

BMJ Open First year medical students' perceptions of the impact of wearing scrubs on professional identity: a narrative analysis in the United Arab Emirates

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ABSTRACT

Objectives Medical school serves as a critical developmental period for future physicians, during which students begin to form a professional identity. Just as personal appearance, particularly clothing, is an important external expression of one's personal identity, 'uniforms' in healthcare, including white coats and scrubs, symbolise status and a group identity. There are, however, limited studies on the impact of physician attire on medical students' formation of professional identity. Accordingly, through qualitative analysis of written narratives, we sought to analyse medical students' experiences of wearing professional physician attire, namely scrubs, and how the uniform impacted their confidence level, performance and behaviours, as well as their identity as future physicians.

Design Qualitative analysis of medical student's written narratives.

Setting Khalifa University College of Medicine and Health Sciences (KU CMHS) is a new medical school in the United Arab Emirates, with an inaugural class of 30 students admitted in August 2019. It is the only medical school in the city of Abu Dhabi, and the only school in the country that follows a postgraduate medical curriculum.

Participants All first year medical students at KU CMHS were purposively sampled.

Methods Students completed a voluntary online anonymous questionnaire. We employed a social identity approach to data analysis. Thematic content analysis was conducted on their narratives to identify themes.

Results We identified three major themes, namely (1) emotions, (2) logistics and (3) interpersonal relationships.

Conclusions Medical students form early perceptions regarding physician attire and its impact on their professional identity. Engaging in conversations regarding professional attire with educators or mentors could provide an important opportunity for students to discuss and explore professional identity early in training.

INTRODUCTION

Medical school serves as a critical developmental period for future physicians. Each student enters with a personal identity that has been shaped through a lifetime of relationships, events and cultural influences. Through a complex interplay of experiences

Strengths and limitations of this study

- This is the first study (to the authors' knowledge) to explore the impact of professional attire (scrubs) on medical student professional identity formation.
- Participants were questioned during first year of medical school, to capture their early experiences as they happened.
- Small sample size from single institution limits generalisability.
- The majority of respondents were woman.
- Responses were written in English, a second language for the majority of students.

and interactions during undergraduate training, students begin to internalise the norms and values of the medical community and begin to develop a professional identity.¹⁻³ The concept of professional identity formation (PIF) is complex and involves individual development as well as socialisation into the medical community.² Personal appearance, particularly clothing, are an external expression of one's personal identity. Similarly, 'uniforms' in healthcare, including white coats and scrubs, symbolise status and a group identity.⁴

There is a large body of nursing literature that highlights the importance of healthcare uniforms to nurses' professional identity and practice. In one study, nurses on a hospital ward did not wear their uniforms for a 2-month time period. The participants reported significant discontent and a strong emotional attachment to their uniforms.⁵ The respondents felt that their uniforms reflected status and occupational boundaries, distinguishing nurses from other healthcare staff. Other studies have also shown that wearing a uniform fostered a strong self-image and professional identity as a nurse, which instilled self-confidence and led to improved performance.^{4 6} Similar findings have been

reported for occupational and physical therapists.⁷ There are, however, limited studies on the impact of physician attire on medical students' formation of professional identity.

Khalifa University College of Medicine and Health Sciences (KU CMHS) is a new medical school in the United Arab Emirates (UAE), with an inaugural class of 30 students admitted in August 2019. It is the only medical school in the city of Abu Dhabi, and the only school in the country that follows a postgraduate medical curriculum, whereby the students have at minimum obtained a Bachelor's degree prior to starting medical training. Recognising that the students lacked peers in years above and had limited opportunities to interact with the wider medical community, educational leaders explicitly created opportunities for socialisation with other healthcare practitioners and experiences to promote PIF, including a white coat ceremony, facilitating formal and informal interactions with practicing community physicians and early integration into hospital teaching teams. Given the importance of clothing to personal identity, particularly in a country, such as the UAE, which has a traditional national dress, consisting of a white robe (kandora) for men and a black robe (abaya) for women, we hypothesised that clothing would also play a significant role in student formation of professional identity. As such, the students were fitted for and received scrubs early in their education and were encouraged to wear the scrubs during hospital rotations and clinical examinations. As educators, we observed a change in the students' demeanour and behaviour while dressed in scrubs. We noted that the group, as a whole, immediately became more serious and focused on their tasks. Individual conversations and interruptions were minimal, as the students appeared to be trying to behave more like physicians. As this was a general observation, we wanted to further understand the potential importance of physician uniforms on the students' professional identity. Through the lens of the social identity approach,⁸ by analysing student narratives, we sought to explore the potential impact of wearing clothing representative of the profession of medicine on their interactions with patients, their self-categorisation as a member of the medical community, as well as on their individual identities as physicians. This approach allowed us to consider student responses from both the individual and the group perspective.⁸

METHODS

A short survey was developed with open-ended questions designed to promote reflective analysis of students' experiences wearing scrubs and how the attire impacted their confidence level, performance and behaviours, as well as their identity as future physicians (online supplemental appendix 1). All 30 students at KU CMHS were purposively selected to participate in the study. An introductory email with a link to a survey monkey questionnaire was sent in March 2020, with a reminder email sent 1 week

later. Each survey question was followed by an open text box with unlimited characters available. Narrative writing was used as a means to encourage introspection and self-reflection. In addition, narrative reflections can also serve as a learning tool to support students as they develop their professional identities.⁹ The questionnaire was anonymous and did not include any identifying information, other than gender (man or woman). All students provided written consent to participate in the study and for their responses to be quoted. Participation was voluntary and we did not offer any incentives.

All data analysis was conducted manually by both investigators (SS, HI). We performed a qualitative analysis using a thematic content approach.¹⁰ Through an initial process of familiarisation, we read all the deidentified narratives to gain an overall view of the depth and breadth of the responses. We then independently performed a manual line-by-line open coding on the narratives and initial codes were generated. Thematic analysis was then conducted, where recurring concepts and patterns were identified in the coded data. These patterns were categorised through constant comparison, into themes.¹¹ Discrepancies were resolved through in-depth conversations. Through consensus, the coding scheme was established and then applied to all transcripts. We achieved saturation for thematic content after reviewing twelve narratives, but we analysed and reported the data from all responses. We used the Standards for Reporting Qualitative Research checklist when writing our report.¹²

Team reflexivity

The team members had diverse academic backgrounds and research experience (one MD, PhD with clinical research experience, one MD, MEHP with formal training in medical education and qualitative research) and both had experience in undergraduate and postgraduate medical education in the USA and internationally. We were mindful of how our academic experiences and expertise in healthcare education influenced our analysis of the data.

Patient and public involvement

There was neither patient nor public involvement in this study.

RESULTS

Twenty-one of the 30 eligible students completed the questionnaire (70% response rate), with 6 man and 15 woman respondents. While the vast majority of responses were longer, detailed reflections, some students provided brief, isolated comments. Three main themes and associated subthemes were identified: (1) emotions (2) logistics and (3) interpersonal relationships. Each theme is discussed below and summarised in [table 1](#), with excerpts from the student narratives to evidence our findings.

Theme 1: Emotions

The vast majority of students reported that wearing scrubs elicited positive emotions of increasing their confidence

Table 1 Themes and subthemes derived from student narratives (N=21)

Themes	Subthemes	Illustrative quotes
Emotions	Confidence	'Since it [scrubs] affects how others look at me as well. For instance, my family and my teachers always comment on how professional I look with the scrubs. And I always hear these comments like 'Oh, look at our doctor today' or 'wow, looking like a real doctor today,' so that definitely boosts my confidence in a way'.
	Motivation	'When I first got into med school, I just didn't feel like a medical student or 'future doctor'. It took me some time to believe that. Now, every time I wear scrubs, I become more motivated to do my best and confident in the possibility that yes, I will become a doctor'.
	Responsibility	'The scrubs are a reminder that I'm in a field that requires huge responsibility and professionalism'.
Logistics	Comfort	'It's definitely comfortable walking around wearing my scrubs and working in the clinic while wearing them'.
	Preferred alternative to national attire	'It is easier to move around and perform procedures in scrubs. With the cultural clothing (abaya and Kandora), its' a bit tricky as the sleeves are loose'.
Interpersonal relationships	Doctor-patient interaction	'When we're wearing scrubs, the patients treat us with respect and this helps us to communicate and take a history'.
	Membership in Healthcare Community	'Wearing scrubs makes me feel closer to what I'm planning to become, and it gives me a good sense of belonging to medical health providers'.

and motivation. One student commented 'Whenever I wear scrubs, I feel enthusiastic and motivated to be the physician that I dream to be'. Another stated 'It does instill a level of confidence- that I look like a physician. So I start to feel more like a physician'. A few students noted the increased responsibility that they felt towards their patients when they wore professional attire. One student admitted 'It allows me to embrace the profession in a way that is visible and, by effect, does affect patient interaction. I feel a greater sense of patient responsibility'.

Theme 2: Logistics

The students often indicated practical reasons for wanting to wear scrubs, including comfort, ease of movement and to facilitate identification. One student commented 'They make it easier to wash hands and move about. They also have many pockets to store equipment.' Another stated:

It's definitely comfortable walking around wearing it and working in the clinic with it. So I am not sure whether it directly impacted my clinical performance, but I am sure it did contribute positively to it since the physical tasks were easier such as, for instance, practicing extension, flexion of the knee and hip, wearing the comfy pants.

In regards to identification, one student commented 'With no scrubs, the patient can't tell if I am a healthcare worker/student'.

Many students also highlighted the practicality of wearing scrubs, as opposed to their traditional dress. One student summed it up with 'Before wearing scrubs, I would wear a loose abaya (with loose sleeves), which is distracting during training, but with scrubs, I am more focused on the application'.

Theme 3: External relationships

The students recognised that the doctor's attire is an important part of the first impression that patients and others will develop of the doctor. One student described:

Wearing the white coat and scrubs...does contribute to a positive patient interaction in the sense where the patient is more comfortable and feels that you are more trustworthy, and therefore in the history taking, they are able to open up more and tell you more regarding their disease/symptoms/personal life/etc. without worrying.

Understanding that professional clothing is an influential component of nonverbal communication, one student remarked 'It establishes patient-doctor relationship without even saying a single word'.

A small number of students thought beyond the doctor-patient interaction and discussed how they felt wearing professional attire influenced their relationship with the larger community. For example, one student remarked 'It made me feel different, to a point that I can see myself contributing and impacting on society one day'. Another stated 'It makes me look more toward the future. It makes me feel good about being a doctor, being able to add to the community and help others'.

Though most responses were positive, a few students expressed some apprehension about wearing professional attire, with one student remarking 'I feel that if anything, by wearing it [scrubs], I'd be adding expectations and anxiety to my patients'. Another commented: 'Wearing scrubs makes me seem like a physician and would be treated by patients as a physician more than a medical student. So that would increase the expectations of the patients from me'.

DISCUSSION

In recent years, educational scholars have recommended that PIF become an explicit goal of medical training and that educational strategies should be developed to support this goal.^{3,13} Within this growing body of literature on the development of physician identity, there are a limited number of studies on the potential impact of professional attire. Our study adds to this literature by describing strong emotions that first year medical students ascribe to wearing traditional physician attire and the importance of this attire on their identity as future physicians. Professional identity is formed through a combination of self-perception and perception by others.¹⁴ Through their narratives, our students emphasised both: wearing scrubs enabled them to feel like members of the physician community, thus impacting how others perceived them. This became an iterative process. As the students felt and acted like physicians, they were recognised as and treated like physicians by peers and patients, which further reinforced their development of the professional physician identity.² Previous studies have shown that first year medical students identify more as doctors than they do as students.¹⁵ As highlighted by the social identity approach, closely tied into their identity development was the concept of self-stereotyping, which refers to individuals' perceptions of possessing attributes of a group to which they identify.¹⁵ With the simple act of donning scrubs, our students immediately became quieter and more focused on their assignments, visibly ready for the serious work of being a physician.

To date, most of the published studies on physician dress explore patient perceptions of what doctors should wear, with the majority concluding that patients prefer physicians in professional attire, including white lab coats or scrubs.^{16–18} For example, in a study of families of patients in the intensive care unit setting, physicians wearing white coats or scrubs were considered to be more knowledgeable, honest, caring and competent.¹⁷ This association transcended countries and cultures. In a study in South Korea, Chung *et al*¹⁹ noted that patient perceptions of empathy were also affected by physician attire. Further, in a study conducted in primary healthcare clinics in Saudi Arabia, Al Amry *et al*²⁰ found that the vast majority of patients preferred their doctors to wear white coats, as compared with fewer than half of the patients who approved of their physicians wearing traditional Saudi dress. Al Amry also noted that the patients surveyed associated physician attire with competence and professionalism. Similarly, our medical students felt that wearing scrubs made them more confident and contributed positively to the patient–doctor relationship. Specifically, our medical students felt that wearing scrubs was a form of nonverbal communication that immediately established patient trust and confidence in them, regardless of their medical knowledge or clinical skills. It is interesting that a minority of students expressed negative reactions about wearing scrubs, recognising that not all patients prefer professional physician attire. Indeed, the literature has

highlighted these concerns, with some studies concluding that professional attire can be intimidating or frightening to some patients and even form a nonverbal barrier to communication, by representing a clear hierarchy in the doctor–patient relationship.²¹ For the individual, wearing professional attire carries expectations of the role and conveys a message about personal responsibilities.⁴ It is not surprising that a few of our students expressed hesitation about these expectations, given their limited medical knowledge and clinical exposure. Also, as the processes of socialisation and PIF differ from person to person, it is expected that some students would express different responses to wearing scrubs.^{2,14} Continued clinical exposure and ongoing experiential learning will contribute to their professional identity development.²²

Other studies have explored physicians' personal opinions about their colleagues' professional appearance.²³ Overall, doctors favoured professional attire, and sometimes expressed more conservative choices than patients. Our students also felt that wearing scrubs was preferred to wearing traditional national dress, though they mostly cited comfort and practicality as the reasons. Just as professional attire yields certain behaviours, the traditional national dress also comes with a set of behaviours and expectations. Though their early perceptions indicated a clear preference for scrubs in the clinical setting, primarily citing issues of comfort and freedom of movement, it is unclear if physician attire is more meaningful for students who routinely wear standardised traditional clothing. This remains an area for future research.

Cruess *et al*²² have recommended that Miller's pyramid should be amended to include PIF at the top. As learner professionalism and professional behaviour progresses from 'knowing' to 'doing', there is a space open for 'being'. However, what does it mean to 'be' a physician with the ill-defined expectations and associated code of professional behaviour? Through ongoing self-categorisation, which has been shown to start early in medical education, a student develops a professional identity.¹⁵ A recent study investigated the connection between autonomy and professional identity formation.²⁴ While it is known that PIF is crucial to the development of learners becoming physicians, it is still unclear what the impact of this formation is throughout their transition from medical student to trainee to practicing physician. Does accepting and understanding the professional role of a doctor earlier in the learning process produce better physicians with more empathy, compassion and greater confidence in making clinical decisions? Closely tied into this concept is what does it mean to *look like a physician*? In this work, we identified that the simple act of donning scrubs changed the way first year medical students feel about their budding role in the medical field and lends itself to the process of identity formation. While wearing scrubs during their initial clinical interactions, medical students experienced 'legitimate peripheral participation', an important early step in which they started to acquire the identity of the medical community.²⁵ There

are several additional findings from our study. First, as other authors have observed, seemingly simple everyday experiences can be emotion-laden and shape a student's professional development.² As such, faculty should always role model professionalism in all their interactions. Next, early clinical exposure is critical to the formation of students' professional identities. Experiential learning with clinicians and patients is critical to the process of socialisation. Further, reflective narratives provide an opportunity for students to introspect, but can also provide educators with feedback on the impact of their interventions. Future work should investigate how other characteristics of physician physical appearance impact the PIF of learners throughout the process of undergraduate and graduate medical education.

Our results should be interpreted in the context of important limitations. First, participants included a small cohort of medical students from a single institution, limiting generalisability of the results. Our respondents were also primarily women, reflecting the demographics of our medical school class. Regional studies also report a predominance of woman medical trainees.²⁶ Irrespective of the larger number of woman medical students, a higher woman response rate is not surprising, as women physicians have reported being mistaken for other members of the healthcare team, receptionists or other patients, when wearing certain attire.²¹ Other studies have also noted that patient perceptions are more influenced by clothing choices for woman physicians, when compared with their man colleagues.¹⁶ As such, women may have stronger opinions regarding clothing attire and are, thereby, more likely to participate in related research studies. The small sample size also prevented subgroup analysis by gender. Further, as only student perceptions were gauged, it is unknown whether the doctor-patient interaction was, indeed, affected. Obtaining the patient perspective of the interaction is an important area for future study. Additionally, the responses were all in English, which is not the first language for many of the students. As such, the variability noted in the range and depth of the narrative comments may be, in part, due to differences in the English writing proficiency of the students. Finally, the context must be taken into consideration. As there is a deep historical linkage to traditional attire in many Middle Eastern countries, students in our study may have stronger cultural associations with clothing. Further studies are needed to assess if medical students in non-Arab and Western countries have similar perceptions of physician attire.

CONCLUSION

Medical students form early perceptions regarding physician attire and its impact on their professional identity. Engaging in conversations regarding professional attire with educators or mentors could provide an important opportunity for students to discuss and explore professional identity early in training.

Contributors SS and HI contributed equally to this work.

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REFERENCES

- Hafferty FW. Professionalism and the socialization of medical students. In: Cruess RL, Cruess SR, Steinert Y, eds. *Teaching medical professionalism*. Cambridge, UK: Cambridge University Press, 2009: 53–73.
- Jarvis-Selinger S, Pratt DD, Regehr G. Competency is not enough: integrating identity formation into the medical education discourse. *Acad Med* 2012;87:1185–91.
- Cruess RL, Cruess SR, Boudreau JD, et al. Reframing medical education to support professional identity formation. *Acad Med* 2014;89:1446–51.
- Timmons S, East L. Uniforms, status and professional boundaries in hospital. *Sociol Health Illn* 2011;33:1035–49.
- Sparrow S. An exploration of the role of the nurses' uniform through a period of non-uniform wear on an acute medical ward. *J Adv Nurs* 1991;16:116–22.
- Shaw K, Timmons S. Exploring how nursing uniforms influence self image and professional identity. *Nurs Times* 2010;106:21–3.
- Smith S, Roberts P. An investigation of occupational therapy and physiotherapy roles in a community setting. *Int J Ther Rehabil* 2005;12:21–9.
- Burford B. Group processes in medical education: learning from social identity theory. *Med Educ* 2012;46:143–52.
- Ng SL, Kinsella EA, Friesen F, et al. Reclaiming a theoretical orientation to reflection in medical education research: a critical narrative review. *Med Educ* 2015;49:461–75.
- Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006;3:77–101.
- Bradley EH, Curry LA, Devers KJ. Qualitative data analysis for health services research: developing taxonomy, themes, and theory. *Health Serv Res* 2007;42:1758–72.
- O'Brien BC, Harris IB, Beckman TJ, et al. Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med* 2014;89:1245–51.
- Cooke M, Irby DM, O'Brien C. *Educating physicians: a call for reform of medical school and residency*. San Francisco, Calif: Jossey-Bass, 2010.
- Monrouxe LV, Identity MLV. Identity, identification and medical education: why should we care? *Med Educ* 2010;44:40–9.
- Burford B, Rosenthal-Stott HES. First and second year medical students identify and self-stereotype more as doctors than as students: a questionnaire study. *BMC Med Educ* 2017;17:209.
- Rehman SU, Nietert PJ, Cope DW, et al. What to wear today? Effect of doctor's attire on the trust and confidence of patients. *Am J Med* 2005;118:1279–86.



- 17 Au S, Khandwala F, Stelfox HT. Physician attire in the intensive care unit and patient family perceptions of physician professional characteristics. *JAMA Intern Med* 2013;173:465–7.
- 18 Petrilli CM, Mack M, Petrilli JJ, *et al*. Understanding the role of physician attire on patient perceptions: a systematic review of the literature--targeting attire to improve likelihood of rapport (TAILOR) investigators. *BMJ Open* 2015;5:e006578.
- 19 Chung H, Lee H, Chang D-S, *et al*. Doctor's attire influences perceived empathy in the patient-doctor relationship. *Patient Educ Couns* 2012;89:387–91.
- 20 Al Amry KM, Al Farrah M, Ur Rahman S, *et al*. Patient perceptions and preferences of physicians' attire in Saudi primary healthcare setting. *J Community Hosp Intern Med Perspect* 2018;8:326–30.
- 21 Varnado-Sullivan P, Larzelere M, Solek K, *et al*. The impact of physician demographic characteristics on perceptions of their attire. *Fam Med* 2019;51:737–41.
- 22 Cruess RL, Cruess SR, Steinert Y. Amending Miller's pyramid to include professional identity formation. *Acad Med* 2016;91:180–5.
- 23 Gjerdingen DK, Simpson DE. Physicians' attitudes about their professional appearance. *Fam Pract Res J* 1989;9:57–64.
- 24 Sawatsky AP, Santivasi WL, Nordhues HC, *et al*. Autonomy and professional identity formation in residency training: a qualitative study. *Med Educ* 2020;54:616–27.
- 25 Cruess RL, Cruess SR, Steinert Y. Medicine as a community of practice: implications for medical education. *Acad Med* 2018;93:185–91.
- 26 Mohamed NA, Abdulhadi NN, Al-Maniri AA, *et al*. The trend of feminization of doctors' workforce in Oman: is it a phenomenon that could rouse the health system? *Hum Resour Health* 2018;16:19.