

REVIEW

White Coat Syndrome in Children and Nursing Approach

Çocuklarda Beyaz Önlük Sendromu ve Hemşirelik Yaklaşımı

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Abstract

The effect of clothing on people varies. Although colored coats have begun to be used in pediatric health service units where patients apply to the hospital, it is a matter of curiosity how the fact that healthcare professionals such as doctors, dentists, nurses, student nurses, physiotherapists and dietitians still wear white coats affects the patient of paediatric. Although the white coat gives meaning to professionalism, respectability, and cleanliness in the service areas, the white coat can harm children, and can even cause a physical increase in blood pressure psychologically, some children may develop a prejudiced attitude, and fear towards any healthcare worker wearing a white coat. Due to fear and prejudices, it is inevitable for the sick child to have negative feelings towards treatment environments where his illness will be cured and regain his health, and to every healthcare worker who wears white, and even develop behaviours such as refusing treatment, behaving aggressively towards the healthcare worker and his family, and not adapting to the hospital, just because of this negative perception. Pediatric nurses, who have a key role among healthcare professionals regarding the sick child and his family, can support the management of white coat syndrome with a therapeutic communication approach, and adaptation of the sense of humour to the profession and educational practices. This review was written to share information about the white coat syndrome in pediatric patients, the pathological conditions caused by the white coat, the communication that should be established with children, and the approach to children.

Keywords: White coat, hypertension, fear, child, nurse

Öz

Kıyafetin insanlar üzerindeki etkisi değişkenlik göstermektedir. Hastaların hastaneye başvurduğu çocuk sağlık hizmeti ünitelerinde, her ne kadar renkli forma uygulanmasına başlanmış olmasına rağmen, hekim, diş hekimi, hemşire, öğrenci hemşire, fizik tedavi uzmanı, diyetisyen gibi sağlık çalışanlarının günümüzde hala daha beyaz önlük giyiyor oluşunun hasta çocuğu nasıl etkilediği merak konusudur. Beyaz önlük, hizmet alanlarına profesyonellik, saygınlık ve temizlik anlamları versede beyaz önlük çocuklar üzerinde olumsuz etki yaratabilmekte, hatta beraberinde fiziksel olarak tansiyon yükselmesi, ruhsal olarak da bazı çocuklarda beyaz önlüklü herhangi bir sağlık çalışanına karşı önyargılı tutum ve korku geliştirebilmektedir. Korku ve önyargılar nedeniyle, hasta çocuğun, hastalığının iyileştirileceği ve sağlığına kavuşabileceği tedavi ortamlarına ve beyaz giyen her sağlık çalışanına olumsuz hisler beslemesi, hatta sırf bu olumsuz algı nedeniyle tedavisini reddetme, sağlık çalışanı ve ailesine saldırgan davranma, hastaneye uyum sağlamama gibi davranışları geliştirmesi kaçınılmazdır. Hasta çocuk ve ailesine ilişkin, sağlık çalışanları içerisinde anahtar role sahip çocuk hemşirelerinin beyaz önlük sendromu yönetiminde, terapötik iletişim yaklaşımı, mizah anlayışının mesleğe uyarlanması ve eğitici uygulamaları ile bu durumla baş etmede destek olabilir. Bu derleme, çocuk hastalardaki beyaz önlük sendromu, beyaz önlüğün ortaya çıkardığı patolojik durumlar, çocuklarla kurulması gereken iletişim ve çocuklara yaklaşım hakkında bilgi paylaşmak amacıyla yazılmıştır.

Anahtar Kelimeler: Beyaz önlük, hipertansiyon, korku, çocuk, hemşire

Introduction

Clothes leave an important and eye-catching effect on people. White, which contains all colors, is the symbol of

cleanliness and purity and also symbolizes meanings such as nobility, continuity, coolness, innocence, stability, trust and peace. The color white, which focuses on the meaning of cleanliness and reliability, is frequently used by healthcare

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professionals and is very important in professional uniforms. However, patient perceptions vary in units in which this color is used in patients of all ages (1).

The protective equipment worn by healthcare workers has a significant effect on the differences in patient thoughts depending on age. Children find a doctor wearing a white coat to be more prestigious than he is. In relation to this, pediatric patients prefer to be treated by physicians wearing white coats (2). With this preference, the white coat is believed to create a positive effect on pediatric patients and to support the course of treatment (3). On the other hand, it has been determined that children do not find professionally dressed healthcare professionals to be sincere, although they see them as trustworthy (4).

When we look at the literature, hospitalization is seen as a social event that mobilizes everyone, but on the other hand, it is perceived as an experience with a divisive character because it alienates the child and his family from social life. A hospitalized child goes through this divisive process and needs the support of family, education, and health professionals to gradually understand the process he is involved in. Children can generally associate pain and disliked practices with the white coat. In the hospital environment; compared to adults, children may experience intense fear and even increased blood pressure in the face of the white coat that symbolizes healthcare professionals and their practices (5,6).

In the clinical practice environments of healthcare professionals who have achieved personal development in the field of childhood high blood pressure, the diagnosis of white coat high blood pressure can be made precisely when the normal value is seen in the blood pressure monitoring at home of people who apply for blood pressure evaluation. Children who are anxious or crying may exhibit an isolated form of high blood pressure known as WCH means white-coat hypertension (7).

White coat syndrome is also associated with communication that needs to be established with the patient. Healthy communication with pediatric patients is more important than that with adult patients because they are open to different behaviors and communication styles based on their age (8). In such cases, healthcare professionals are responsible for therapeutic communication.

There is a connection between humor and health. Humor is a supportive initiative that provides therapeutic communication, minimizes a person's tense feelings, reduces anger, and helps them manage difficult situations (9). As the process progressed, in addition to nurses' existing roles, humorous practices began to be used in treatment and care (10). Support may be needed to minimize the symptoms of the syndrome caused by the whiteness of the coat in children. Treatment strategies must both prevent white coat syndrome in children and strengthen the child's and family's resilience and coping with fear (7).

This review aims to share information about white coat syndrome in children, its consequences, and nursing contributions to minimize this negative situation.

Crying and Hospital Fear in Children

Crying, a typical and incomprehensible act of making sound to convey or express an emotion or desire to attract attention, is a primitive language because it contains emotions and needs. Crying with speech is a frightening and sometimes complex situation for the family that requires observation and interpretation by adults (5). Socially, crying is interpreted as "negative" by many cultures and is stated to represent human weakness. The child's cry represents pain, suffering, and something the child wants or feels for the family member (11).

Children exhibit varying levels and styles of reactions to hospitalization and treatment. Such reactions may occur due to factors such as the child's developmental level, personality, exposure to stress, previous experiences, and different environments in the hospital (12). Illness and hospitalization are significant sources of stress for children and their families and can lead to difficult emotional and psychosocial situations. The environment of healthcare institutions can have traumatic effects on children (13). Therefore, crying in a hospital environment is the first expressed and visible reaction during the hospitalization process. It may be due to not only his basic human needs but also hospital factors that stress him out. Crying response in children; insecurity is closely linked to pain and discomfort (5). However, it is also associated with separation from family and home, physical injury, and pain due to being sick and continuing to acquire new acquisitions (11). This condition can and should be alleviated by healthcare professionals, particularly nurses.

The most emphasized emotion in children with hospital experiences is fear. Failure to provide an appropriate environment to alleviate the child's fears can often negatively affect the child both physically and psychologically and disrupt the healing process (13). Perceiving the hospital as a foreign environment can be a source of fear, and since the child is exposed to strangers in white coats, hospital procedures and treatments that may cause physical and psychological tension in the hospital environment, poor management of this experience can have negative effects that may affect the child and his family for a short time or may be permanent (14).

The Effects of White Coats on Children

There has been an issue that has been discussed for years about why pediatric healthcare professionals should not wear white coats when examining children. Research on the same subject has revealed that the effect of local white coats is negative. Recently, parents have preferred that healthcare professionals who examine their children wear civilian clothes instead of traditional white coats (3,4).

Accordingly, the style of physicians' clothing can cause people to change their way of thinking, and this known information can help create a more positive understanding of the child with the attention of the physician and other healthcare professionals (3).

It is known that the physiological effects of the white coat cause increased blood pressure in some children, and the psychological effects cause white coat syndrome, which occurs with extreme fear. It can be stated that high blood pressure due to a white coat, increased office blood pressure, and blood pressure outside the office environment (ambulatory blood pressure) are not abnormal (15). Some encouraging agents are associated with the emergence of white coat syndrome, the presence of which is recognized during the recording of office blood pressure. In people with high blood pressure in white coats, there is a clear increase in blood pressure measurement results when they reach the health institution (15,16). It is often mentioned in public as one of the agents that promote high blood pressure attacks. In the clinical settings of experts in the field of pediatric hypertension, the diagnosis of white coat-related high blood pressure is often made when the required criterion is detected when the ambulatory blood pressure of people who apply for blood pressure analysis is examined (6,16,17).

In healthy children, the minimum average ambulatory blood pressure is observed at 2 hours at midnight, and this level increases, followed by the highest value at 10-11 hours in the morning. Then, it decreases at a moderate level for 16 hours and reaches its second highest level after 19-20 hours. A noticeable feature of healthy children is a 10-20% decrease in nightly ambulatory blood pressure compared with daily ambulatory blood pressure (18).

1. Clinical importance of white-coat hypertension in children

The white-collar sign (WCS) is clinically important in children and may prevent the correct diagnosis of hypertension. White coat hypertension refers to a temporary increase in blood pressure that causes anxiety in clinical settings, and the blood pressure levels assessed at home or under normal conditions may be at the required level. This may lead to misdiagnosis or unnecessary referrals in children (19). White-coat hypertension can be a reason for hypertension to become a risk in the future. Studies have shown that these children are likely to develop permanent hypertension in the future. Therefore, white-coat hypertension emerges as a clinical finding that should be observed not only for a while but also for a long-time. At the same time, ambulatory blood pressure monitoring is recommended to help identify white-coat hypertension. This option can be used to compare blood pressure at home and in clinical settings, and a clearer diagnosis can be obtained (4).

It is important to assess the effect of WCS on cardiovascular health in pediatric patients. Treatment or follow-up should be planned individually, and psychological factors, such as anxiety, in children should also be evaluated (18).

2. Factors affecting white-coat hypertension in children

WCH in children is a condition in which blood pressure is higher at the time of diagnosis than at home. It was observed that this condition was affected by more than one factor. According to recent studies, the following factors can affect white-coat hypertension in children:

- **Obesity and overweight:** Obesity is a distinguishing option for WCS, especially in children. Increased obesity values in children have also increased the prevalence of white-coat hypertension. This condition can also cause permanent hypertension in children.

- **Family history of hypertension:** Children with a family history of hypertension are more likely to develop WCS. Genetic predisposition is another option that increases the risk of white-coat hypertension in children.

- **Psychological factors and anxiety:** Anxious situations seen during the doctor's examination may cause the blood pressure level of children to increase for a while. This condition may provide an opportunity for WCS and can be observed more frequently in anxious or stressed children (20).

- **Long-term effects:** It was determined that some children with WCS may have permanent hypertension in the long-term. Children with increased blood pressure levels in particular should be carefully observed and evaluated in terms of health outcomes for the following years (20).

- **Gender:** Some studies have shown that women are more prone to WCS than men. These findings can also be considered valid in children. However, the number of studies on changes according to sex among children is limited (19).

- **Metabolic factors:** High blood sugar and triglyceride levels are associated with white coat hypertension, particularly in children with metabolic syndrome. Such metabolic risk factors are more common in people with white-coat hypertension.

- **Kidney function:** Children with kidney dysfunction are more likely to develop WCS. It can be observed particularly in children with low glomerular filtration (6).

- **Psychosocial stress:** Psychosocial factors such as family problems, school environment anxiety, and peer bullying can cause WCS in children. Such anxious situations can raise blood pressure levels temporarily (6).

- **Physical activity and lifestyle:** Low physical activity and a sedentary lifestyle can have negative effects on blood pressure. Getting rid of a sedentary lifestyle and increasing activity play an important role in controlling WCS (6).

3. Symptoms of white-coat hypertension in children

WCH in children is the high blood pressure evaluated in health institutions and the level that should be at home or

outpatient blood pressure measurements. This condition mostly occurs in children because of anxiety or stress in the clinical environment and is different from real hypertension (21).

In children with white coat hypertension, psychological anxiety symptoms are commonly observed instead of obvious physical symptoms. These children may experience symptoms such as anxiety, discomfort, increased pulse rate, and sweating during blood pressure measurements. If left untreated in the long-term, early cardiovascular changes, such as an increase in left ventricular mass index and arteriosclerosis, may be triggered (18).

The management of hypertension in children is mostly monitored through measurements taken at home. The treatment process focuses on controlling differences in lifestyles and anxieties among children, although medical treatment may also be needed (6).

4. White-coat syndrome

Anxiety; it has been defined as an unsettling psychological structure that is almost always associated with a specific situation that takes time to dissipate and is not preferred to be experienced (3). The effect of clothes on people has an important position in interpersonal communication. Mental qualities, especially anxiety and fear, may be due to white coat syndrome. This situation raises alarms for anxiety and cardiovascular disorders. Anxiety level and other characteristics; can be measured personally. It has been found that increased levels of anxiety in people treated with blood pressure-lowering drugs increase the likelihood of pseudo- and resistant high blood pressure due to the white coat effect (16).

Clothing style not only creates a positive orientation, but it can also have negative effects on people. The idea that sportswear harms people can be given as an example. A study determined that white coats increased embarrassment among individuals applying to different areas of healthcare institutions. Increased blood pressure, which has not been determined, has been observed in people with white coats used by physicians. The relationship between the white clinical uniform and anxiety is reflected in the style of high blood pressure or white coat syndrome during interventions in the field and in general health practices (1).

5. Differences between white coat syndrome and white-coat hypertension in children

The specific differences between “white coat syndrome” and “white-coat hypertension” in children are important, but they are often confused. White coat syndrome is a condition in which a child’s blood pressure rises for a while because of anxiety when examined by a nurse or doctor. In this case, it was observed that the child’s blood pressure level did not actually have an abnormality, but the blood pressure level increased for a while while the child was being examined. White coat syndrome can often lead to false hypertension diagnosis, and the reason for this is only the high values

measured in health institutions (20).

White-coat hypertension, on the other hand, is a condition that can be noticed with blood pressure monitoring for a longer period. The child’s blood pressure level can be assessed not only at health institutions but also by measuring the blood pressure at home or during the day. It is possible that the child experiences an increase that is not constantly observed in health institutions, and the blood pressure values in the home environment are at normal levels (18).

White coat syndrome is often observed as an anxiety response, but white coat hypertension can become a permanent hypertension condition in later life. Therefore, care should be taken during diagnosis, and blood pressure values should be monitored at home and outside health institutions, especially in children, to distinguish between them (19).

White Coat Syndrome Management Research

According to Taşdemir et al. (22), children’s exposure to healthcare environments through their parents increases their awareness and fears about medical conditions. Effective parental involvement and clear communication are important for alleviating these fears. In addition, this study emphasizes the need for targeted interventions and supportive environments in healthcare settings to address children’s concerns. Healthcare providers should provide child-friendly environments and psychological preparations that support parental presence. This comprehensive understanding of children’s fears about hospitals is recommended for healthcare professionals to develop better practices and policies in healthcare settings to improve the psychological well-being of children.

Bajpai et al. (23) conducted a study with 50 hospitalized children aged 6-12 in four hospitals in Moradabad, India; it was determined that hospitalization is one of the most stressful events in a child’s life, and pain and illness, blood tests in the hospital, and checks with white uniforms worn during examinations are stress factors. It has been reported that interventions should be used to reduce anxiety in children; therefore, a more individual approach should be used to develop interventions that will reduce children’s anxiety and strengthen their coping mechanisms. Since anxiety is a cognitive process, it has been reported that increasing and developing cognitive abilities in children initiate the development of their coping skills.

Alfiyanti et al. (24); it has been stated that parental participation reduces pain and anxiety in children. Participation includes atraumatic care. Atraumatic care includes providing emotional support, using distraction techniques, applying comfort measures, providing communication and education, advocacy, giving importance to cooperation with the healthcare team, participating in care routines and including the child in these routines, and ensuring that the child relaxes after the procedure.

In their study involving sick children in a hospital in the United States, Claridge and J Powell (25) stated that factors such as white coats, procedures, and unfamiliar environments in the hospital environment are often stressful experiences during hospitalization. Children also reported that social support from parents and peers and distractions related to medical routines, such as leaving hospital rooms, helped them cope with stressful experiences. Regarding children's coping ability, younger children and those receiving life specialist services were reported to be more likely to cope well. Regardless of diagnostic understanding, those who showed high levels of stress (fear, distress, and anxiety) in the assessments did not cope well.

A study by Semerci et al. (26) reported that a child-friendly design should be implemented in hospitalized pediatric units to reduce pain and anxiety in children in the hospital environment and to increase parents' satisfaction with the care provided.

In the Hypertension Diagnosis and Treatment Guideline of the Turkish Endocrinology and Metabolism Association (27), the use of lifestyle changes and drug therapy together is recommended in patients with white coat hypertension if there are additional risk factors, whereas in patients without risk factors, lifestyle changes alone are sufficient and frequent follow-up is recommended.

Nursing Approaches to White Coat Syndrome

It is known that hospitalized children experience different levels of anxiety. Nurses are healthcare professionals who spend the most time with people in the hospital environment. Because of this, they also must meet the communication needs of these people. Because nurses spend a lot of time with children during the day, they are critical in reducing anxiety and fear in children. Nurses can manage child anxiety with natural drug-free interventions (14).

Nurses' development of healthy, active communication with patients involves almost the entire disease process. The value of the bond between nurses and patients emerges during the decision-making stages. Being able to support patients is defined as being able to prevent people from reaching a non-social level, helping to facilitate the moment when the patient has difficulty explaining themselves, displaying an understanding behavior, helping to examine the person's problem, being interested in people's problems, and supporting them in meeting their basic needs. To prevent anxiety, the comforting approach of nurses who can constantly pay attention to the child and continue their regular treatment is very important for the child and their parents (7).

1. Therapeutic communication and humor

One of the most important elements of developing close relationships in health services is communication. Humor, as a form of communication, has an important quality in patient-nurse interaction (17). In a study examining nurse-child communication, it was determined that children were

passive parties during the interaction. Although nurses tried to include these children in communication, pediatric patients did not accept this additional function. Children and adolescents should pay attention to the conditions that affect them, such as health, illness, and disability. Like adults, children also have the right to hide their interests in matters of honesty, confidentiality, self-confidence, and loyalty. Pediatric patients should express their personal opinions, communicate, and interact positively with both their parents and healthcare professionals (8).

The use of humor in nursing since the early times demonstrates the importance and existence of this practice in nursing today. Every style of humor is the result of serious study. The use of humor can have different effects on health. The nurse's inclusion of humor in the care process was shown to be a personal situation of this style of understanding (10).

Humor in the nursing interventions classification; it is defined as an application that guides an individual to recognize what is fun, funny, or humorous, to establish and approve relationships, to manage stress and anger in times of crisis, and to support the ability to manage. Humor and laughter can be used to help patients who struggle with chronic diseases and who are negatively affected by stress regulate their emotions (28).

Humor; it can be in the form of entertaining cartoons, funny videos, stories, and jokes made by nurses while communicating with patients, practicing using cartoon characters, giving gifts, celebrating special days, wearing costumes, and telling jokes (29). Nurses aim to improve the patient's mood and quality of life and traditionally play a more active role than physicians in using humor and humor in patient care (10). The use of humor in nurses is a guide for people to understand and comprehend humor in a fun and funny way, to approve and say it, to communicate with the environment outside themselves and directly with the person, to minimize the tension in the environment or the person, to reduce anger, and to manage some difficult situations. A total of five themes are mentioned in Beck's (30) research conducted through humor in nursing practices. These; humor strengthens commitment and makes difficult moments easier; its use can be improvised or planned; it can be an effective therapeutic communication strategy when used correctly; its effect increases as it is shared (30). It is recommended that nurses who want to communicate effectively, reduce interpersonal conflicts, and have a positive touch on the human spirit use humor (28,29).

It is known that nurses and other healthcare professionals also use humor in clown practices. It has been found that clowning is more effective in reducing children's anxiety and fear levels during the preoperative period in pediatric clinics (2). The main aim of those who carry out this practice is to reduce the level of negative feelings created by the hospital and to minimize the level of fear by making patients smile, have pleasant moments, and laugh. It makes it easier for patients to cope, especially when they have difficult times, through the self-management of their negative feelings (8).

In some countries, hospital clowns are asked to write patient prescriptions (9).

2. Distraction method

Distraction is commonly used to reduce pain, fear, and anxiety in hospitalized children. Distraction by shifting the child's attention to something interesting is indicated by listening to music, watching videos, clowning, and blowing balloons (13).

3. Therapeutic game

This is a type of game that healthcare professionals use to understand the anxiety and fears of hospitalized children and their level of knowledge to help them cope. This type of game helps children as it helps them become familiar with the hospital and comply with hospital rules (13).

The play technique used by healthcare professionals strengthens the nurse-child relationship, improves social and creative abilities, increases confidence, strengthens children's interpersonal skills, and enables children to become active from a passive state through participation. Knowing the advantages of therapeutic play, pediatric nurses are recommended to use this game as a strategy for hospitalized children (9).

4. Web-based applications

In addition to classical methods that reduce children's fear and anxiety during hospitalization, computer and web-based interventions are the best way to prepare hospitalized children for the hospital environment. As a result of web-based training in children receiving hospital treatment, compliance with medical procedures is ensured. This method, which is referred to as a serious play intervention, is a nursing intervention used to manage the anxiety and fears of hospitalized children (13). In addition to the purpose of entertainment, these games' main focus is to provide education and learning. It has been determined that the generation that grew up with technology, digital types of serious games, and video and web-based games find them interesting and can use them easily (31).

5. Organizing the clinical environment

It is necessary to have a playground to relieve the child's stress and anxiety, to create effective and rich perception conditions, to provide safe conditions that allow the sick child to experience the environment in the health institution, and to make the hospital adaptation process more comfortable (13). The environment in the clinic should be maintained to minimize the child's anxiety. Children are greatly affected by their environments. Organizing the environment can help children reveal their needs and abilities during interactions. This makes it easier for children to adapt to the hospital environment. Examples of environment editing; include interesting visuals, materials for watching movies, and colorful rooms (32).

Conclusion

White coat syndrome occurs when children encounter a healthcare worker wearing a coat. It has been observed that this situation can trigger an increase in the child's blood pressure, as well as fear and anxiety. Although some children are not nervous about seeing a white coat, most experience it with a negative impact. Focusing on children experiencing white-uniform syndrome, they stated that parents and children do not prefer to wear white uniforms to prevent this situation. It is recommended that healthcare workers wear aprons patterned with cartoon characters in each pediatric health unit, instead of white coats, and that medical clowning should be popularized among both physicians and nurses in pediatric clinics. Additionally, close friends of pediatric patients can be brought to the clinic by taking the necessary safety precautions. In-hospital playgrounds can be created for pediatric patients, and the rooms can be designed in a way that attracts the child's attention. Additionally, the hospitalization and adaptation of children can be facilitated by providing psychological support.

Footnotes

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