



Original Article

Prevalence of Fear and Anxiety About White Coat and Needle in People Referring to the Vaccination Center in 2021

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Abstract

Background: Fear and anxiety are feelings of imaginary threat and imagination of an unknown and unfamiliar phenomenon. In other words, the unpleasant and vague feeling is caused by the fact that a person expects an undesirable event to happen. The purpose of this study was to investigate the prevalence of fear and anxiety about white coats and needles in people who referred to the vaccination center in 2021.

Methods: This descriptive study was conducted in the vaccination center of Mazandaran province in 2021. After obtaining informed consent to participate in the research, a questionnaire was given to the subjects to measure their level of fear and anxiety about needles and white coats. The data were analyzed by SPSS software.

Results: Of the 112 participants, 87 were male and 25 were female, and the age of the participants was 25.38 ± 10.80 . Of these, 43.9% were the first dose and 56.1% were the second dose. In addition, 32.5% of the vaccines were injected with AstraZeneca and 67.5% with Sinopharm. There was no significant relationship between gender and anxiety ($P=0.65$). However, a significant relationship was found between anxiety and education and age ($P=0.000$, $P=0.01$) in the first and second doses ($P=0.001$), demonstrating that the anxiety of people affected by the effects decreased in the second dose.

Conclusion: The results of the present study indicated that the greatest levels of fear and anxiety toward needles and phobia of white coats were common in the age range of 12–20 years. Finally, the anxiety and fear of the participants decreased in the second dose.

Keywords: Anxiety, Fear, White coat

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Introduction

Anxiety is characterized by a sense of perceived threat and uncertainty about unfamiliar situations. Essentially, it is an uncomfortable and unclear feeling that arises from anticipating something negative. While anxiety is a natural emotion that aids people in adjusting and protecting themselves from potential risks, anxiety disorders interfere with these helpful responses, often causing exaggerated or unreasonable reactions (1). Fear of the unknown is commonly recognized as anxiety, which serves as the body's natural reaction to stress (2). Anxiety disorders are the most common psychiatric disorders and often coexist with a high burden of illness (3). The current

psychiatric diagnosis of specific anxiety disorders is not robust. The biological distinctions between anxiety and fear/phobia, as well as the classification of fear or anxiety into subgroups, have not been clearly established yet (4). Anxiety can negatively impact a patient's immunity (5). Nonetheless, these medical procedures often cause anxiety and distress in children, and needle placement remains frightening for many of them. Anticipated fear from needle-related procedures may also contribute to subsequent severe pain and emotional distress, thus creating an escalating cycle of pain and emotional distress (6,7). Iatrophobia (fear of doctors) is identified as a persistent and irrational fear of doctors/hospitals,



demonstrating specific medical undesirable effects, such as white coat syndrome or false high blood pressure in the affected individual (8). In addition, increased blood pressure with white coat syndrome, which is also known as clinic or clinical hypertension (9), is usually lower at home than at clinics (10). Normal blood pressure should ideally be determined in terms of cardiovascular risk (11). According to Assareh et al, white coats can have a positive effect on increasing the patients' blood pressure (12). Moreover, Vadiati Saberi et al indicated that most of the clients had dental anxiety (13). To the best of our knowledge, no studies have been conducted on the fear of and anxiety about white coat and needle procedures. Considering the importance of the issue and people's reluctance to visit medical centers, whether for vaccination or diagnostic procedures, this study sought to investigate the prevalence of fear and anxiety about white coat and needle procedures in individuals attending the vaccination center in 2021.

Materials and Methods

This descriptive study was performed at the vaccination center of Mazandaran province in 2021. The study population included all individuals who visited this center and voluntarily completed the questionnaire before the vaccine injection. The inclusion criteria were willingness to participate in the study, all attending individuals, and gender (male and female). On the other hand, individuals who withdrew from the study for any reason and did not complete the questionnaire were excluded from the study. After obtaining informed consent from the attendees, they were asked to complete the questionnaires. Moreover, they were assured that all remaining information would be kept confidential and the research results would be presented in general terms. The data collection tool for this study was a questionnaire designed with 10 questions to assess the individuals' level of fear and anxiety about needles and white coats. This questionnaire used a formal validity method to determine its validity; thus, the questionnaire was made available to the supervisors, consultants, and several nursing experts for review, and necessary revisions were made after receiving their valuable feedback. The reliability of the questionnaire was assessed using the test-retest method, where a group of patients completed the questionnaire on multiple occasions, and after a minimum interval of two weeks, the questionnaire was again made available to the initial samples. An acceptable repeatability coefficient was obtained by analyzing the results obtained from the first and second rounds of questioning. This questionnaire has a total score of 100, which is divided into 5 intervals, namely, 0–20, 20–40, 40–60, 60–80, and 80–100, representing very low, low, moderate, high, and very high levels of anxiety of individuals about needles and white coats, respectively. After coding, the data were entered into SPSS software (version 26) and then examined by calculating the percentages, means, and standard deviations and using parametric statistical tests

such as *t* tests and non-parametric chi-square tests.

Results

The findings of this study revealed that 87 participants were male and 25 were female, with a mean age of 25.38 ± 10.80 years. In terms of the educational level, 38.6% and 25.4% were below diploma and diploma, respectively. In addition, 26.3%, 5.3%, and 2.6% had bachelor's, master's, and doctorate degrees, respectively. Of these, 43.9% were examined for the first dose, 56.1% were examined for the second dose, and the vaccine type chosen by these individuals was AstraZeneca (32.5%) and Sinopharm (67.5%). Based on the results, there was no relationship between the level of anxiety in males and females ($P=0.65$), and both genders were in the 20–40 range, indicating low anxiety. However, the educational level was significantly associated with the anxiety level of individuals ($P=0.01$), and the level of stress and anxiety decreased with increasing educational level. Examining the level of fear and anxiety with the age of individuals ($P=0.000$) demonstrated that the level of fear, anxiety, and stress decreased with aging. The results confirmed that the level of fear and anxiety of individuals in the second dose decreased due to its side effects ($P=0.001$). The findings of this study showed that the highest levels of fear and anxiety regarding needles and phobia of white coats were common in the age group of 12–20 years. It was further found that individuals who received the Sinopharm vaccine had less fear and anxiety than those who received the AstraZeneca vaccine ($P=0.002$).

Discussion

Fear of the unknown is recognized as anxiety, which is the body's natural response to stress. Considering the importance of the issue and people's reluctance to visit medical centers, whether for vaccination or sample collection, this study was conducted to evaluate the prevalence of fear and anxiety about white coats and needles in individuals attending the vaccination center in 2021. Based on the results, no relationship was observed between gender and the level of anxiety in individuals, but in terms of education and the anxiety level of individuals, there was a significant difference. With increasing age, the level of anxiety of individuals decreased in comparison with examining the level of anxiety in individuals in the first and second doses, implying a decrease in the anxiety and stress of individuals in the second dose. The findings of this study revealed that the highest levels of anxiety and fear regarding needles and phobia of white coats were prevalent in the age group of 12–20 years. In the study by Shafique et al, overall, cognitive-behavioral therapy improved blood pressure derived from fear of doctors or white coat syndrome, which, according to the present study, shows the highest anxiety and fear in the age group of 12–20 years. Thus, cognitive-behavioral therapy can be used to address this issue (8). The results of the study by Helvaci and Seyhanli confirmed that white coats

could have a positive effect on increasing blood pressure (11), which is in line with the results of the present study because white robes led to an increase in the anxiety of the patients. The findings of Dillon et al indicated that individuals reported severe fear associated with blood pressure measurement, while the present study focused on investigating the prevalence of fear and anxiety about white coat and needle procedures in individuals attending the vaccination center, where fear and anxiety about needles and phobia of white coats were common in the age group of 12–20 years, which can lead to avoidance of medical treatments (14). Ghasempoor and Haddadi found that the average score of anxiety and fear of dental examination was higher in females than in males, which was the most common factor related to needle injection reported in the study (15). In the present study, there was no significant relationship between gender and anxiety, while a significant relationship was observed between education level and age in individuals according to this study. The limitations of this study included the assessment of patient fear and anxiety from needles and white coats at the vaccination center, which should be evaluated among patients attending paraclinical centers, and according to the researcher's questionnaire, patient fear and anxiety can be assessed in other centers.

Conclusion

The results of the present study indicated that the highest levels of fear and anxiety toward needles and white coat phobia were prevalent in the age group of 12–20 years. Moreover, comparing the anxiety levels of individuals in the first and second doses, it is evident that their anxiety and stress about its side effects decreased in the second dose. Given the anxiety of children and adolescents in this study, methods can be employed to mitigate their fear of white coats and needles. Among the solutions, it is possible to mention measures such as using virtual reality, hearing voices, using aromatherapy, listening to people and presenting the process of doing work, and wearing scrubs and colored pants to reduce the anxiety and fear of the white coat.

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Authors' Contribution

Conceptualization: Reza Salehinia, Marzieh Nasiri Sangri, Ebrahim Nasiri Form, Reza Pourmohammad.

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Competing Interests

The authors declared no conflicts of interests.

Ethical Approval

This study was approved by the Ethics Committee of Mazandaran University of Medical Sciences (Code: IR.MAZUMS.REC.1400.622).

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