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COVID Faces: Unmasking the Emotional Impact of the Pandemic in a Cohort of Fourth-Year Medical Students

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Abstract

Background: In April 2020, most undergraduate medical education programs across the country ceased in-person activities. In the months that followed, the return to clinical care for graduating students in the Class of 2021 was challenging. As the pandemic wore on, the impact of COVID-19 on professional identity formation in medical students was an area ripe for investigation. This small cohort study reveals student perceptions of the impact of COVID-19 on their developing sense of professional identity.

Methods: Students in the Class of 2021 at the Pennsylvania State University College of Medicine (main campus in Hershey, PA, as well as the Regional Campus in University Park, PA) were invited to participate. After approval from the Institutional Review Board, participating students submitted a reflective narrative describing the impact of the pandemic on their educational experience. In addition, students submitted words to describe their sense of projected (external) on the outside of a templated surgical mask and words to describe their sense of true (internal) on the inside of the mask.

Results: Common narrative themes that emerged included doubt, anxiety, fear, disconnection, loss of control, guilt, sacrifice, resilience, and survival. Analysis of descriptors of internal and external aspects of the templated surgical masks revealed common themes of anxiety, fear, confusion, and hope.

Conclusions: This study provides a glimpse into the student experience of COVID-19 through several lenses. From the narrative perspective, students expressed elements of disconnection and doubt as well as resilience and grit. From the visual perspective, similar themes emerged from the mask descriptors. Overall, COVID-19 significantly impacted the emotional experiences of this cohort of fourth-year medical students, particularly in the context of sustained uncertainty and feelings of anxiety.

Introduction:

*"The virus has taken away our stage, our work and our identity"**

Identity is a complex and multifaceted process whereby an individual forms an enduring sense of self that helps to distinguish them from others.¹ Identity is dynamic and comprised of multiple primary (e.g. race, gender) and secondary (e.g. physician, nurse, student) components that are in a constant state of flux across time and contexts.² Identity formation is an ongoing process that organizes experiences and relationships into a 'meaningful

whole'³ that incorporates personal, private, public, and professional selves.⁴

In the context of medical education, professional identity is also created (and re-created) through discourse⁵ and interactions with others.⁶ Who we are, who we might become, and who we are seen to be are central aspects of our identity.⁷ Language, experience, tradition, and ceremony contribute to dynamically incorporate multiple sub-identities into an overall sense of self.⁸ A large component of identity is represented by the extent to which an individual feels like a true member of their team or

* <https://www.forbes.com/sites/masonsands/2020/04/12/comedians-in-quarantine/#1a4518f5512a>

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workplace.⁹ Personal and professional growth continuously evolves through relationships, reflections, and experiences within the contexts, traditions, and ethical foundations of any given community.¹⁰ Individuals move from having a foundational body of knowledge, to knowing how to perform a skill (competence), to showing how to execute the skill (performance), to demonstrating sustained excellence in the performance of that skill (action). While COVID-19 unquestionably presented multiple physical and mental health challenges to medical students,¹¹ the impact of the pandemic on their developing sense of professional identity is not known.

Methods:

This study used a phenomenological approach to examine the impact of COVID-19 on the sense of professional identity formation in a cohort of fourth year medical students. Following Institutional Review Board approval, 150 Penn State College of Medicine medical students in the class of 2021 received an invitation to participate in the study. Potential participants were provided with a hyperlink directing them to a secure server (REDCap™) for study information and consent. Following consent, students were asked to decorate a templated surgical mask with ten words to describe how they were displaying their emotions to the world (projected self—outside of the mask) and ten words to describe how they were actually feeling during the pandemic (true self—inside of the mask). They also created a reflective narrative to describe their overall experience as a medical student during the pandemic. The authors (MS; CK; LE) independently analyzed each mask and narrative constant comparative method,¹² whereby raw data were sorted and organized according to attributes in order to form general themes. The authors met to confirm and discuss the emergent themes. Axial coding was then used to further examine the participant 'voice' to elucidate elements within each theme. Illustrative aspects of each element were then identified by iterative consensus.

Results:

Across both campuses, 15 students chose to participate for a 10% total response rate. Overall, five students (three from the main campus at Hershey,

PA, and two from the University Park Regional Campus) submitted all of the requested elements. These five submissions are the focus of the final analysis. Five primary themes emerged from the narratives—behavioral, physical, emotional, cognitive, and social. Within each of the main themes, specific elements were identified as well. These themes and elements are consistent with previously identified reactions to stressful or traumatic events¹³ (Table 1). Themes also emerged from the internal and external aspects of the templated masks (Figure 1). Common descriptors from the mask interior (true self) included fear, guilt, confusion, and anxiety. In contrast, the mask exterior (projected self), more commonly included descriptors portraying confidence, calm, hope, and fearlessness. This dichotomy suggests a difference between what students were feeling as their perceived experiences within the context of the pandemic and what they actually were projecting to others.

Discussion:

During periods of stability, personal identities are generally well-established.^{13,14} Periods of transition and uncertainty, like the COVID-19 pandemic, however, contribute to feelings of identity dissonance.^{15,16} The present study suggests that for this small cohort of learners, there was a dissonance between what emotions they were experiencing as part of the pandemic and the feelings that they were trying to project outwardly to others. COVID-19 significantly impacted the traditional roles and responsibilities of medical students, particularly those engaged in clinical activities. For this cohort of fourth-year students at our institution, away or 'audition' rotations were canceled, and in-person activities significantly curtailed. With alterations in the ability to participate in normal workplace endeavors brought on by isolation measures enacted during the pandemic, transitions in roles threatened (or led to changes in) identity. Building on our prior experience with mask making,^{17,18,19} this study provides several insights into medical students' sense of identity during the early phases of the COVID-19 pandemic. This small cohort of students revealed elements of uncertainty and fear, while also expressing significant resilience and adaptability. They indicated feelings of despair and loss, while simultaneously expressing hope and

gratitude. Students exhibited self-care, growth, and perspective formation. They also commented on the impact of isolation, anxiety, and disconnection on their developing identity. Several participants writing about their lived pandemic experiences self-disclosed that the pandemic was particularly challenging for under-represented and minority communities in the context of identity and professional development. Key limitations of this study include a poor response rate and the fact that this is a single institution study. While these factors may limit generalizability, when taken in the context of the phenomenological study design, our findings still likely represent what many medical students across the country were feeling during the pandemic, particularly in terms of impact on their developing sense of professional identity. As the pandemic eventually draws to a close, lessons learned from this study could help to inform how students respond to other crises in the particular context of identity formation. Major life events (such as the COVID-19 pandemic) may have a predictable impact on student identity. Knowing how students are responding, both internally and externally, in times of crisis provides a framework to guide emotional and academic support.

Figure 1: Mask Descriptors



Mask Interior



Mask Exterior

Table 1

Students described these thematic responses to the pandemic	With these specific elements	In these words
Behavioral	Adaptability	"Since the year began, I've been in constant survivor mode. I had a steep learning curve on how to be adaptable and make important decisions"
	Resilience	"The pandemic has afforded me an opportunity to exercise my resiliency and grit" "Instead of being defeated by endless roadblocks, I had to let go of control in order to embrace detours toward my desired goal"
Emotional	Fear/Panic	"Have I already been exposed? .. I had an ominous feeling" "I was scared of what was going to happen to the world and how it would affect those I care about" "Panic ensued with my classmates, is this really happening?"
	Doubt/Uncertainty	"...being away from the wards for so long, ... allowed some of the unknowns associated with the pandemic to really flourish" "I felt trapped, stuck, and wondered multiple times if this pandemic was a sign that I should reconsider the path I was heading on, career-wise" "Not being allowed into the hospital made me question if I would be able to remember my skills/things I have already learned"
	Helplessness	"During the pandemic, there have been many moments where I not only felt helpless but had neither the control over the timing nor fruition of the plans I previously made" "I don't think I loathed being a medical student more than the spring of 2020" "This year has been the most difficult one yet"
	Anxiety	"My step 1 was scheduled, ...everything rides on that, I couldn't afford to feel more anxious" "My anxiety couldn't handle flying during a pandemic, but I was so restless from studying" "The anxiety escalated, ... this threat was real" "Anxiety is a sickness of my mind; I didn't realize how sick I was before I went home"
	Loss/Denial	"There was a certain level of educational momentum that ceased by being away from the wards for so long" "Block it out, pretend it's not real"
	Guilt	"I felt guilty being a medical student. My family has always sacrificed for me to advance and succeed in life"

	Optimism/Hope	<p>"I began to make a conscious effort of taking my 'bad days' as 'character building days'"</p> <p>"While there were many moments of uncertainty and doubt, I never doubted my excitement and vigor with which I wanted to treat and care for patients"</p> <p>"I took this opportunity to exercise my ability to be malleable and relentlessly optimistic"</p> <p>"For the first time in a long time, I was filled with hope and reminded of the parts of me that make me human"</p>
	Gratitude	"I am grateful for the hardships, because they qualify me to effectively care for and support others during theirs"

Physical	Self Care	<p>"I got back in touch with who I am and what I love"</p> <p>"I learned a lot of good skills during this time and had fun finding hobbies"</p> <p>"I learned to love myself again"</p>
Cognitive	Rationalization	"Limit the amount of time I read about the virus each day. Intellectualize and plot the data"
	Growth	<p>"For the many things that the pandemic took from me, it has brought me endless opportunities for growth"</p> <p>"Amidst the chaos of a pandemic, I became an individual; mentally, spiritually and physically"</p> <p>"I don't want to go back to the sad, stressed, self-doubting, anxiety-provoking life"</p>
	Perspective	<p>"I learned that everything that seems to be a burden isn't so"</p> <p>"The pandemic taught me to slow down and reconsider my trajectory long enough to see a bigger picture"</p>
	Focus	"I keep my head down. I stay focused. I forget about enjoying life because my one goal is to get this right and move on"
Social	Isolation	<p>"Over the course of 3 months of isolation, ... it was nearly unbearable to be a medical student from an under-represented area in medicine; a minority"</p> <p>"I started to feel disconnected from not just the world but from the professional identity I had just started to feel really excited about"</p> <p>"Since the year began, I've been in constant survivor mode"</p> <p>"I had no idea how much I needed my sister before"</p>
	Disparity	<p>"I was often the only student of color in my group. Many colleagues and faculty looked towards me for answers or insights to the concern at hand"</p> <p>"I was being informed to educate others at the expense of my vulnerability during a time when peace was becoming more fragile under the weight of evolving uncertainty"</p>
	Sacrifice	"I felt the weight of this sacrifice more. I had to deny my family in order to pursue my education"

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