compatible with his environment, and this relationship is determined from the first years of his life, where the person seeks to work in a positive way until he feels satisfaction and has social acceptance and ability to properly adapt to different life situations [17]. It is the process of balances carried out by the membership in order to continue life and preserve the species [18]. Adaptation is defined as: "the ability to form satisfactory relationships between the individual and his environment, which includes all the influences, capabilities and forces surrounding him that can affect his efforts to obtain psychological and physical stability in his life. This environment is represented in the natural environment, the social environment and the individual himself"[19].

**Types of adaptation:** Al-Habit 2003 classified adaptation into the following types: 1. Self-adaptation: It means the individual's ability to harmonize his motives with his social roles and his ability to coordinate between the various personality forces and make them work as one unit. 2. Adaptation of the individual to his society social adaptation 3. The adaptation of the individual to his external physical and social environment [20]. By the physical environment, we refer to everything that surrounds the individual in terms of material factors such as weather, transportation and equipment, while social means all the values, customs, traditions, religion, economic, political and educational systems that prevail in society. 4. Biological adaptation: This means is a mechanical change that occurs in the body of an organism involuntarily. 5. Psychological adjustment: The individual resorts to it if his psychological balance is disturbed, either because his needs are not satisfied or his goals are not achieved with the intention of restoring the balance that is achieved by satisfying these needs or achieving these goals. psychological and social adaptation is synonymous with mental health, as the psychologically and socially adapted person has an integrated personality that is able to harmonize his needs, behaviors, and interaction with the surrounding environment in line with community standards and maintain his independence and sound growth [21].

Maladaptation goes back to childhood due to improper development of the ego [22]. Freud stresses on the role of emotional and subconscious mechanisms and mechanisms that the individual uses to face life and adapt to it because it works to reduce anxiety and tension that he faces during different situations [23]. The process of adaptation takes place by learning behaviors from the environment during the first years of life. Reinforcement plays the biggest role in this and that the maladaptive behavior is due to wrong learning that is proven by reinforcement and not by suppression or fixation [24]. Several previous studies have been conducted and they dealt with the variables of the current study during the COVID-19 pandemic, such as [25]. which aimed to identify the preventive practices used during the pandemic COVID-19 and the factors associated with them among

teachers in Vietnam. The study sample consisted of 779 participating teachers. The results of the study indicated that the most followed preventive practices included a number of practices, such as attending awareness sessions, obtaining knowledge and knowledge aspects about the pandemic, continuous follow-up of developments about the pandemic, and adherence to preventive measures and their accurate implementation. In Ethiopia, Kebede conducted a study that aimed at evaluating the level of preventive practices and their relationship to the pandemic COVID-19 and awareness of the various risks, knowledge and situations [26]. The study sample consisted of 1037 participants. The results of the study indicated the low level of cognitive behavioral practices associated with the pandemic, and it was found that the majority of participants had fears of the pandemic. It was also noted that health practices were in need of direct interventions and education, as the cognitive, behavioral and preventive practices varied among the study members and the spread of some of their pathological fears such as anxiety and tension. Mahat-Shamir conducted a study that aimed at examining the levels of symptoms of death anxiety after being infected by COVID-19 and increasing the participants' exposure to information related to the pandemic, fear of infection and symptoms of hypochondria, which in turn increase the emergence of symptoms of psychological malaise, and some demographic variables [27]. The study sample consisted of 302 participants. The structural equation modeling analysis indicated a very good fit of the theoretical model with the data. This confirms the mediating effect of information exposure, fear of infection, and hypochondriac symptoms on the relationship between death anxiety and symptoms of adjustment disorder.

Another study was conducted by Choi and it aimed to determine the perceptions of participants in sports activities who suffer from hypochondria caused by fear of infection and changes in continuous participatory behavioral patterns. The comparison was made in the forms and types of sports participation and the ages of the participants. The study sample consisted of 229 healthy people who did not have the hypochondria. The results of the study showed the effect of exercising on both age and delusion of illness and the interaction between the two independent variables age, type of sport on the dependent variable disillusionment, and the possibility of predicting participants' perceptions, patterns of behavior and types of sports activities when some diseases such as COVID-19 occurred. The results showed the role of sports practice as a preventive and immune aspect of infection with the virus.

As Conducted Khalid also conducted a study entitled Asir community's attitude in the Kingdom of Saudi Arabia towards COVID-19 and preventive practices to deal with the pandemic. The study sample consisted of 740 respondents of both sexes. The results of the study indicated that the residents of the Asir region have high knowledge and a positive attitude towards the use of precautionary health practices and obtain information about COVID-19 from the official website of the Ministry of Health. As Conducted Al-Mutairi studied public confidence and compliance with the precautionary measures towards COVID-19 used in the Kingdom of Saudi Arabia. The study sample consisted of 1232 respondents [28,29]. The results of the study indicated that the participants had a high degree of confidence regarding the precautionary measures applied by the Ministry of Health in the Kingdom of Saudi Arabia. We also refer to the study of El-Feki which dealt with the psychological problems arising from the COVID-19 pandemic among university students. The study sample consisted of 746 Egyptian university students. The results of the study indicated that boredom is one of the most common psychological problems that university students suffer from. They also suffer from moderate levels of loneliness, depression, distress, obsessive-compulsive disorder, eating and sleeping disorders, and social fears. With regard to preventive health behaviors towards COVID-19, studied the model of cognitive health beliefs among Egyptians [30,31]. The study sample consisted of 380 respondents. The results of the study indicated that there were differences between the study variables according to a variable of age, education level, health care level, perceived sensitivity, expected obstacles, and self-efficacy, and between the regression coefficient and the predictability of preventive health behaviors through the cognitive aspect.

As Conducted Van Rooij conducted a study to assess the factors affecting Americans' commitment to stay-at-home measures and social distancing to mitigate the spread of the COVID-19 pandemic [32]. The study sample consisted of 570 American respondents from 35 states. The results of the study indicated that there is no relationship between perceptual fear and citizens' commitment to preventive measures towards COVID-19, while citizens adhere to preventive measures effectively due to fear of organized measures to deal with the pandemic. It became clear that the preventive measures associated with the COVID-19 pandemic led to a fundamental change in daily behaviors and practices in the United States. As Shah conducted a study on "focusing on mental health during the Corona Virus COVID-19 pandemic [33], the results of the study indicated a direct impact of the spread of the COVID-19 pandemic on the emergence of fear, anxiety, psychological stress and symptoms of post-traumatic stress, along with the existence of a negative impact of preventive measures and intervention measures to control epidemic outbreaks on the emergence of long-term cognitive and mental health problems on people. In this regard, and aimed to examine the concerns of Canadian citizens about the impact of the COVID-19 pandemic on self-health and the health of others, and the preventive measures that people take to avoid infection with the COVID-19 virus [34]. The study sample consisted of 4627 Canadian citizens. The results of the study indicated that Canadians suffer from severe fears, which recorded the percentage of 36%, about the impact of COVID-19 on self-health. It also turned out that people with underlying health problems had a significantly higher level of fear of the effects of COVID-19 than healthy people. On the other hand, Wang addressed the topic of immediate psychological responses and related factors during the initial phase of the COVID-19 pandemic among the general population in China [35]. The study sample consisted of 1210 respondents. The results of the study indicated that the psychological impact of the spread of the COVID-19 pandemic among Chinese citizens recorded a moderate to severe degree, with a statistically significant relationship between the updated accurate health information about treatment, the situation of the local outbreak of the epidemic, special preventive measures and low levels of psychological impact of the outbreak of the epidemic, as well as low levels of psychological impact of the pandemic outbreak. It can be said that the previous available Arab and foreign studies showed their interest in the psychological effects of the COVID-19 pandemic, the practices followed during it, the hypochondria and psychological and social adjustment among different samples of society, including university students, and patients from various groups. Those studies dealt with different psychological variables. It was noted that there are few studies that dealt with the variables of the current study in particular hypochondria, psychological and social adjustment. This is what distinguishes the current study from other studies, as well as the time it was conducted and the sensitivity of the community it dealt with. The benefit from the presentation of previous studies was represented in the theoretical rooting, its applied procedures, and its partial linkage with the current results.

**The study problem:** With the start of the total and partial lockdown procedures in a large number of countries of the world, and the high number of infections and deaths, the world has become under the weight of fear, anxiety and tension as a psychological result produced by the conditions of the pandemic. This required taking certain measures to prevent the spread of the virus. Among the measures applied to protect and enhance the mental health of its citizens and reduce feelings of fear, anxiety, depression and tension, such countries launched communication channels for psychological counseling and providing mental health services [30]. In Italy, the Italian Association of Psychiatry announced that more than two million Italians suffer from difficulty leaving the house and returning to normal life for fear of infection with the emerging Corona virus COVID-19, and returning to the practice of daily normal life has become a great psychological difficulty with a feeling of anxiety, fear and tension.

The association stressed that these concerns should not be underestimated, whether at the level of Italian society or the global community, and work to support and strengthen the mental health aspects of the affected people and provide them with psychological and social

counseling services in a timely manner Italian Psychiatric Association, 2020. It also confirms the results of studies conducted on the psychological and social effects of the pandemic, such as [36], and some foreign studies, such as the study [25-29,31], which shows that there are negative psychosocial outcomes during the pandemic. This resulted in a decrease in the level of psychological and social adjustment of individuals and an increase in the level of hypochondria. This reflected negatively on their ability to adhere to preventive practices and precautionary measures for optimal handling in the face of the pandemic, and the impact of this on their moods, which increased mental disorders and diseases.

The problem of the current study emerged from the reality of the research team's work, their therapeutic and counseling experience, and their participation in support and social support for community members during the COVID-19 pandemic, and what they observed of the spread of mental disorders and disease fears, an increase in their level of hypochondria, a decline in their ability to psychological and social adaptation, and the weakness of their behavioral skills and social interactions with the pandemic at its peak. This reflected negatively on their physical and psychological health and doubled the spread of these disorders in the society. Accordingly, the current study examines the effect of hypochondria and its psychological symptoms as a psychological disorder on psychological and social adjustment and the resulting negative effects on the practices followed as precautionary measures. The problem of the current study is represented by answering the following questions:

1. What are the most common preventive practices followed during the COVID-19 pandemic, from the point of view of community members?
2. What is the level of hypochondria and psychological and social adjustment among the study members?
3. What is the relationship between the preventive practices followed during the COVID-19 pandemic total score and dimensions and the hypochondriac level and psychological and social adjustment total score and dimensions among the study members?
4. Can the preventive practices followed during the COVID-19 pandemic be considered a mediating variable in the relationship between the dimensions of psychological and social adaptation and the hypochondria among the study members?
5. What is the effect of the rate of hypochondria associated with COVID-19 on the relationship between cognitive, behavioral, and social preventive practices and psychosocial adaptation?

#### Objectives of the study

1. Determining the most common and applied preventive practices among members of Saudi society, the level of hypochondria and psychological and social adjustment.
2. Revealing the relationship between the preventive practices followed during the COVID-19 pandemic and those suffered from hypochondria and psychological and social adjustment among the study members.
3. To test that the preventive practices followed during the COVID-19 pandemic are a mediating variable in the relationship between the dimensions of psychological and social adaptation and hypochondria among the study members.
4. Determining the modifying effect of hypochondria, which is associated with COVID-19, on the relationship between cognitive, behavioral, and social preventive practices and psychosocial adaptation.

#### Research significance

##### First theoretical significance:

- The study deals with variables of importance and a direct relationship to the study members during the pandemic that directly affects their daily behavioral practice.
- The importance of the current study highlights its connection with the members of Saudi society who have kept pace with the events of the

pandemic and to identify the level of hypochondria and their psychological and social adaptation towards the tiring preventive practices during the pandemic COVID-19.

- This study deals with variables that have a significant impact on the mental health of members of the Saudi society, and affect human energies at an advanced stage if psychological support is not intervened early or science has not reached a solution.

- The scarcity of Arab studies that dealt with hypochondria, psychological and social adaptation, and preventive practices to deal with the COVID-19 pandemic among members of Saudi society.

- The study represents a new addition and enrichment to the Arab library in the field of mental health by addressing the two variables of hypochondria and psychological and social adjustment.

**Second applied significance:**

- The results of the study can be used for psychological support, guidance and counseling for various members of Saudi society so that they can maintain a high level of psychological and social adjustment.

- The results of the study contribute to the preparation of indicative programs to promote mental health among various segments of society in general, and those infected or recovering from the COVID-19 pandemic in particular.

- The results of the study contribute to the preparation of training programs on how to overcome the difficulties and psychological pressures that may result from the COVID-19 pandemic.

- This study may raise a lot of questions for researchers to conduct further studies in this field or with samples in various other fields.

- The limits of the study:

- The current study is limited to knowing the preventive practices followed during the COVID-19 pandemic as a mediating variable between hypochondria and psychological and social adjustment among members of Saudi society. The study sample consisted of various residents of the Kingdom from all governorates east, west, north, south, and the sample included males and females of varying ages. The study was implemented during the year 2021, so the generalization of the results is limited to the time period and the environment in which the study was applied.

**Terminology's:** The precautionary measures followed in the COVID-19 pandemic: The research team adopted the definition of the preventive practices followed during the COVID-19 pandemic as “a set of procedures and instructions that are adhered to in public places, homes, workplaces and travel, which contribute significantly to reducing the possibility of infection with the virus and prevent the spread of infection Weqayah, 2020. The overall score obtained by the respondent with the tool that the research team prepared.

**Illusion of illness:** The research team adopted the definition of the tool author 251 as “the persistent complaint of physical symptoms without the presence of real organic causes, a psychogenic disorder or a symbolic subconscious expression of internal conflicts and repeated frustrations according to psychoanalytic theory, or as a learned and acquired behavior, especially from models of social normalization according to behavioral theory or polarized thinking and false self-gestures, according to cognitive theory, and it is measured by the degree to which the respondent obtains on the scale used in the current study, prepared by both Hinz and others.

**Psychological and social adjustment:** The research team of the study adopted the definition of the author of the tool, as “a situation in which there is a harmonious relationship between the individual and his social environment, so the individual can satisfy most of his social needs while accepting the demands that the environment imposes on him, and it is the process that involves making the necessary changes in the person or in the environment or both in order to achieve harmony in the relations between them. The psychological and social adaptation is measured by the total degree that the respondent obtains with the current tool.

**COVID-19 pandemic:** The World Health Organization WHO 2020 defines COVID-19 pandemic as “the disease caused by the novel coronavirus called SARS-CoV, first detected on December 31, 2019, after a cluster of viral pneumonia cases were reported. It has been described as rapidly spreading.

**Hypotheses:**

1. The preventive practices followed during the COVID-19 pandemic vary so does the Hypochondriasis and psychological and social adjustment among members of Saudi society.

2. There are negative, statistically significant, correlations between the preventive practices followed during the COVID-19 pandemic total degree and dimensions and everyone who suffers from hypochondriasis and psychological and social adjustment total degree and dimensions among the study members.

3. The preventive practices followed during the COVID-19 pandemic can be considered as a mediating variable in the relationship between the dimensions of psychological and social adaptation and the Hypochondriasis among the study members.

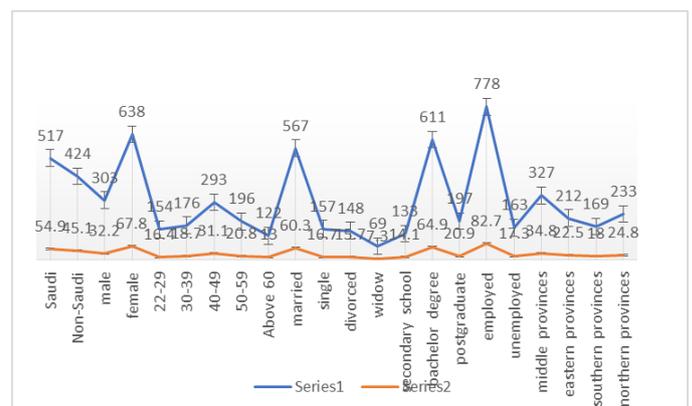
4. There is a modified hypochondriac effect on the relationship between cognitive, behavioral, and social preventive practices and psychosocial adjustment to COVID-19.

**Material and Methods**

To achieve the objectives of the study, the descriptive correlative, comparative approach was used to reveal the correlation and preventive practices followed during the pandemic COVID-19 as a mediating variable between Hypochondriasis and psychological and social adjustment among members of Saudi society.

**Study population and sample**

The study population consisted of all segments of Saudi society in the Kingdom of Saudi Arabia during the period of application of the study 2021. The study sample consisted of 984 respondents to the study tools from different segments of Saudi society in the Kingdom of Saudi Arabia. They were selected by cluster random sampling from all regions of the Kingdom of Saudi Arabia during the study application period. The responses that did not meet the requirements for statistical processing were excluded, and those whose paragraphs were not fully answered. The number of the study sample that was subjected to statistical processing was 941 respondents. Figure 1 shows a description of the characteristics of the study members.



**Figure 1.** Characteristics of the study members according to demographic variables (n=941). Note: (—) Series 1, (—) Series 2

**Study tools**

To achieve the objectives of the study, the following scales were used:

**First:** The measure of preventive practices followed during the COVID-19 pandemic, prepared by researchers, and consisting of 38 items distributed over four dimensions as follows:

1. Cognitive practices 1-12.
2. Behavioral practices 13-24.
3. Hygienic practices 25-31.
4. Social practices 32-38.

For the purpose of correcting the tool, the respondent selects the answer in the manner of five Likert alternatives always, often, sometimes, rarely, never. The psychometric properties of the tool were verified by calculating the correlation coefficients of the paragraph with the dimension to which it belongs. All items were statistically significant at a level  $\alpha=0.05$  or less with the dimension to which the item belongs and the total score of the tool. The internal consistency stability coefficient Cronbach's alpha was  $\alpha=0.75$ ; 0.73; 72,75 for the dimensions respectively and 0.80 for the total score of the scale. The values of the Spearman's half-segment stability coefficient were 0.92; 85,78, 88, for the dimensions, respectively, and 0.98 for the total score of the scale. Thus, the scale is suitable for the purposes of the current study, as the value of the stability coefficient was higher than 70%, which indicates the appropriateness of the psychometric properties of the tool.

**The illusion of illness scale:** To achieve the objectives of the study, the Hypochondriasis Scale, prepared by Hinz and consisting of 14 items, was used. All paragraphs represent the positive tendency except for the ninth paragraph which states "Is it easy for you to forget about yourself and think about other things" which was reversed upon correction. Respondents to the tool estimate the frequency of their symptoms through a binary scale, where the choice is yes=score, no=zero. A high score indicates a high level of hypochondriasis, while a low score indicates a low level of hypochondriasis in the individual. The psychometric properties of the tool were verified by translating it into Arabic to achieve the objectives of the current study, and re-translating it again into English by language and translation specialists. The apparent validity was extracted by presenting its initial form to a group of arbitrators  $n=8$ ; professors specialized in measurement, evaluation, and psychological counseling at the Department of Psychology at Imam Muhammad bin Saud Islamic University. The correlation coefficients of the paragraph with the dimension to which it belongs were also calculated, and all paragraphs were statistically significant at a level  $\alpha=0.05$  or less with the dimension to which the paragraph belongs and the total score of the tool. The corrected item-total correlation was calculated, as it ranged between 344 for paragraph 5 and 747 for paragraph 2. The reliability of the scale was also calculated in two ways: the method of re-application reliability, as the scale was applied in its final form to the exploratory sample, and it was re-applied to the same group with an interval of two weeks. Moreover, Pearson's equation was calculated to calculate the stability coefficient test-retest stability between the respondents' scores in both times of application, as the repetition  $r$  value was 689. Cronbach's alpha stability reliability coefficient was calculated, and the internal consistency coefficient for the total degree of the tool was 75.

**The Psychological and social adaptation scale:** The Psychological and Social Adaptation Scale prepared by Gharaibeh 2014 and consisting of 55 items distributed over two dimensions: the dimension of psychological adjustment and the dimension of social adjustment were used. For the purposes of correcting the study scale, the respondent chooses one of the five available alternatives where the option always is given 5, the option often is given 4 degrees, the option sometimes is given 3 degrees, the option rarely is given 2 degrees, and the option never is given 1 degree. The psychometric properties of the tool were verified by calculating the correlation coefficients of the paragraph with the dimension to which it belongs. All items were statistically significant at a level  $\alpha=0.05$  or less with the dimension to which the paragraph belongs and the total score of the tool by calculating the internal consistency coefficient Cronbach's alpha, which amounted to  $\alpha=0.70$ ; 0.66 for the dimensions respectively and 69.0 for the total score of the scale. The values of the half-segment stability coefficient were  $=0.85$ ; 84 for the dimensions, respectively, and 0.83 for the total score of the scale. Thus, the scale is suitable for the purposes of the current study. The value of the stability coefficient was higher than 70%, which indicates the appropriate psychometric properties of the tool.

## Statistical methods

To achieve the objectives of the study and answer its hypotheses, arithmetic means, standard deviations, Pearson correlation coefficient, Standard Regression Weights and standardized regression coefficient were used, and through AMOS software, Regression Weights Unstandardized Model and the mean-centering approach were implemented.

## Results and Discussion

### Presentation and interpretation of the results of the first and second hypotheses

To answer the two hypotheses of the study, "the preventive practices followed during the COVID-19 pandemic vary, and the illusion of illness psychological and social adjustment among members of the Saudi society," the arithmetic means and standard deviations of the dimensions and the total degree of the tool were used, as in Table 1: It is clear from Table 1 that the highest preventive practices followed by the study members were health practices with a mean of 51.0946 and a standard deviation of 7.20377, followed by cognitive practices with an arithmetic mean 47.2816 and a standard deviation 7.34922, followed by social practices with an arithmetic mean of 31.9713 and a standard deviation 3.41776, and finally the behavioral practices came with an arithmetic mean of 28.2242 and a standard deviation of 3.41776. The table shows that psychological adjustment recorded a lower degree than social adjustment, as the average psychological adjustment was 78,90 with a standard deviation 8.08, while the average social adjustment was 119,31 with a standard deviation 8,62. Moreover, the hypochondriasis recorded the arithmetic mean 5.50 and the standard deviation 3.3. This result can be explained by the pandemic and the cognitive beliefs that prevailed in society during the beginning of the pandemic, and the resulting effects of hospitalization, the loss of some loved ones, and relatives of some, as well as the rumors that spread about the vaccine, conspiracy theory around it, some cognitive distortions, and practices that were followed by the official authorities, such as precautionary measures and social distancing, imposing curfew and lockdown, adopting e-learning, and other practices. This prompted the opposite of the logicity of the above results, which showed that the most behavioral practices were behaviors related to individual sterilization, obsessions related to personal and home hygiene, and cognitive practices in the pursuit of knowledge and data related to the pandemic. Social practices recorded a high degree because the causes of the COVID-19 pandemic are social integration and social interaction. The results came to explain the weakness of psychological adjustment compared to social adjustment. This is evident in the common psychological disorders caused by the pandemic such as anxiety, fears and other psychological diseases that were reflected on members of society due to the pandemic and the procedures related to it. Finally, the results indicated a high level of hypochondriasis. This may be due to a number of reasons represented first in the epistemological beliefs related to the pandemic, the prevalent pathological and psychological fears during the pandemic, the spread of conspiracy theory and the serious and precautionary controls applied in society due to the pandemic, the low level of social interaction and family bonding, the spread of physical diseases and the high rates of infection in the population. This result partially agrees with the results of studies like 34,35,33, the results of which showed a decrease in the psychological aspect and behavioral skills, an increase in the percentage of health practices, and the spread of morbid fears and mental disorders among members of the community.

**Table 1.** Shows the arithmetic means and standard deviations of the preventive practices followed during the COVID-19 pandemic, hypochondriasis, and psychological and social adjustment among members of Saudi society  $n=941$ .

Dimensions	Arithmetic means	Standard deviation
Cognitive practices	47.2816	7.34922
Health practices	51.0946	7.20377
Behavioral practices	28.2242	3.91447
Social practices	31.9713	3.41776

Total score of the preventive practices' scale during COVID-19 pandemic	158.5717	18.31377
Psychological adaptation	78.9065	8.08399
Social adaptation	119.3146	8.62806
Total score of the psychological and social dimension	193.847	13.04224
Total score of hypochondriasis	5.5005	3.34334

### Presentation and interpretation of the results of the third hypothesis

To answer the third hypothesis, "There are negative, statistically significant correlations between the preventive practices followed during the COVID-19 pandemic total degree and dimensions and everyone who suffers from hypochondriasis and psychological and social adjustment total degree and dimensions among the study members", The Pearson correlation coefficient was used, as in Table 2: It is evident from Table 2 that: There is a positive and statistically significant relationship at the level  $\alpha=0.05$  or less between the cognitive practices dimension and the total degree of the behavioral practices scale used during the COVID-19 pandemic and all dimensions of the psychological and social adaptation scale and the total score. The current result is justified by the fact that the positive cognitive structures and beliefs that prevailed among members of society during the COVID-19 pandemic and that they were free of conspiracy theories reflected positively on the psychological and social aspects of adaptation and increased psychological immunity, which is an important element in the face of psychological and psychosomatic disorders. This means that there is a direct impact of the cognitive aspects on the psychological and social aspects, and this is confirmed by theories that are concerned with the study of the human personality from a holistic point of view. There is a positive and statistically significant relationship at the level  $\alpha=0.05$  or less between the behavioral practices dimension, health practices dimension, social practices dimension, and the total score of the psychological and social adjustment scale. Besides, there is no relationship for the same three dimensions with psychological adjustment. The current result is justified by the psychological and social repercussions and the effect that these aspects play as psychological drivers and forces within the human personality on individuals, in order to achieve the ability to psychological and social adaptation. Perhaps the absence of a relationship with the three dimensions of the scale of practices followed during the pandemic is due to the psychological aspect of disease fears, low psychological immunity, high number of injuries, the absence of a vaccine to help reduce them, and the high death rate, which negatively affected the psychological aspects and led to high anxiety and pathological fears of infection and its effects.

**Table 2.** Pearson's correlation coefficient between the preventive practices followed during the COVID-19 pandemic, hypochondriasis and psychological and social adjustment among members of Saudi society n-941.

Dimensions	Psychological adaptation	Social adaptation	Total score of the psychological and social scale	Total score of hypochondriasis
Cognitive practices	0.120**	0.308**	0.269**	0.039
Behavioral practices	0.059	0.320**	0.236**	0.030
Health practices	0.048	0.334**	0.241**	0.001
Social practices	0.032	0.259**	0.140**	0.201**
Total score of the scale of the behavioral practices during COVID-19 pandemic	0.076*	0.369**	0.279**	0.0310**

\*,\*\*=Significant relationship at the level ( $\alpha=0.05$ ).

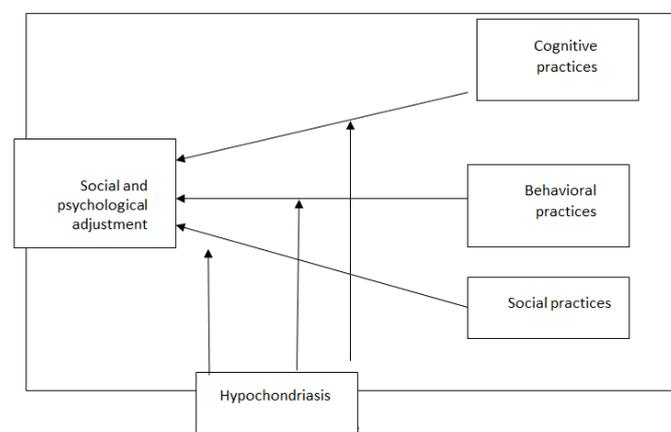
There is a non-significant negative relationship at the level  $\alpha=0.05$  or

less between all dimensions of the preventive practices scale used during the COVID-19 pandemic, except for the social practices dimension and the overall degree of the hypochondriasis scale. The negative relationship refers to the logic of the results, meaning the higher the preventive practices in a tangible, clear and exaggerated manner, the reflected on mental health in general. These practices explained the depth of psychological fears suffered by the individual, the lower levels of psychological immunity to him, the higher the degree of hypochondriasis, and pathological obsessions about the disease. This result partially agrees with a number of previous studies such as [31-33,35] whose results indicated the existence of a relationship between some psychological variables and the absence of a relationship with each other with regard to precautionary measures and some related variables.

### Presentation and interpretation of the results of the fourth hypothesis

To answer the fourth hypothesis of the study, "The preventive practices followed during the COVID-19 pandemic can be considered as a mediating variable in the relationship between the dimensions of psychological and social adaptation and the hypochondriasis among the study members." To verify the validity of this hypothesis, a causal model was built through the following steps:

- Building a causal model between the preventive practices followed during the COVID-19 pandemic, hypochondriasis, and psychological and social adjustment.
- Charting the course of the relationships between the practices followed during the pandemic, hypochondriasis, and psychological and social adjustment.
- Calculation of path coefficients.
- Testing the conformity of the proposed model to the data of the current study (Figure 2).



**Figure 2.** A causal model between the preventive practices followed during the COVID-19 pandemic, hypochondriasis, and psychosocial adjustment.

In order to model the variables in the structural model to implement Structural Equation Modeling SEM, based on the hypothesis, the independent variables were linked to the dependent variable through the one-way arrow, and then the hypotheses were checked through Standard Regression Weights, as in Figure 3, through which it is possible to determine the correlation values between the independent variables, loading a standard factor and  $r^2$  for each variable, in addition to the standardized regression coefficient that connects the independent variables to the dependent variable. To test the hypothesis of the study through the AMOS software, the Regression Weights Unstandardized Model or the Regression Weights Unstandardized Model was implemented, as in Figure 3 (Table 3).

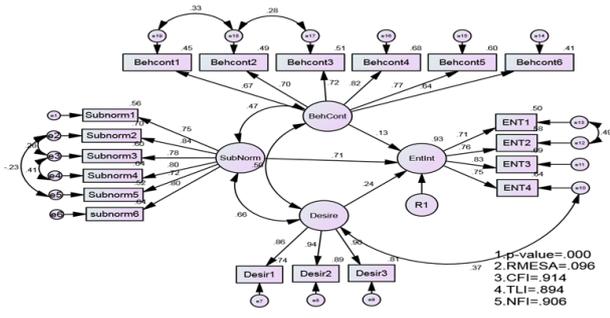


Figure 3. Shows the correlation values between the independent variables.

Table 3. Shows the interpretation related to the coefficient of determination R2 of the model.

Independent variable	R2	Finding
Psychological and social adaptation	0.93	The preventive practices behavioral, cognitive, social represent 93% of the psychological and social adaptation with COVID-19

Regression weights (non-standard model) with path analysis for all variables in the model showed the significant level probability value of each relationship in the model in addition to the actual beta regression coefficient shown in Figure 4. The value of the regression coefficient indicates the effect of the independent variables on the dependent variable and Table 4 shows how to use these values to test hypotheses. Table 4 also shows the coefficients of the regression path beta and the level of significance obtained from Figure 4. It is evident from Table 4 that there is a direct and statistically significant effect of cognitive, behavioral, and social practices on psychological and social adjustment at the level of significance  $p < 0.05$ . The presence of a direct impact on each of the psychological and social adaptation and cognitive, behavioral and social practices can be explained by the fact that they play a constructive and essential role in the components of the human personality and its balance and help it to build the individual's social relationships, form his own capabilities and help him develop psychological and social adaptation. This means that the individual's cognitive ability and his high degree in cognitive aspects are reflected on his performance from a social and psychological aspect and reflect his ability to adapt in a positive way. Behavioral practices are also one of the main axes that help the individual adapt, especially when adhering to the instructions and procedures followed during the pandemic. This, in turn, is reflected on the performance of individuals, their individual skills, and their ability to adapt and carry out social activities and individual practices that they carry out all the time.

This result is consistent with the results of studies carried Mahat-Shamir, et al. [25,26] which indicated that the most followed preventive practices included a number of practices such as attending awareness sessions, obtaining knowledge and knowledge aspects about the pandemic,

continuous follow-up of developments about the pandemic, adherence to preventive measures and their accurate implementation, p the low level of cognitive behavioral practices associated with the pandemic. It turned out that the majority of participants had fears of the pandemic. It was also noted that health practices needed direct interventions and education, as the cognitive, behavioral and preventive practices varied among the study members and the spread of some of their pathological fears such as anxiety and tension.

### Presentation and interpretation of the results of the fifth hypothesis

To answer the fifth hypothesis of the study, "there is a modified effect of hypochondriasis on the relationship between cognitive, behavioral, and social preventive practices and psychological and social adaptation to COVID-19", the researcher used the mean centered method. It is one of the most common methods of analyzing the modified effect of a variable on the relationship between two variables as suggested by Aiken and West 1991. In this study, the mean centered method was used to test the modified effect of hypochondriasis on the relationship between the preventive practices of COVID-19 cognitive, behavioral, and social practices and the social and psychological adjustment to the disease, through the AMOS program. Table 5 shows the modified effect of hypochondriasis on the direct effect of preventive practices on social and psychological adjustment. It is clear from Table 5 that the modified effect of hypochondriasis on the relationship between cognitive preventive practices, behavioral practices and psychological and social adjustment with COVID-19 is not accepted. This indicates that there is no modified effect of hypochondriasis and its effect on cognitive and behavioral preventive practices on psychological and social adjustment at the level of significance  $p < 0.05$  and the existence of a modified effect of disillusionment on the relationship between social preventive practices and psychological and social adjustment with COVID-19 at the level of significance of  $p < 0.5$ .

The current result can be explained by the lack of influence of the modified variable for hypochondriasis on the relationship between preventive practices cognitive, behavioral and social, and psychological and social adaptation during the pandemic COVID-19 due to the nature of society and its behavioral, social and cognitive characteristics and the extent of its full compliance with the instructions issued by the relevant authorities regarding the cognitive and behavioral aspects and the preventive practices that they are required to perform, in addition to the positive cognitive structures of the study members and their ability to adapt, interact, and psychological and social compatibility to deal with the pandemic and the rumored knowledge information about it. This result partially agrees with the results of the study conducted by Shah, et al. [33,32] that indicated that there is no relationship between cognitive fear and citizens' commitment to preventive measures towards COVID-19, while citizens adhere to the preventive measures due to fear of organized measures to deal with the pandemic. It became clear that the preventive measures associated with the COVID-19 pandemic led to a

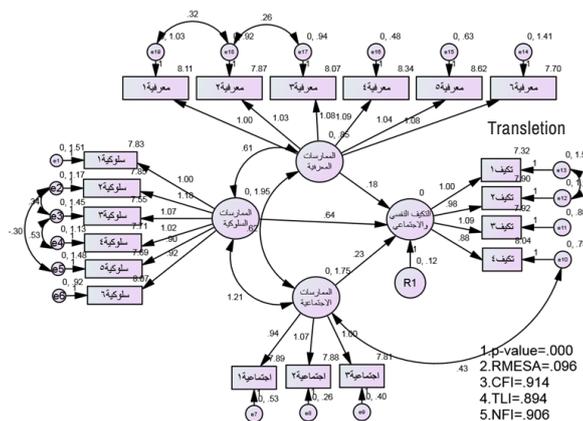


Figure 4. Regression paths among the study variables.

**Table 4.** Path analysis coefficients between the independent and dependent variables and their significance.

Dependent variable	Path	Independent variables	Estimate	S.E.	C.R.	P	Result
Psychological and social adaptation	<--	Cognitive practices	0.18	0.033	5.483	0	Sig
Psychological and social adaptation	<--	Behavioural practices	0.639	0.036	17.81	0	Sig
Psychological and social adaptation	<--	Social practices	0.226	0.029	7.754	0	Sig

**Table 5.** The modified effect of hypochondriasis in the direct effect of the independent factors on the dependent factor.

Hypotheses	P-Value	Decision
There is a modified effect of hypochondriasis on the relationship between the cognitive preventive practices and the psychological and social adaptation with COVID-19.	0.283	Rejected
There is a modified effect of hypochondriasis on the relationship between the behavioral preventive practices and the psychological and social adaptation with COVID-19.	0.172	Rejected
There is a modified effect of hypochondriasis on the relationship between the social preventive practices and the psychological and social adaptation with COVID-19.	0.016	Accepted

fundamental change in daily behaviors and practices in the United States.

## Conclusion and Recommendations

Based on the results, the current study concluded by making some recommendations:

- Enhancing preventive behavioral practices and precautionary measures among community members by holding workshops and training courses on skills in all its forms.
- Cultural, social, media and health awareness about hypochondriasis and ways to prevent it and confront it positively.
- Conducting similar studies to the current study groups dealing with variables other than those targeted by the current study, such as psychological, social, and behavioral disorders.
- Attracting the attention of specialists in psychiatric clinics and social services to build counseling programs and hold seminars and workshops to promote positive behavioral practices and psychological and social adjustment for individuals in the community and reduce anxiety and tension.

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