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Physicians, Their Appearance, and the White Coat

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The white coat—the universal symbol of medical profession—is probably the item of clothing that is most worn by physicians. Physicians, patients, and administrative authorities might have certain ideas about the role of the white coat in the prevention or spread of infection that are not necessarily similar or correct. Indeed, the current evidence frequently used to support specific rules (eg, "dress codes" for medical students and housestaff in teaching hospitals) can easily be interpreted in several different ways.

Although most physicians show a deep intellectual curiosity while meticulously exploring various aspects of their practice strategies, they might not show enough interest in evaluating the background for such ideas and rules that can directly affect a substantial part of their lifestyle. In this article, the current evidence for a number of concepts regarding the use of the white coat and physician appearance is discussed, and the results of various studies are presented to provide a better understanding of the most commonly used professional symbol.

PATIENTS AND OUR APPEARANCE

The majority of studies evaluating the potential influence of appearance of a physician on a patient's perception have found that patients do care about their physician's appearance and even might inadvertently use it to measure a physician's competency and credibility. Indeed, a study of parents of children admitted to a pediatric ward indicated that they were twice as likely to attribute competence to physicians wearing formal attire.[1] Similarly, in a study on the impact of physician attire on patient confidence and trust, 76.3% of the 400 respondents significantly favored the professional attire with white coat.[2] It is interesting that their trust and confidence were significantly associated with their preference for professional dress.

In a study on 249 outpatients and 202 inpatients, participants were shown a male and a female physician in different dress styles and were asked to rank them from the most to the least preferred doctor.[3] The different dress styles included casual, jeans, semiformal, white coat, and formal suit. The most preferred clothing was semiformal followed by white coat. Semiformal style comprised dark trousers, a long-sleeved shirt, and a tie for the male physician and a blouse with a dark-colored skirt or trousers for the female physician. As in other studies, the least preferred clothing was jeans. In another study of 496 patients, the nametag, white coat, and stethoscope were the most desirable accessories, and sandals, clogs, and tennis shoes were the least desirable items.[4] It is not surprising that the acceptance rate of nontraditional items seems to be associated with age in various studies.[5-7] Indeed, the older the patient is, the more he or she wants a conservatively dressed physician; patients aged more than 40 years perceived casual attire more negatively than the younger patients.

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PEER PERCEPTION

One study was designed to specifically explore physician opinion on professional appearance.[8] Seventy-seven staff physicians and 35 residents from 2 Midwestern residency programs in the United States participated in this study. Most participants gave positive responses to traditional attire, such as the white coat and name tag, and shirt and tie. Negative responses were associated with casual items such as sandals and sports shoes, with the least favorable again being jeans. The older physicians favored a more traditional appearance than did younger doctors, which was similar to patients' opinions.

In a more recent study on 432 medical school faculty physicians at Vanderbilt University, the participants were asked about appropriateness of various body piercings for medical students and physicians.[7] Of these, 9 physicians (2.1%) had a tattoo themselves, and 24 physicians (5.6%) stated that they had had a nontraditional body piercing at some point in their life. Overall, the participants thought that the various piercings were inappropriate attire. In addition, a large proportion of them indicated that it would bother them to work in a clinical setting with a physician or medical student with a body piercing.

It is noteworthy that in some of these studies, patients had a more relaxed attitude toward the appearance of their physicians than the physicians themselves.[8] It is interesting that the desire for more conservative apparel is age related in both patients and physicians. Because many individuals become more conservative in many aspects of life with age, this trend can be a simple reflection of a general behavioral shift associated with aging rather than a specific phenomenon related to a physician's appearance.

PERSPECTIVES VIEWPOINTS

- Approval ratings among patients are highest for physicians who wear semiformal clothing and a white coat with a stethoscope.
- The acceptance rate of nontraditional attire seems to be associated with age among patients and physicians; younger individuals are more accepting of more casual attire.
- Physicians have many options to weigh when considering whether to wear a white coat, including professionalism, spread of diseases, and functionality.

THE WHITE COAT AS A NECESSITY

Although the white coat, along with the stethoscope, remains the universal symbol of the medical profession, it is not the most commonly used item by physicians anymore. Indeed, its popularity has significantly decreased over time. In 1991, more than 70% of hospital doctors and medical students wore a white coat for more than 75% of the time,[9] whereas a study in 2004 shows only 13% of physicians chose to wear a white coat.[5] Infection risk, discomfort, and interference in the physician–patient relationship were among the main reasons stated for the decreased use of the white coat.[5]

Although the popularity of the white coat may have declined considerably among physicians, it is still desired by many patients. Fifty-six percent of patients favored doctors wearing a white coat,[5] similar to a study on 168 patients from 3 teaching family medicine clinics in Israel, in which 52% of the patients preferred a physician in a white coat.[6] Once ranked, the white coat has been reported to be the second most desired characteristic of a physician only after the nametag or semiformal attire.

Therefore, it seems that a discrepancy might exist between physician and patient attitudes toward wearing a white coat. Although it is difficult to identify the exact reasons for this phenomenon, it is possible that knowledge and education about infection risk are at least partially responsible.

THE REASONS (NOT) TO WEAR A WHITE COAT

The original reason why physicians chose to wear a white laboratory coat in the late 19th century could have been to help produce a sense of scientific validity for their medical practice while at the same time representing cleanliness and purity. Physicians today, however, might have different reasons to wear white coats. A total of 294 medical students and physicians in London were asked why they wear a white coat and scored those reasons on the basis of their personal priorities.[9] The most common reason cited for wearing a white coat was for easy recognition by colleagues and patients (25%), followed by the need for carrying medical items (23%) and keeping underlying clothes clean (15%). Not all physicians choose to wear a white coat. In fact, 29% of the study population did not wear a white coat at all; 82% of them were working in psychiatry or pediatrics. For one half of this group, the reason for not wearing a white coat was to avoid its potential negative impact on the rapport with patients. A few senior physicians (consultants) stated that they did not wear a white coat to distinguish themselves from more junior faculty.

WHITE COAT AND INFECTION: A PARADOX?

The opinion of patients and physicians on the role of a white coat regarding transmission of infection seems to be different. In a study on 276 patients and 86 physi-

cians, 154 patients (56%) thought doctors should wear a white coat.[5] When asked for the reason, 18 of these patients cited prevention of infection, whereas 70% of physicians who thought white coats should not be worn believed that white coats transmitted hospital-acquired infection. Does a white coat indeed prevent or spread the infection? In another study at the East Birmingham Hospital, *Staphylococcus aureus* was isolated from up to 25% of white coats,[10] implying the possibility of transmitting the infection. Although studies have documented microbial contamination of physicians' white coats, suggesting a potential risk,[11,12] it is not clear whether they actually increase the risk of hospital-acquired infection. Research shows a plateau effect: A steady state of maximal biologic contamination was reached within the first week of use and did not change significantly thereafter.[10] In addition, microbial colonization of white coats or other clothing items, such as ties, is not necessarily synonymous to an ability to spread the infection. The absence of a well-matched control population (ie, physicians not wearing white coats, with their stethoscopes often hanging around their necks, while examining a similar patient population) makes it difficult to make a conclusion on the potential role of white coats in increasing the risk of infection.

In addition to white coats, neckties have also been implicated in the spread of nosocomial infections.[13] Ties can be colonized with potentially dangerous germs, including methicillin-resistant *S. aureus,* with the theoretic possibility of cross-infection.[14] It is noteworthy that, unlike other items of clothing, physicians rarely wash their ties,[15] which might be one of the main reasons why many health care providers in the field of infectious diseases support the idea of not wearing a necktie during a care activity that involves direct contact with patients.[16] It has also been suggested that the tie be firmly clipped to the shirt to prevent it from contact with patients, thus decreasing the risk of contamination. One could expect that wearing bow ties instead of traditional ties would be associated with lower rate of infection. However, a multicenter randomized controlled trial failed to show any sustained difference between necktie and bow tie contamination rates.[17]

THE WHITE COAT'S WEIGHT

One of the reasons cited by physicians for wearing a white coat is to carry essential items.[9] As training and practice progress, the information included in the pocket reference books is gradually transferred to memory. To transform this phenomenon into a quantifiable measure, the weight of the white coat (which obviously includes whatever is in the pockets) can be taken as a surrogate marker for needing the handy information and quick references. It is expected then, with progress in seniority and knowledge, that the physician's white coat would decrease in weight.

A random measurement was taken of the weight of white coats of 49 physicians working in a teaching hospital in Edinburgh.[18] This group of physicians included various ranks: junior house officer, senior house officer, registrar, senior registrar, and consultant. The control (empty) white coat weighed 0.6 kg, whereas the average weight of the white coats in this study was 1.39 kg for male physicians and 1.69 kg for female physicians. In multiple regression analysis, there was a significant association between increasing seniority and reduction in coat weight ($P = .0002$). Indeed, it is conceivable that with increasing seniority, knowledge, and self-confidence, the need for carrying educational tools would decrease. However, whether this difference among senior and junior medical staff can be explained only by items such as pocket reference books cannot be addressed by the above-mentioned study.

THE WHITE COAT'S CONTENT

Traditionally, white coats have big pockets that allow physicians to easily carry their necessary items. Junior medical staff members carry relatively heavy coats that "lighten" over time. It would be interesting now to see what items are so necessary among these young physicians that they are considered worth carrying all day. In a study at a university hospital in Philadelphia, 70 students, interns, residents, fellows, and faculty members were asked to empty their pockets and list the contents.[19] As expected, the most common items were medical equipment (eg, stethoscope) carried by 97% of the study population, followed by pocket manuals and work notes ("to do" lists). Surprisingly, 92% of the fellows and faculty members carried pocket manuals in their pockets, a number similar to interns and residents (90% and 93%, respectively). One potential reason for this unexpected result is the small number of subgroups in this study (13 students and 13 fellows and faculty members), which may have adversely affected the results.

THE INTERFACE OF ADMINISTRATIVE AUTHORITIES AND MEDICAL PROFESSIONALS

Many physicians, especially those in training, remember receiving an orientation package at the beginning of their employment that included a detailed institutional "dress code" preceded commonly by a semi-generic statement, such as: "The purpose of this dress code is not to inhibit personal freedom, but to acknowledge the unique role that physicians play in patient care." These dress codes, mostly generated by administrative authorities, commonly emphasize the importance of wearing a white coat for physicians at all times when interacting with patients. These cases often "pick up" the results of some of the aforementioned studies in a selective manner to back up their own standpoints and rules. How-

ever, most of the studies in this field are epidemiologic and observational in nature and are simply not designed to answer practical questions. Therefore, setting rules and dress codes solely on a "presumed" cause-and-effect phenomenon does not seem to be justified. For the same reason, "informed common sense" remains the level of evidence for the majority of these guidelines (ie, just a bit above the guesswork). It will not be unexpected then to find contradiction among the rules and guidelines set by different authorities.

In September of 2007, the UK Health Secretary outlined new measures to prevent nosocomial infections. Surprising to many physicians who have always been taught that white coats are the essential elements for direct patient care, the measures include a "bare below the elbows" dress code for the clinical staff in hospitals.[20] The traditional long-sleeved white coats are banned, as are ties and wrist watches. As expected, the new rules have created a diverse reaction among medical professionals in the United Kingdom.[16,21]

It seems clear that the basis for different dress codes for physicians (regardless of their institutional or national level) should be considered cautiously, but it raises a more fundamental question of whether there is any need or room at all for rules regarding the use of white coats (or ties, wrist watches, and so forth) by physicians or, pending solid and striking evidence, they should be left optional.

CONCLUSIONS

It seems that there has been a decline in the popularity of the white coat among physicians. Nevertheless, appearance is still important for others; many patients and peers still prefer a conservative and less casual appearance for physicians. It is not surprising that this preference is age related for both patients and physicians, with older individuals demanding less casual attire. Many physicians cite the risk of infection as the reason for not wearing a white coat. Indeed, it is not clear whether the white coat helps prevent the spread of infection or actually increases the risk. However, the alternative (no white coat, with the stethoscope often hanging around the neck) might not necessarily be a better solution. In addition, big pockets allow physicians to easily carry their commonly used equipments and resources while potentially providing a secure space for papers with patients' clinical information. Overall, in the absence of strong uniform evidence, a more open approach regarding wearing or not wearing a white coat would be preferable. Current data indicate that white coats can only be considered a personal decision, and the preference of the medical professionals (eg, medical students) should be respected accordingly. What has been shown in a number of studies is the greater acceptance rate for a semiformal or formal appearance compared with casual attire or the use of nontraditional items (eg, piercings). Dress codes, if at all needed, should be limited to this aspect of a physician's appearance.

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