



Medical Students' Efforts to Integrate and/or Reclaim Authentic Identity: Insights from a Mask-Making Exercise

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Abstract

Medical students' mask-making can provide valuable insights into personal and professional identity formation and wellness. A subset of first- and second-year medical students attending a medical school wellness retreat participated in a mask-making workshop. Faculty-student teams examined student masks and explanatory narratives using visual and textual analysis techniques. A quantitative survey assessed student perceptions of the experience. We identified an overarching theme: "Reconciliation/reclamation of authentic identity." The combination of nonverbal mask-making and narrative offers rich insights into medical students' experience and thinking. This activity promoted reflection and self-care, while providing insight regarding personal and professional development.

Keywords Arts and medicine · Arts and health · Medical education · Medical/health humanities

Introduction

Medical educators and scholars have examined medical students' creative work to gain insight into the socialization process of becoming a physician. This work is usually analyzed thematically to reveal student concerns, priorities, and perspectives. Haidet et al. present a useful framework summarizing learning outcomes associated with art engagement (2016). Most frequently studied has been students' creative and reflective writing, which has yielded important information about their views of relationships with patients, balancing school and personal life, and medical professionalism (Wald et al. 2015; Charon, Hermann, and Devlin 2016; Shapiro, Rakhra, and Wong 2016b).

Creating art has also been viewed as a way for students to process and make sense of their experience, including exploring personal and professional identities (Shapiro et al. 2009; Thompson et al. 2010; Kumagai 2012; Potash et al. 2014; Shapiro et al., 2016). Art-making can provide both an emotional outlet and creative release (Cox, Brett-MacLean, and Courneya 2016). Student participation in hospital arts projects has been encouraged to promote humanism, communication, and teamwork (Fondevilla and Iwata 2016). Further, art practices can examine liminality and rites of passage (Raw et al. 2012), issues especially salient for medical students (Jones, Cohn, and Shapiro 2012).

According to some scholars, arts-informed approaches activate imaginative engagement and inspire transformative understandings as well as stimulating reflection and increased self-awareness (Kinsella and Bidinosti 2016). Others have argued that making art involves putting things together in new ways and coming up with new ideas (Green et al. 2016), as well as becoming more comfortable with uncertainty and not-knowing (Baruch 2017). Arts practices can also critique the culture of medicine by raising uncomfortable questions about dominant assumptions of the healthcare system (Broderick 2011).

In this study, we were interested in developing a deeper understanding of medical students' professional identity formation (PIF) as it intersects with personal identity and wellbeing. Professional identity formation has been defined as a continuous transformative process by which the knowledge, skills, attitudes, values and behaviors of a competent, humanistic physician are integrated with personal values and life experiences (Holden et al. 2015). The requirements of professional identity can be perceived as in harmony with or in opposition to personal values and lifestyle. Other researchers have asserted that researching PIF calls for expanded methods of inquiry (Green 2015). We wondered whether an exercise in medical student mask-making might further illuminate the PIF experience.

Masks have been used in art therapy to resolve emotional conflicts and enhance self-awareness (Trepal-Wollenzier and Wester 2002; Malchiodi 2010). Masking-making has also been utilized with uniformed services patients with post-traumatic stress disorder to explore various representations of self (Walker et al. 2017) and with medical students to better understand their views of personal and professional identities (Joseph et al. 2017).

Because a mask displays a recognizably human face while simultaneously leaving blank all personal specifics and emotional expression, we felt that it was a stimulus likely to trigger thoughtful reflection on identity as well as provide a bridge to the unconscious (Shannon 2013). Art in general is regarded as a projection technique for feelings that cannot otherwise be expressed (Fraser and al Sayah 2011). Arts-informed studies allow for the probing of metaphorical meanings and the connection of ideas in new ways, bringing such insights into consciousness (Kinsella and Bidinosti 2016) and as such may supplement other forms of analytical information (Lafrenière et al. 2012). As a non-linguistic form of expression, mask-making might be able to surface unconscious conflicts and struggles. As Kumagai points out (2012), art often reveals more than the artist intends. Joining artistic with verbal expression has been reported to stimulate deep student reflection on thoughts and feelings (Karkabi and Cohen Castel 2011).

Setting and methods

This study was approved as exempt research by the university institutional review board (HS#2014-1195). Students were considered to have provided informed consent by reading and reviewing the Study Information Sheet, having the opportunity to ask for additional information from the study PI, choosing to participate in the workshop, and finally, submitting their masks and narratives for research purposes.

Setting This research was conducted at an annual Medical Student Retreat held at a university retreat center. The theme of the retreat was student wellness. Approximately two hundred medical students participated, primarily first and second years. Students could choose one of

four workshops: mask-making, research, technology in medicine, and careers in medicine. Twenty-three students chose the mask-making option.

Methods We discovered only one study investigating the use of mask-making with medical students (Joseph et al. 2017). To build on this work, we followed its methodology as closely as possible and consulted extensively with the researchers who conducted this investigation. We began with a data collection process without fixed hypotheses that came to focus on questions of identity and self-care. Like the earlier study, we used an exploratory multiple-case study design. We also included a rating questionnaire to provide insight into students' experience of mask-making.

The mask-making workshop was described to students as follows:

“The wellness workshop will focus on doing a meditative art project that revolves around mask making. Medical school is a time of professional and personal development and the goal of this workshop is to explore these themes.”

The mask-making activity was facilitated under the auspices of the retreat physician organizer and was directly guided by a community family physician with extensive background using arts/crafts, poetry, and movement as wellness strategies for physicians and medical students.

Students were invited to submit their masks and narratives for research purposes. They were assured that the masks would be treated confidentially and anonymously. Students could decide whether they wanted their mask/narrative to be used as research data *after* its completion to ensure their comfort with the level of personal disclosure represented. In making use of student creations for research purposes, we paid attention to the ethical issues regarding the emotional impact of such projects (Boydell et al. 2012; Parsons and Boydell 2012).

During the mask-making session, the facilitator provided a brief introduction to the history and uses of mask-making. She then presented acrylic paints and other materials (glitter, sea glass, bark, feathers, yarn, coffee beans – Fig. 1) that students could apply to pre-formed papier-mâché masks. During the ninety-minute mask-making exercise, both organizer and facilitator remained present to answer questions and assist students. Students then spent fifteen minutes writing narrative responses to a series of brief questions (Table 1).

The last thirty minutes were devoted to large group discussion from which the organizer and facilitator recorded summary impressions. Students also completed an eight-item survey using a Likert scale to determine the effectiveness of the activity for increasing personal and professional insight, enhancing relaxation, and decreasing stress. Of the twenty-three students participating in the mask-making activity, fifteen gave consent to use their masks and narratives for research. The research team identified twelve usable masks (Fig. 2), fourteen narratives (Appendix), and fourteen session evaluations. Three of the narratives had no masks; and one mask had no narrative.

Data analysis We applied the concept of visual rhetoric to mask analysis (Kress and van Leeuwen 2000). This method is designed to stimulate thinking about the specific messages conveyed through a piece of art. It includes detailed description of the artwork and examines dimensions of reality versus aspiration; saliency (attention directed to noteworthy or significant aspects of the art such as “striking” materials or dramatic color contrasts); sectionality (how the surface of the mask is used); communication loci (eyes, mouth, ears); and emotions conveyed.



Fig. 1 Materials used in mask-making workshop

We used a modification of the Listening Guide to analyze student narratives (Gilligan et al. 2013). This included listening for the story, consideration of multiple voices and perspectives, and focusing on I-language to highlight identity issues. We also coded narratives for themes, tone, connection, emotions, and needs using grounded theory inductive analysis (Corbin and Strauss 2008).

We utilized three research teams, each assigned five masks/narratives. This approach allowed for multiple independent interpretations. Teams consisted of one medical student and one faculty, including a psychiatrist, a family physician, and an educational specialist. Students were all MS4s planning careers in psychiatry. (Students were not selected on the basis of specialty choice, but the nature of the project might have attracted students with this orientation). None of the faculty or students attended the retreat. To provide continuity, the study principle investigator (PI), a psychologist with background in health humanities, also analyzed all masks and narratives. The two individuals who led the mask-making session provided their own analysis and summary of the experience; but did not analyze individual masks or narratives to preserve student anonymity. Their summary was not shared with the other teams until *after* they had independently completed their own analyses.

Table 1 Post mask-making narrative questions

Questions

1. Describe your mask
 - a. What would you like to say about your project?
 - b. Who is the intended audience?
 - c. What does it depict?
 - d. What are its specific components?
 - e. What do its components/characters signify?
2. What meaning, if any did you hope the project would convey?
3. What did you learn, if anything, from completing the project?
4. How did you feel while you were completing the project?



Fig. 2 Masks used in data analysis

Teams met for a two-hour training session to become familiar with the analytic methodology. To create a consistent approach across teams, the PI constructed an analytic model for masks and narratives, incorporating dimensions of the Listening Guide and visual rhetoric analysis. Individual researchers first reviewed and analyzed assigned masks, then read accompanying narratives, and revised their analyses in light of student-subjects' own comments. When all analyses were completed, the PI met with each team to facilitate a discussion of

findings and reach consensual interpretations when possible. An inductive approach was used in which teams first identified individual topics and concerns, then “worked up” to identify a unifying broad theme that encompassed these smaller pieces of our findings.

A compilation of each team’s work was distributed to the entire group, which then met for an additional 1.5 hour session to finalize conclusions. It is important to note that in both the formative individual and small group analyses and the summative group analysis, *each mask and matching narrative was ultimately considered as a single whole*. Thus, although in the preliminary individual analyses we initially considered masks and narratives separately (Tables 2 and 3) so as not to allow one modality to dominate over the other, both our final individual conclusions and our small and large group consensus were based on consideration of the amalgam of mask and narrative.

We created an audit trail to enable confirmability: 1) Each team member kept personal notes about the masks/narratives he or she analyzed. 2) Each team conference produced a set of notes. 3) A summary of themes and observations from all teams was prepared after each team meeting. 4) A final summary was prepared after all teams met and discussed the conclusions reached. All team members had an opportunity to review and comment on these notes.

The quantitative assessment of the workshop was calculated using StatPlus.

Results/discussion

Our analysis of individual masks and narratives revealed many dimensions such as topics and concerns, sectionality, salience, tone, emotions, self, needs, wellness (see Tables 2 and 3 for a complete list of dimensions). Through discussion, teams and ultimately the research group as a whole wove these into an overarching theme that contained two sub-themes (Fig. 3).

Overarching theme: authentic identity Our analysis concluded that these various dimensions could be unified into a single predominant theme: Reintegration and/or Reclamation of Authentic Identity. Students’ masks/narratives demonstrated a preoccupation with a form of identity that we termed “authentic” in the sense that students seemed to feel this represented “who they really were” (Guignon 2004) as opposed to the presentational self or how people attempt to present themselves to control or shape how others see them (Goffman 1959). This grand theme acknowledged that, in students’ views, identity does not consist of just one element but rather reflects many different aspects of self. Masks/narratives seemed concerned both with reintegrating these various dimensions and/or with reclaiming important personal dimensions that they worried were in danger of being lost. While some projects emphasized reintegration of existing aspects of self and others emphasized reclamation of lost or threatened aspects of self, all recognized the multifaceted nature of “authentic identity,” and many combined a desire for reintegration with a concern for reclamation.

Examples of reintegration and reclamation To better understand this main theme, it might be helpful to consider two masks and their accompanying narratives. Mask/narrative 6 emphasizes reintegration. The mask depicts and the narrative confirms a deep “split” in various aspects of the student’s identity. Yet despite the use of words such as “shattered” and “weight of the world,” the conclusion the student reaches is that both “sides” of the mask have contributed to the student’s personal identity and will continue to do so in the professional sphere. The student concludes, “It’s okay” to have both aspects present. Mask/narrative 20 is an example of a reclamation-themed project. It is the only mask that overtly defines the mask as “she” rather than “I,” making clear that “she is how I hope to be.” It is also in the minority of essays in that it directly alludes to the stressful,

Table 2 Individual masks visual analysis

Mask	Sectionality	Salience	Communicative Loci	Topics/Concerns	Emotions	Authentic/ Presentational Self
2	Mask treated as whole	Coffee beans	Eyes and lips highlighted	Appreciate complexity of identity; control; subtle asymmetry	Guarded; self-absorption; yearning	Both
3	Three horizontal sections	Tears	Eyes soft/tender Mouth sealed	Sad, sealed life; something dark hidden	Sadness, despair; things not what they seem	Authentic
4	Mask treated as whole	Orange blot	Mouth highlighted; no attention to eyes	Put on happy face; express self	Passion; forced happiness	Both
5	Mask treated as whole	Compass directions; jagged glass	Eyes in glitter	Knowing direction; confidence in brokenness	Self-confidence; Inner angst; inner strength	Both
6	Two halves	Large jagged glass; color contrasts	Eyes highlighted, but differently	Gaiety vs. heaviness; sharpness, bright vs. darkness; creativity vs. logic; intertwining sides	Struggle to reconcile different sides of self; pride, self-confidence; excitement	Both
7	Two sided; diagonal	Glitter swirls; bright colors; gradient of color	Eyes highlighted differently; mouth blended; forehead emphasized	Finding balance; opposing forces; reconcile status quo vs. creativity, passion	Seriousness, joy; stillness, peace, ease; struggle, imbalance; confusion, uncertainty, calm, passion	Authentic
8	Two-thirds top; one-third bottom	N/A beach scene	Eyes hidden	Balance, harmony, relaxation, peace; live life freely; can achieve goals	Harmony; relaxed, happy, curious; optimism, hope	Both (Authentic - aspirational)
12	Mask treated as whole	Star; ribbons; patches; contrasting colors	Tear beneath eye; mouth not highlighted	Tranquility; joy in natural world; pride in self despite flaws; many parts of self	Peace, sadness (hidden); pride, optimism, overcoming pain	Presentational
13	No narrative	Yarn; contrasting colors; patches	Glitter on one eye; mouth covered by three different colors	Many components to self; exploration of self	Appreciation of self's complexity; urgency, energy	Both
15	Three horizontal sections	Concrete objects; tear	Mouth outlined in red; yellow nose	We are sum of our experiences; I am more than meets the eye	Guarded; Absence of emotion	Both
17	One-quarter; three quarters	Whole note; blending	Lips undefined; eyes prominent	Light penetrates dark; simplicity; stability; connection even in darkness	Calm, serene; frustration w/social expectations; hope; gravity, seriousness; sadness	Authentic - (aspirational)
20	Mask treated as whole	Natural element; crown	Mouth is smiling, highlighted; eyes highlighted differently	Beauty, nature, tranquility	Happiness, peace; wants to stand out	Both

Based on notes/comments of evaluation teams

Table 3 Individual masks narrative analyses

Narrative	Topics/Concerns	Tone	Connection	Emotion	Needs	Wellness
1 No mask	Recognizing/owning different parts of self	Struggling	Nature, community, hobbies	Anger, sadness; pride, love	To be whole; to be more spontaneous	Fear too revealing; relish creativity
2	Symmetry/irregularity I am more than meets the eye	Glib; light-hearted	Coffee; others who want to “be awake”	Guarded	To not be vulnerable; relaxation	Fun, like being a kid
3	Presentation of self in med school; failure	Sad, vulnerable	Other medical students and parents	Sad, isolated Disappointed Repressed emotion	To be accepted for who is; need to express voice	N/A
4	Overwhelm vs. simplicity; chaos vs. order; I am more than black and white; sadness/struggle	Reflective	No	Confusion Yearning	Simplicity; Need to express self spontaneously	N/A
5	Dreaming vs. planning; importance of having direction; simplicity	Confusion uncertainty	Family, wider world	Confusion, joie de vivre, passion	Desire for direction; desire to pursue everything	N/A
6	Parts of self in conflict and in concert; accepting different sides of self a success; passion, ambition, love, happiness vs. weight of world, treading water; pride in adaptability	Reflective; self-affirming, confident, struggling, acceptance	Peers, others going through same struggle	Self-pride, self-delight; loneliness, sadness; drowning, acceptance	Explore self; survival, peace with self, happiness	Enjoyed letting mind wander, be creative
7	Finding balance; struggle between type A/relaxed well side; not losing self; dark and light	Anxious; struggling, conflicted; reflective; troubled	N/A, but connection to other MSs implied	Anxious, relaxed; still, peaceful; hopeful; distressed, worried, optimistic	Need to find balance; need for a break	Both relaxing and stressful
8	Expressing self is therapeutic; peacefulness of nature; personal fulfillment, freedom, happiness	Superficial nostalgic; proud; happy, reflective; at peace	Nature	Relaxed, having fun, happy, calm	Be creative more often; yearning to achieve tranquility, relaxation	Creativity is enjoyable, relaxation is important
12	Expressing love, receiving love; valuing beauty; people are complex; self is sum of experiences, memories	Appreciative; reflective, calm, happy	Family, others	Gratitude; loving, calm, nostalgic	To express and receive love; to appreciate	N/A
15	See how past has shaped you; reflect on who you want to be/can achieve balance	Reflective; poignant; positive, hopeful	Family, others, things; sense of belonging	Gratitude, curiosity	Activity, continued development; balance	N/A
16 No mask	Happiness not from material things, but intangibles; appreciate life	Reflective; grateful	People, nature	Thankful feeling blessed; serene; self-critical	Pursue intangibles	We make our own stress; eliminate stress through focus on values

Table 3 (continued)

Narrative	Topics/Concerns	Tone	Connection	Emotion	Needs	Wellness
17	Importance of simplicity, meaning, connection w/others; peace, wholeness, contentment; solace in nature	Pensive, thoughtful; earnest, seeking, hopeful	Others; nature	Anxious, overwhelmed; seeking, hopeful	Need for meaning, connection with others; stability; calmness; wellness, balance	Relaxing, but also stressful b/c could make mistake; felt calmed; know what's needed for wellness but many external barriers
20	Value of nature, peace, happiness, simplicity; minimalism is beautiful	Reflective, vulnerable; hopeful; self-assured	Nature, art	Happy; stress; appreciation	Need for calm, peace, to be as beautiful and natural as mask	Relaxing and stressful b/c "not confident artist"; strong value on wellness
26	No mask Disconnect between how students wants to connect w/others and inability to do so	Reflective, sad; disconnected	Family, peers, patients (aspirational)	Sad, frustrated	Integrate two sides; longing to communicate, connect with others	Calm; relief from stress

Based on notes/discussion of analysis teams

overwhelming, and chaotic nature of medical school. Despite its aspirational nature, the narrative is full of satisfaction and pride in accomplishment. This suggests that the student feels confident that she can fulfill the hopes expressed in the project.

Aspirational vs. actual In general, we interpreted masks/narratives to be more aspirational (cf. Masks/Narratives 5, 6, 7, 8, 17, 20) than actual (cf. Masks/Narratives 12, 15), although this varied from mask to mask. Overall, masks/narratives appeared to represent a kind of journey toward authenticity and self-acceptance at different stages of actualization with some masks expressing more integration and others expressing less. We noted a continuum in terms of students who were struggling to reintegrate, reclaim, or hold onto their personal identities in the face of medical school (cf. Mask 17/Narratives 1, 26) and students who felt hopeful and confident that such reconciliation and balance was possible and indeed had already been achieved at least in part (cf. Masks/Narratives 12,15). This was conveyed through the masks themselves in that some (less resolved) showed a sharp contrast between sections, whereas others blended the different dimensions and sides in a seamless flow. Overall, with few exceptions (cf. Mask 3, 4), students did not appear to feel discouraged or desperate regarding the task of creating balanced, authentic selves; rather they seemed hopeful and somewhat confident that they possessed the skills to succeed in this endeavor (cf. Masks/Narratives 6,15,17; Narrative 16).

Subthemes: self-awareness and practices The theme of reintegration and/or reclamation contained two important sub-themes: 1) *Self-Awareness* of different aspects of self, including presentational vs. authentic selves; structured vs. spontaneous selves; and positive and negative emotional selves; 2) *Practices* for reintegrating, rebalancing, or reclaiming these various components of self, further divided into a) *Affirmation of Personal Values* (simplicity,

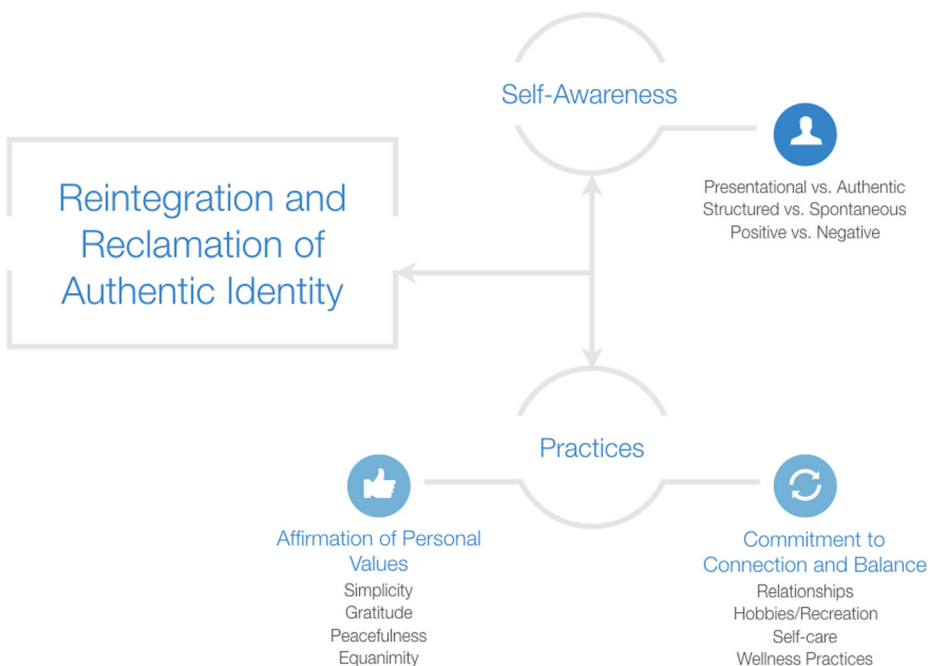


Fig. 3 Conceptual model of emergent themes from medical students' masks

gratitude, peacefulness, equanimity) and b) *Commitment to Connection and Balance*, through relationships and self-care/wellness practices (Fig. 3).

Self-awareness The reflection involved in these projects identified different and contrasting aspects of self. We observed a range in the masks/narratives from open and self-disclosing (cf. Mask 17) to superficial and guarded (cf. Mask/Narratives 2, 8, 15). Yet almost all masks/narratives with only a few exceptions recognized different sides of self, sometimes literally expressed by a divided mask (cf. Masks/Narratives 6, 7) or less frequently, authentic and presentational selves (Masks/Narratives 3, 4). These different components of self were also manifest in contrasts between structure, order, control, focus, direction, planning, logic, seriousness, future orientation, and conformity; spontaneity, whimsicality, fun, passion, creativity, freedom, and living in the moment. As well, students' masks/ narratives revealed emotions ranging from anger, sadness, anxiety (distress, worry), fear, confusion, isolation, emptiness (cf. Masks 3, 4, 17/Narratives 3, 4, 26) to self-satisfaction, self-confidence, pride, happiness/joy, optimism, joie-de-vivre, hope, strength, appreciation, gratitude, contentment (cf. Masks/Narratives 6, 8, 12, 20).

Practices for reintegrating/reclaiming aspects of self The masks/narratives also held implications for how students believed such identity reclamation and reintegration could occur, specifically through Balance and Connection. Balance could be achieved through a) loyalty to personal values of simplicity, peace, tranquility, equanimity, wholeness, and personal fulfillment and b) wellness practices such as centering and taking time for self. Ensuring personal integration could also occur through connection with nature (cf. Mask 8), family (cf. Masks 12, 15), friends, and community (cf. Narrative 1). Importantly, connection with self through reflection was essential to ensuring identity integration.

Mask-making as a self-care experience In addition to valuing wellness practices as essential to promoting the goal of balance and ultimately as contributing to reintegration and reclamation of different parts of the self, the making of the masks itself was seen as an example of self-care. The quantitative assessment of the mask-making activity showed that students found mask-making to be enjoyable, relaxing and stress-reducing although some students noted that they experienced some performance-related anxiety in trying to create an artistic product. Students judged the activity as facilitating reflection and the development of new insights although these insights were more likely to be personal rather than professional (Table 4). In addition, many of the student narratives noted that the activity was a form of self-care by creating calm, relaxed feelings although several mentioned it was also stressful because they did not trust their artistic skills.

Table 4 Medical student evaluation of masking-making workshop

Item	Mean	SD	N
Mask-making was enjoyable	5.00	0.00	14
Mask-making gave me new insights about myself as a (future) doctor	3.77	0.83	13
Mask-making gave me new insights about myself as a person	4.54	0.78	13
Mask-making was relaxing and stress reducing	4.85	0.38	13
I felt more centered at the conclusion of the mask-making exercise	4.43	0.76	14
Mask-making had stressful aspects	2.00	1.22	13
Mask-making is a way of promoting wellness and self-care	4.64	0.50	14
I would participate in similar activities in the future	4.86	0.36	14

Analysis of mask construction In analyzing how students constructed their masks, several aspects were striking. First we noted that “communicative features,” such as eyes and mouths, were sometimes emphasized and sometimes ignored (cf. Mask 7). Eyes were sometimes outlined or covered (cf. Mask 3), while mouths were sometimes painted with a bold red or bright pink color (Masks 4, 20). In one case, the mouth was stitched shut (Mask 3). More commonly, masks painted over these features without acknowledging their communicative significance.

Sectionality, or how the structure of the mask was used, also showed different approaches. The majority of students took advantage of the fact that the mask represented a face and proceeded accordingly (cf. Mask 5). However, some students used the mask simply as a canvas and painted over it without reference to facial features (cf. Mask 8). Divisions of the masks also appeared (cf. Mask 7, 3). No students utilized the inside of the mask although this might have been a way to convey a presentational vs. an authentic self.

Other dimensions noted in mask construction included symmetry vs. asymmetry (cf. Mask 2); busyness (cf. Mask 13) vs. simplicity (cf. Mask 17); sloppiness (cf. Mask 4) vs. meticulousness (cf. Mask 6); and literality/concreteness (cf. Masks 8, 15) vs. symbolism (cf. Masks 2, 17).

Conclusions

This study raised important questions about the nature of medical student identity formation on both personal and professional dimensions. Identity and self are extremely complex and controversial constructs that philosophers, literary scholars, and political thinkers have grappled with for centuries (Harter 2015). Here we can only acknowledge that, perhaps in contrast to post-modern views of self, students seemed to feel that they had an “authentic” self. Many of them, either implicitly or explicitly, made a distinction between appearance and being (Arendt 1981), what we referred to as the presentational vs. the authentic self. Like the philosopher Alessandro Ferrera (1998), students also seemed to link reintegration/reclamation of authentic self with personal well-being.

Our thematic analysis concluded that the students in our study used the mask-making exercise to actively explore issues of identity, similar to what occurred in the USU study (Joseph et al. 2017). However, in contrast to that investigation, which primarily identified negative dissonance in the conflict between previously established personal identity and medical student identity (Costello 2005), our findings (with a few exceptions) emphasized students’ more hopeful commitment to reintegrate and/or reclaim all significant aspects of self. In addition, our students focused primarily on personal, rather than professional, identity issues, albeit within the context of becoming medical students. These differences may have been attributable to the difference in level of training (i.e., preclinical students in our study vs. clinical USU students). Further, perhaps because we employed a larger sample in analysis, the breadth of topics and concerns that emerged was greater.

Also of importance was our interpretation that students wanted to embrace their complexity and multidimensionality, a theme that was not evident in the USU study, but that is suggestive of the theory of intersectionality. Since intersectionality traditionally is used to refer to social categories of race, class, and gender (Crenshaw 2008), it is somewhat problematic to apply it to privileged medical students, a population that does not immediately spring to mind when considering issues of discrimination and disadvantage. Nevertheless, in the broadest sense of the term, the inherent diminution of seeing people, especially categories of people, as one-dimensional appeared to be very much on the minds of these students, and they pushed back strongly against it.

To quote another scholar, our students seemed to engage with mask-making to “retain personhood while figuring out how to be a doctor” (Cox, Brett-MacLean, and Courneya 2016). Work with

patients has found that art-making offers the possibility of identity reconstruction (Daykin, McClean, and Bunt 2007; Reynolds and Vivat 2010) and can be used to develop new views of self as a healthier person even in difficult circumstances (Li 2012). This finding suggests that many of our students may have used the act of mask-making to actively build integrated, healthier identities (Baruch 2017); and indeed, Kinsella and Bidinosti reported art-informed curricula as a way of helping students integrate their “personal” and “professional” selves (2016).

Students in this study reported that mask-making provided new insights and personal and professional growth, a finding reflected in other studies (Kinsella and Bidinosti 2016; Jones, Kittendorf, and Kumagai 2017). However, as noted, our study illuminated the importance of students’ *personal* lives as they proceed through the rigors of medical school. In light of growing concerns about medical student well-being (Gaw 2017) and suicidality (Rose 2018), in-depth attention to the quality of medical student personal experience and struggles seems especially relevant. While these masks/narratives presented a heterogeneous mixture of hopes and fears and could not be characterized in a uniform way, the comments and interpretations of sadness, anxiety, and distress present in them is confirmation of the many difficulties students encounter as part of the medical education process.

In contrast to other evidence of identity dissonance in medical student art (Shapiro et al. 2016; Joseph et al. 2017), our findings suggested an emphasis on acceptance of the complexities of self and an optimism that integration of various aspects of self and achieving whole person authenticity was possible. It has been suggested that creativity fosters a nonjudgmental space (Green et al. 2016) in which practitioners can become comfortable with stories that do not make total sense, including their own. This may help explain why students in our study were able to take a non-judgmental position with regard to different sides of themselves.

As well, we noted the complex yet accepting portrayal of emotions in masks/narratives. We interpreted some of the masks as primarily sad or primarily happy, but often a mask/narrative contained both negative and positive emotions. We interpreted this emotional range as evidence of both deep reflection and a willingness to accept and attempt to integrate all types of emotions into the self. Other research has noted that the arts allow for expression of emotions that cannot be conveyed in other ways (Jones, Kittendorf, and Dumagai 2017). Our findings generally did not reveal students who were unrelievedly despondent and desparate. On the whole, on the basis of the data available, in our view these students were more optimistic and hopeful about their futures than despairing. This might be because they were preclinical students and had not yet experienced the full force of medical education stressors or because they were a self-selected population already focused on wellness and self-care.

Students’ artistic products also suggested specific methods for achieving and sustaining balance in their lives, including endorsing personal values of simplicity and tranquility, making use of wellness practices such as centering, and maintaining important connections with family, friends, community, and nature. This may indicate that students overall did not feel helpless in face of the difficult balance challenges confronting them but had an understanding of steps they might take to counteract these forces and a sense of being embedded in supportive networks. Many students identified mask-making itself as a form of self-care, and other studies concur that creating art can be relaxing, refreshing, and stress-reducing (Cox, Brett-MacLean, and Coumeya 2016).

We learned a great deal from the process of mask-making as well. Specifically, communicative features were either treated with special salience or ignored, suggesting a degree of high affect around how we connect with others – or not. Sectionality was also intentional, and we felt that clear divisions of the mask expressed less integration than those whose different sections flowed into each other, while the failure to utilize the interior of the mask perhaps indicated a reluctance to delve too deeply into personal psyches. We interpreted the subtle asymmetries observed in some masks as an effort to show the complexities of identity. Busyness vs. simplicity seemed to reference the

hyperactivity of students' school lives and a yearning for a more uncomplicated existence. The sloppiness of some projects we saw as an expression of freedom, "coloring outside the lines," and not being constrained by the rules of medicine that require accuracy and precision (Liou et al. 2016).

Limitations Participating students were a sample of convenience. While encouraged, the retreat itself was not mandatory. Students opting to attend may have been more focused on wellness than their non-attending peers. Once there, students could choose among several workshops. Those selecting the mask-making group could have been more introspective and artistic. This self-selection could have skewed the findings. Further, the fact that these were primarily first- and second-year students meant we were not able to assess the impact of the all-important clinical years on identity.

The fact that our analysis teams consisted entirely of individuals in the medical field may have influenced our interpretations. For example, many of us felt that allusions to narrow focus, high pressure, and delayed gratification referred to the medical education environment even when this was not explicitly stated by students. This drawback was somewhat mitigated by the fact that we incorporated both student and faculty perspectives and also included two different specialties and two different disciplines. Because we utilized three different teams, as well as obtaining an interpretation of the experience from the two on-site faculty, it is noteworthy that there was a high degree of consistency in our conclusions.

The mask itself may have limited the range of student responses. Because it offered a face, it is likely that it suggested themes of identity to students although they were not required to create an "identity mask." In fact, a small number of students did not do so, treating the mask more as a blank canvas than a shape with human features. The materials provided to decorate the mask also skewed toward the "natural," and this may have influenced the interpretation that students cared a great deal about nature. Mitigating this effect was the fact that students could choose not to use these materials at all (and simply paint the mask); that some of the painting itself depicted scenes of nature; and that the narratives often referred to the importance of connection with nature.

The context in which the mask-making occurred, a retreat focused on self-care, might have influenced both students and interpretive teams as well. The title of the workshop explicitly described it as a wellness activity. The quantitative evaluation was designed to assess the extent to which the activity was perceived by students to contribute to their wellbeing. Knowing this self-care context, students and evaluators may have paid particular attention to the healing effects of this activity.

Future directions We have only scratched the surface of what we can learn from using mask-making with medical learners. Future research should involve a multi-institution approach to ensure that findings are not the product of peculiar institutional artifacts. Other questions that our study did not examine include possible differences in approaches to mask-making by male and female students; and differences by level of training (i.e., comparing MS1 and MS3 students; interns vs. graduating residents) or by specialty.

Summary Mask-making deserves further study both as a wellness activity and as a window into the ongoing identity formation of medical students. We discovered that students used mask-making to probe primarily personal identity issues that were often brought to the fore by the demands of medical education. Students explored various aspects of self as well as a range of emotions. Overall, they did not make judgments about these dimensions. Rather they saw them as contributing to their richness and complexity as authentic human beings. We interpreted the masks as a plea to acknowledge medical students as complicated people with strengths and

weaknesses. Most students were optimistic about the possibilities of reconciling and reclaiming the various sides of themselves; and to do so in a healing, centered way.

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Compliance with ethical standards

Conflict of Interests Johanna Shapiro declares that she has no conflict of interest. Julie Youm declares that she has no conflict of interest. Michelle Heare declares that she has no conflict of interest. Anju Hurria declares that she has no conflict of interest. Gabriella Miotto declares that she has no conflict of interest. Bao-Nhan Nguyen declares that he has no conflict of interest. Tan Nguyen declares that he has no conflict of interest. Kevin Simonson declares that he has no conflict of interest. Atur Turakhia declares that he has no conflict of interest.

Ethical Standards All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Appendix amask narratives

Narrative #1: My mask is a mixture of facial expressions. It depicts some anger and sadness, as well as pride and love for community and nature. The cranial region is a mixture of clouds/ocean, broken glass, and seashells. The seashells and glass pieces represent the gems and mistakes of past experience that I remember and carry with me. The eyebrows are a mixture of concern and anger recognizing problems and acting to fix them. The lips are blue, subdued colors because I like to be careful of what I say and my words are often blue/“Debbie Downer.” The cheeks are hot colors to represent the flushing of anger, joy, or self-consciousness. The glass beads are pearls of wisdom, teardrop lenses through which I look at the world. The beard is about wisdom because when I was a kid I always wanted to grow up and be a wizard. Now that I’m in medical school, I feel like I’m living that dream in a sense. The bark and leaf evoke my love of mythology and nature. The rainbow yarn is for LGBTQ pride. I learned I can express myself without being too cliché. I felt a little anxious expressing myself, but I felt I made it subtle enough to be indecipherable. It was calming to discover my creativity fill in the gaps.

Narrative #2: [This is] a work of both symmetry and irregularity. [It signifies] structure, patterns, and good aroma. [I hoped the project would convey the message...] keep your eyes open to the world around you. Making art can be fun again; reminds me of being a kid. It was a relaxing activity.

Narrative #3: My project is a reflection of how I carry myself in medical school. It depicts all the times I failed my exams. [The components of the mask are...] tears (blue glitter), sutures

(white on lips), closed eyes (feathers), coronal halo (white boundary), regal attitude (blue, yellow, purple).

Narrative #4: I get confused a lot, especially when I'm thrown into complicated scenarios. So naturally, I find simplicity, such as spontaneity (blotches of paint) and imperfections.

Narrative #5: The mask represents how I sometimes feel pulled in multiple directions – pulled by family all across the country, pulled by my love for travel, pulled to always be dreaming, always to be planning. I think that, for me, it's that there is so much that I love, and so much that I'm passionate about, that I'm not sure which direction to follow. On the other hand, having a compass is like having a map – it gives you direction.

Narrative #6: The mask depicts two parts of my mind/soul/personality that are both in conflict and in concert. On the right the mask is gold and covered in bright swirls of color and beauty, representing my passions, ambition, love, happiness and what I want to be. On the left, the mask is dark and shattered, representing my struggles with the weight of the world and dealing with feelings of loneliness and treading water. I think the project reminded me that even though I am both people it's okay. Both of them inform who I am as a person and future doctor.

Narrative #7: [The mask represents] finding balance with medical school. [It is a...] struggle between different parts of myself – one type A med student, one relaxed and well. [I'm] trying to nurture the relaxed me while still staying afloat in school. Not losing myself! Establishing priorities. [Its meaning is...] a struggle between different part of myself; the importance of balance in life and in school. I learned the importance of balance; my priority is keeping balance. [Doing the project I felt...] relaxed!

Narrative #8: My mask is a beach. At the top is a dark blue sky with stars. Under that is an ocean with a whale and a turtle made of glass; the ocean is covered in blue glitter. The bottom is a gold base for the beach with shells and gold glitter

[This project] was so fun and relaxing. I very rarely do arts and crafts but when I do I'm always amazed at how enjoyable and relaxing it is. It was a nice group activity to watch how others approached making their masks as I made my own. I learned that expressing myself creatively could be extremely therapeutic. [The mask] reminds me to refocus and relax.

Narrative #12: My personality exudes calmness but I am also a compilation of my experiences. That is why I included a collage of ocean colors and pictures from National Geographic. The ribbons on my head remind me of love. Childhood memories of bows in my hair were symbolic of my family's love and the love I wish to share with others. The crown of glass and shells reminds me to see the beauty in all, including myself.

Narrative #15: My mask was meant to signify what I view as the 3 acts of my life. The top represents my youth and upbringing. I put it on top because I believe it is key, the most important significance as far as what I think I derived my identity from. It depicts the wide variety of interests I had in my youth, most poignantly depicted by a cat, intended to represent my inherent curiosity as a child. The second stage represents my college years at XX, where I developed a sense of self-worth and strength represented by a bicep. The final stage represents what I want my future to be – a scale balancing my inherent love and fascination of fixing things (a hammer and XX) balanced with things that I love doing just for myself (a surfboard). Making this made me reflect on myself and helped me think about what made me who I am. It also helped me to think about who I want to be.

Narrative #16: The mask represents all the things that mean most to me in life. What is surprising is that the things I value most have nothing to do with the typical "success" measures. So maybe happiness comes from the less tangible things in life. Building on the

above, I learned that my life is pretty blessed, and I create my own stresses and problems. Really, there is nothing more I could want/need. [The project made me feel...] insightful and reflective.

Narrative #17: I often feel that my thoughts are so scattered that in this information age I am overloaded with information, different philosophies on how to live and how to be. On top of this there are many expectations and social constructs that I needed to explore on a core level what I needed from life: simplicity and meaning.

On the right, what outer things calm me and bring stability, represent stability and perpetuity: sun, sky, ocean, natural turbulence (wind) as opposed to psychosocial turbulence. On the left, a musical whole note. The whole note is the kind of interaction I want with people: sustained, meaningful. The lips are dark/undefined because so often words get in the way of being present with the other.

[The meaning of the mask is...] simplicity, distillation, being present, doing away with artifice and superficiality. I learned that some “mistakes” can make a thing more meaningful, drive things toward what they are meant to be, like an errant brush-stroke. [The project made me feel...] calmed.

Narrative #20: This project made me feel very calm and thoughtful. My goal was to create an art piece I would enjoy, think is beautiful, and be proud of. School can be very overwhelming and chaotic, so I took this time to find some peace and make minimalist art. This weekend I have really enjoyed being outdoors and in a new setting since I spend so much time indoors studying. This made me want to keep my mask oriented toward natural elements such as coffee beans, bark, and sea glass. I also wanted to give her a smile because the original “neutral” face of the mask looked rather “stern” to me. I feel very satisfied that this mask looks minimalist but beautiful, natural, and happy. She is how I hope to be.

Narrative #26: I tried to do my mask in two halves; one with intricate patterns and one blank half to show how sometimes there is a disconnect between what I’m thinking/feeling and what I’m actually expressing whether it be in interactions with peers, families, or patients. [During the activity...] I felt calm because I was engrossed in making the mask.

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