DIGITAL MD:

A NOVEL UNDERGRADUATE MEDICAL SCHOOL ELECTIVE

FOR SOCIAL MEDIA AND DIGITAL SCHOLARSHIP

by

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ABSTRACT

Introduction

Seventy-five percent of medical students are using social media to engage with

colleagues and patients. The current medical curriculum lacks coursework to support

student doctors in such digital scholarship and to educate them about the importance of

patient confidentiality, online professionalism, and using social media as part of their

careers. Furthermore, many medical schools implement restrictive policies without

formal mentorship or curriculum to foster professional and successful social media

engagement. This starkly contrasts the rest of the practice of medicine, which is built

upon structured mentorship and reflective practice. To that end, students at our medical

school identified a need for a structured mentorship experience that incorporates

strategies for professional social media communication and digital scholarship creation.

Methods

The Digital MD curriculum was formulated based on student survey, pre-existing

materials, and discussion with key stakeholders (physicians, campus digital media,

national social media leaders). We recruited first- and second-year medical students to

participate in a 7-week elective, during which they engaged in live didactic sessions and

small group discussions while completing a tiered series of asynchronous exercises to

gain comfort and skills in digital literacy. Students were assessed with an assessment

map and course assignments for each of the modules. Speakers included physicians

who had integrated social media into their teaching, advocacy, and public health

portfolios, as well as members of the campus social media department and faculty with social media presence. Throughout the course, students used Adobe Creative Cloud and strategies learned in class to create a digital media capstone project.

Results

Over a period of two academic years, we enrolled 9 undergraduate medical students. We evaluated students' attitudes and knowledge with a multiple choice and free text survey taken before and after the course. Following the course, 100% of respondents agreed or strongly agreed that they were able to define concepts of social media and digital scholarship, understood the role of advocacy, and found the course made them more likely to engage in social media and digital scholarship.

Conclusions

We demonstrated the feasibility of an undergraduate medical student elective on social media and digital scholarship. Through this initiative, we also addressed a curricular gap identified through needs assessment. Survey data suggests that social media is an important and increasingly critical part of communication and professionalism in the profession of medicine, and that resources in digital scholarship are available, expanding, and proven to be feasible. Overall, Digital MD brings unique value to students through the creation of capstone projects and enhanced social media engagement with real world impact.

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INTRODUCTION

Modern medical providers enjoy a wide array of online social networks and resources that are redefining modern practice. Only twenty years ago, patients and providers did not have access to blogs, Facebook, Twitter, or other social media sites where medical information could be easily shared.[1] While a large portion of medical school faculty do not have a robust online presence, 75% of today's students are already developing online profiles and brands and using social media and digital scholarship to network with colleagues and patients around the world.[2] While many institutions have policies surrounding social media use, such policies often focus on limitations and dangers;[3] in contrast, curricula that recognize the increasingly valuable role physicians on social media play in public health, medical education, and advocacy are less common. Current medical school digital scholarship courses generally give medical students an opportunity to "fix" a part of the internet (e.g., updating Wikipedia articles that contain false medical information)[4] rather than integrating this form of communication into overarching pillars of professionalism, patient communication,[5] and advocacy. With this perceived curricular gap in mind, we surveyed our institution's medical students on social media attitudes and determined that our students feel unprepared regarding professional social media use.

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[1] (Bosslet, Torke, Hickman, Terry, & Helft, 2011)
[2] (Guraya, 2016)
[3] (Crosby, 2019)
[4] (Eveleth, 2014)
[5] (Rocque & Leanza, 2015)

The Digital MD medical student curriculum uses social learning theory as its foundation. Bandura stated that behavior is learned from the environment through the process of observational learning.[6] Furthermore, it is suggested that the positive contribution of socializing among peers results in greater engagement with learning, reflection on learning methods, and application of learning to future practice.[7] While social learning theory is often implemented in clinical settings where role modeling and observation are key, we sought to include physicians acting online as role models.[8] We also aimed to guide learners through the various phases of self-regulation and control (attentional, retention, reproduction, and motivational)[9] with experiential, progressive coursework; thus, the Digital MD curriculum increases opportunities for observation through structured assignments that require students to identify online conversations that go well or violate norms (e.g. Tweets that violate HIPAA).[10] They observe these online conversations and attempt to identify the explicit rules (e.g., platform terms of service, use of hashtags to highlight themes) and implicit rules (e.g., professional tone and linking to verified references) for best practice. As the role of a physician on social media is different than the typical user of social media[11], this medical school curriculum highlights the cumulative behaviors that define such online medical professionalism.[12] Invited speakers provide additional opportunities for role modeling appropriate online

[6] (McLeod, 2016)
[7] (Todres, 2012)
[8] (Horsburgh & Ippolito, 2018)
[9] (Braungart, Bastable, Sopczyk, Gramet, & Jacobs, 2020)
[10] (Anderson, 2014)
[11] (George, 2013)
[12] (Huang-Horowitz & Freberg, 2016)

behaviors and reinforce the importance of the material as well as behaviors that contribute to success.

Students who sign up for the course self-select as having an interest and attention for the subject of professionalism and social media. Our needs assessment identified that students would like more opportunities to learn about using social media professionally[13] and creating digital learning materials. Recognizing the motivations and priorities that students have before they enroll, we allow the students to select their own topic for their capstone project. Students may be motivated to improve public knowledge about cancer screening, highlight healthcare disparities in cardiac care, or developing an online persona that will increase referrals to their private practice,[14] to name a few examples, but the possibilities are boundless. Once learners identify an issue they have particular interest in, they are encouraged to replicate the messages and behaviors they've observed in order to participate online.

Digital MD is designed to allow students to advance into progressively harder online activities—conceptually applying Vygotsky's zones of proximal development (establishing Twitter accounts, participating in online conversations, generating media)[15] and Hess's cognitive rigor matrix—in order to provide an overview to medical students of the scope of online medical education resources as well as connect new technology

[13] (Freberg, 2011)
[14] (Edminston, 2014)
[15] (Veletsianos & Kimmons, 2016)

and media to cornerstones of medical professionalism.[16] The classroom creates a

community of practice that experientially reinforces the lessons each student learns and

provides feedback about online activities.[17] The course portfolio presents students'

media creations on a platform with a larger social network, accelerating the student's

integration into an online community by increasing online engagement. By the

conclusion of the course, students should feel more comfortable transitioning into more

confident and capable online physicians with a mature social media presence.[18]

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[16] (Husain, Repanshek, & Singh, 2020)
[17] (Fraustino, Briones, & Janoske, 2015)
[18] (Kinsky, 2016)

METHODS

Needs Assessment

A needs assessment survey was sent to all students at our medical school, from which there were 131 respondents. The curriculum was developed from these responses.

Course Description

We offered a 7-week elective to first- and second-year medical students at one institution, initially in person and then online. Prerequisite knowledge was not required. The course focused on social media and digital scholarship, exploring ways that medical providers can use an online brand to advocate and educate. It was intended for medical students who were digitally immersed—but not digitally fluent—who were curious about developing an online identity. During the inaugural offering of the elective, students helped refine the goals of each session and were called upon to participate in real-time and asynchronous class discussions. Students were also expected to contribute to a capstone project of digital scholarship that was evaluated by their peers and course instructors as well as being distributed on a public class portal.

Curriculum Design

A faculty member, Matt Zuckerman, MD, and student instructor, Vincent Fu, designed the course modules. As course director, Zuckerman brings a unique background to the topic, including experience on social media, podcasting, video production, infographics, emergency medicine, medical toxicology, and an enthusiasm for new technologies. A

student-turned-educator, Fu contributes his experience in personal branding, online presence, digital media design, and social media management. Together, we emphasize the principles behind professional communication online, effective branding, and education theory as it applies to medical digital media.

Course Format

The course met approximately every week over 9 weeks. Initially, sessions were in person with a course presentation and class discussion. During the second offering, a flipped classroom model was implemented with students watching materials prior to participating in the real-time video discussion.

Modules

Each module identifies a core component of social media and digital scholarship. Before each session, students reviewed readings and videos as well as contributed to an online discussion board. Most modules also involved a didactic presentation or interactive discussion with a content area expert for 45-60 minutes.

Module 1: What is Social Media and Digital Scholarship?

Module 2: Legal and Ethical Pitfalls of Online Citizenship

Module 3: Transitioning from Lurker to Contributor/Social Media Activism

Module 4: Developing a Professional Identity/Personal Branding

Module 5: Digital Scholarship Educational Theory

Module 6: Everyone is Creative: Adobe Creative Cloud (Guided Lab)

Module 7: Capstone Presentations, Review, and Feedback

Assignments

Assignments and preparatory work were completed prior to synchronous didactics. Initial assignments involved identifying social media conversations and contributing a response (e.g., engaging in a Twitter conversation). Students then used Adobe Spark to create a digital image on a health topic of their choice. Throughout the course, they were provided subscription access to Adobe Creative Cloud to allow them to work on digital scholarship and develop creative skills in digital literacy; learners also had access to free online tutorials to supplement lab time with instructors while working on content.

Didactic Sessions

Didactic sessions were provided by the course director, student instructor, and selected guest speakers. Speakers and panelists were recruited from the campus's social media department and faculty with social media presence. Visiting speakers from the fields of medicine and digital communications provided additional insights. Students came prepared with questions and points of discussion for the speakers.

Capstone Project

Throughout the course, learners discussed how social media and digital scholarship are relevant to them and their future practice. Assignments were completed during each module to aid in this reflection. Eventually, students chose one topic that was important to them and developed a piece of digital scholarship using new skills gained in media production/design. Capstones were ultimately shared both within the cohort and on a public portfolio for dissemination and critique.

Peer Feedback

A complete social network and effective digital scholarship depend on iterative review; indeed, many effective online medical educators have benefitted by feedback from editors and peers. Accordingly, students audited each other's current online presence/brands, and furthermore, gave feedback and constructive discussion on digital scholarship created in class.

Learning Objectives

We tied learning objectives to an assessment map and course assignments for each of the sessions. These objectives are:

1. Define social media and define digital scholarship.

2. Be able to assess your online social media presence or that of a peer.

3. Know where to look for online medical digital scholarship and how to assess it for quality.

4. Understand and apply legal and ethical rules as they apply to medical providers online (HIPAA, social media policies, medical professionalism).

5. Explore the various roles of online citizens (consumer, producer, synthesizer, critic, hybrid).

6. Be able to compose effective clear social media posts for education or advocacy.

7. Explain essential aspects of personal branding.

8. Explain the aspects of professional identity, especially as they relate to your professional goals/activities/values.

9. Apply educational principles to create an online medical resource, including identifying your educational objectives, appropriate media, options for creation, and dissemination.

10. Use Adobe Creative Cloud software to create audio/video/photo items for online medical education.

11. Contribute a capstone educational project to the course portfolio website for dissemination and feedback.

Student Assessment

The single biggest contributor to course success was student preparation, participation, and discussion. Students completed a pre- and post-survey about knowledge and beliefs using 5-point Likert scales as well as free text feedback about course strengths and weaknesses. These surveys assessed students' current social media activities (e.g., Twitter, Facebook, Instagram) as well as attitudes towards digital scholarship and comfort level assessing and creating digital scholarship.

RESULTS

Needs Assessment Responses

The needs assessment respondents (n=131) were distributed as follows: first year (29%), second year (12%), third year (19%), and fourth year (40%). The responses indicated that half of respondents (50%) would like to be able to use digital literacy skills to create educational content (Figure 1), while more than half of respondents (57%) reported they don't know how to create digital content (Figure 2). Taken a step further, of those who would like to create digital content (n=65), over half of those (54%) do not know how to—illuminating the gap in our existing medical curriculum (Figure 3).

Figure 1 | *Student attitudes, desire to create digital scholarship*

CUSOM NEEDS ASSESSMENT RESULTS | STUDENT ATTITUDES

I <u>would like to</u> be able to create digital educational content such as infographics, videos, posters, and animations.

Agree 50%

Neutral 32%

18% Disagree

TOTAL SURVEYED: 131
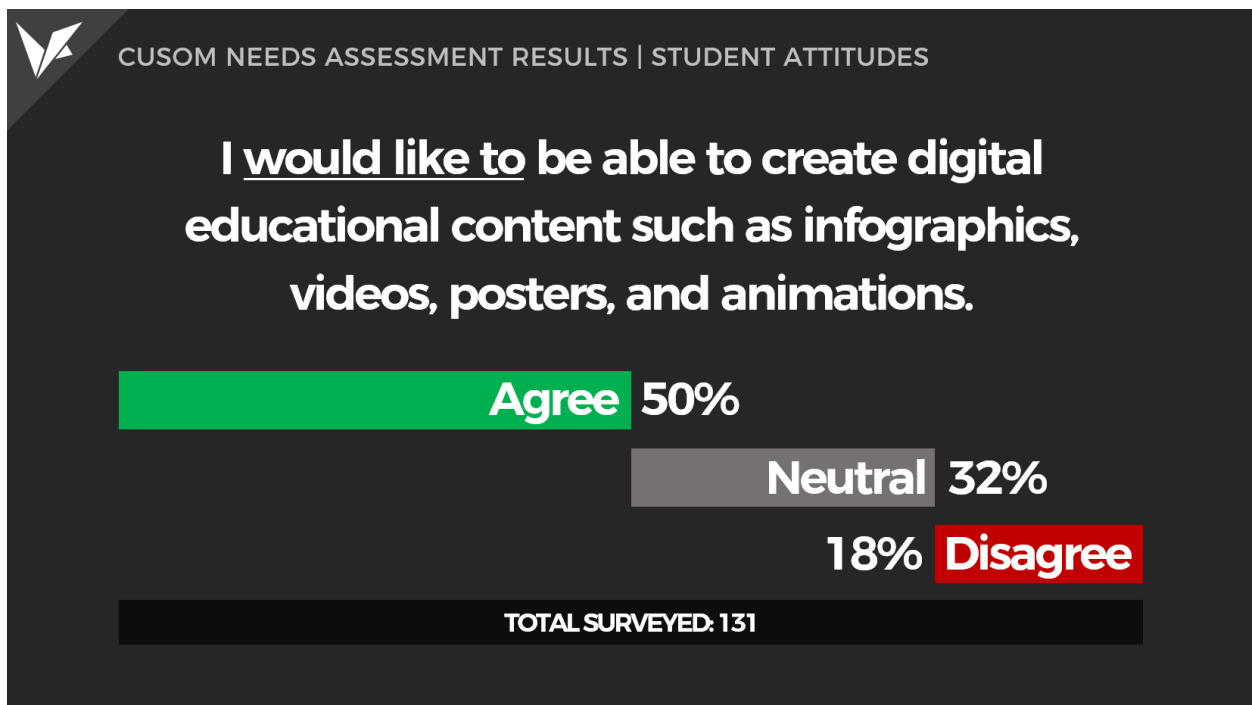
Figure 2 | *Student attitudes, capability to create digital scholarship*

CUSOM NEEDS ASSESSMENT RESULTS | STUDENT ATTITUDES

I <u>know how to</u> create digital educational content such as infographics, videos, posters, and animations.

Agree 20%

Neutral 23%

57% Disagree

TOTAL SURVEYED: 131
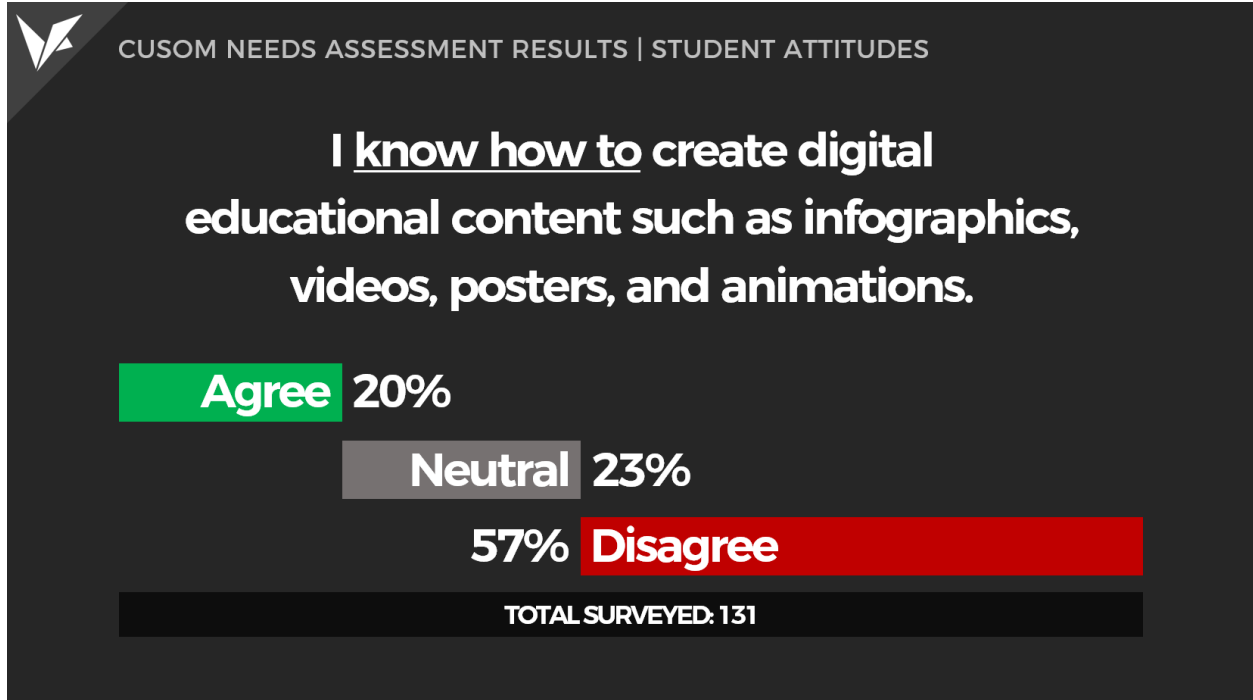
Figure 3 | *Student attitudes, capability of those who desire to create digital scholarship*

CUSOM NEEDS ASSESSMENT RESULTS | STUDENT ATTITUDES

I <u>would like to</u> create digital educational content.

Agree: 65

I <u>know how to</u> create digital educational content.

Agree 23%

Neutral 23%

54% Disagree
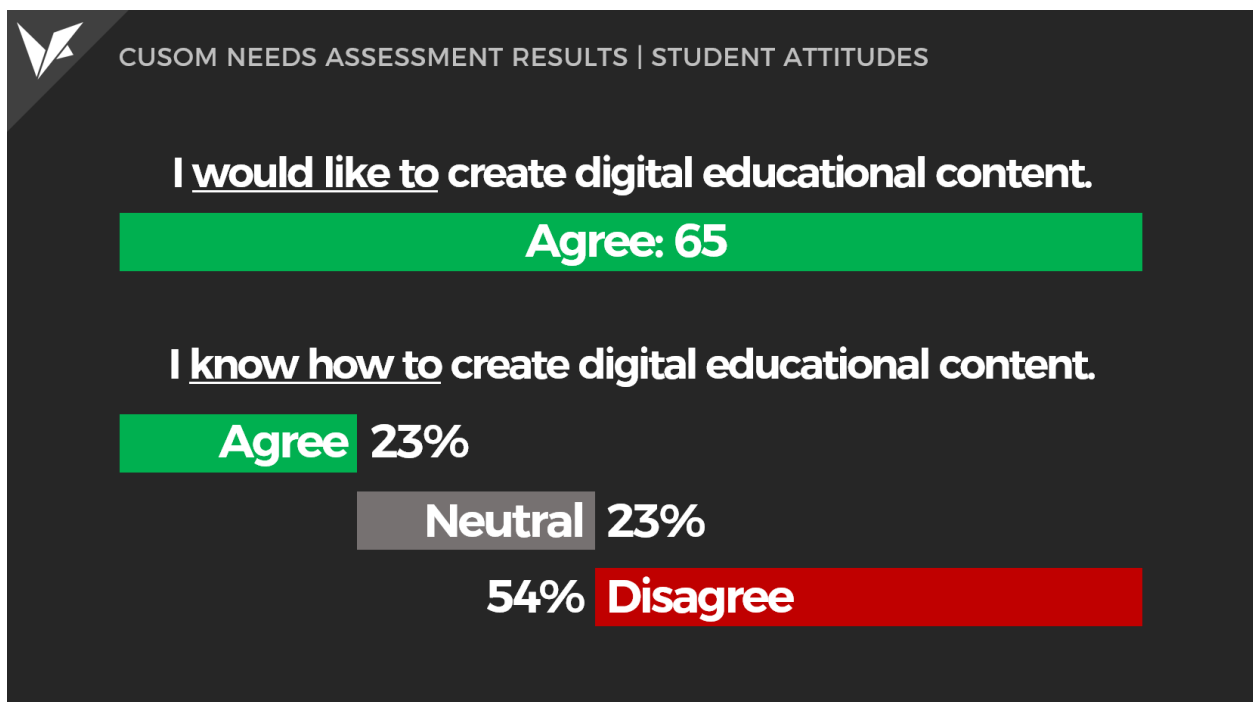
Course Outcomes

Over 3 course sessions in two academic years, we enrolled 9 undergraduate medical students. Seven participants responded to the pre-survey and 6 to the post-survey. Students' attitudes toward social media and digital scholarship in medicine, before and after completing the course, are summarized below (Table 1).

Table 1 | *Self-reported student attitudes, pre-course and post-course*

Survey Statement (% who agree)	Pre	Post
Social media is an effective resource for medical learning	57%	83%
I use social media for medical learning	29%	67%
I know how to critically evaluate medical information found on blogs, podcasts, and social media	43%	83%
I understand how HIPAA and ethics affect social media in medicine	57%	83%
I resist using social media personally or professionally due to fear of career repercussions	86%	67%
I think having a professional online brand is important in my future career	57%	67%
I am happy with my professional online brand	14%	50%
I know how to create digital educational content such as infographics, videos, posters, and animations	29%	67%
I would like to be able to create digital educational content such as infographics, videos, posters, and animations	100%	100%
Learning to use social media for positive career impact should be part of any medical school curriculum	86%	83%

Students also evaluated self-perceived knowledge and belief changes using Likert-type questions ranging from 5 (Strongly Agree) to 1 (Strongly Disagree). These results are provided below (Table 2). Given the small sample size, we summarized responses using counts, percentages, and ranges. We chose not to include confidence intervals as they imply a generalization that may not be reflected in our small sample.

Table 2 | *Self-perceived knowledge and belief changes, post-course*

Survey Statement	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
I am able to define and explain the concepts of social media and digital scholarship.	1 (25%)	3 (75%)			
I am confident in my ability to apply HIPAA principles to social media content.	1 (25%)	1 (25%)	2 (50%)		
I understand the role of social media in advocating for a cause I care about in my profession.	2 (50%)	2 (50%)			
This course helped me create a mission for my personal brand.	2 (50%)	2 (50%)			
I am capable of assessing online education tools using objective assessment tools.	1 (25%)	3 (75%)			
As a result of this course, I am more likely to use social media and digital scholarship professionally.	2 (50%)	2 (50%)			
The course increased my ability to use multimedia tools (including Adobe Creative Suite) to create digital media.	1 (25%)	3 (75%)			

Following the course, 100% of respondents agreed or strongly agreed that they were able to define concepts of social media and digital scholarship, understood the role of advocacy, and felt the course made them more likely to use social media and digital scholarship. Measures of social media use and comfort using social media increased from pre- to post-survey. Resistance to using social media decreased from 86% to 67%. After the course, two-thirds of respondents reported that they know how to create digital educational content.

Capstone Projects

Each Digital MD student completed a capstone project in the form of an infographic[19], video, or audio contribution to ongoing and current topics in medicine. They were then encouraged to share their piece on social media, engaging with other online citizens in discussions. In March 2020, a student published an evidence-based infographic titled "COVID-19: Myth vs Fact" during a time when much was misunderstood about the novel coronavirus (Figure 4). In December 2020, another student contributed to an ongoing thread with an infographic illustration of COVID-19 outcome statistics (Figure 5), which then garnered well over 20,000 impressions and 3,000 engagements—including a commentary repost by a well-known MD/MPH (Figure 6) and translation into Arabic (Figure 7)—despite the student having only created the Twitter account ten days prior. Capstone projects were well-received by peers and the public alike, with substantial constructive feedback being shared among peers in the final module.

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[19] (Gallicano, Ekachai, & Freberg, 2014)

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Figure 4 | *COVID-19: Myth vs Fact, Infographic (March 2020)*

COVID-19: MYTH VS FACT

MYTH: "Coronavirus is a brand new type of virus that we have never seen before."

FACT: We have seen many different types of coronaviruses, just like different types of influeza viruses. This is a family of viruses that can cause respiratory infections, many are fairly mild like a common cold. SARS is another example of a Coronavirus.

MYTH: "Having Coronavirus is just like having a bad cold or the flu."

FACT: COVID-19 and the flu both have symptoms of cough and fever. COVID-19 can also cause shortness of breath. Current data shows that COVID-19 is more infectious than the flu. Each person with the Coronavirus infects 2.5 other people on average versus the flu which infects about 1.3. The fatality rate of COVID-19 is estimated to be between 1-3.7%, whereas the seasonal flu is about 0.1%.

MYTH: "I don't need to socially distance myself because I'm young and have no pre-existing health conditions."

FACT: Social distancing is a group effort- everyone has to do their part for it to be effective. Even if you are not afraid of contracting the virus because you are young and healthy, you may end up passing it to someone who is in contact with the elderly, immunocompromised, or someone with heart disease.

MYTH: "I can't pass Coronavirus if I don't feel sick."

FACT: Studies have shown than you can still be contagious with COVID-19 in the early stages of disease, before you start to show symptoms. This is why it is so important to practice social distancing, even if you don't think you are carrying the virus.

MYTH: "I should go get tested immediately if I suspect that I have Coronavirus."

FACT: You should first call your primary care doctor and they will direct you on the best course of action. In about 80% of cases, symptoms of this virus are mild and can be taken care of at home. There is no medication to treat Corona virus. If you are sick, it is best to stay home and avoid public areas so that you don't spread this virus to other people. If you are experiencing trouble breathing, confusion, chest pain, or blue lips, seek medical care immediately.

FOR MORE INFORMATION ON COVID-19:
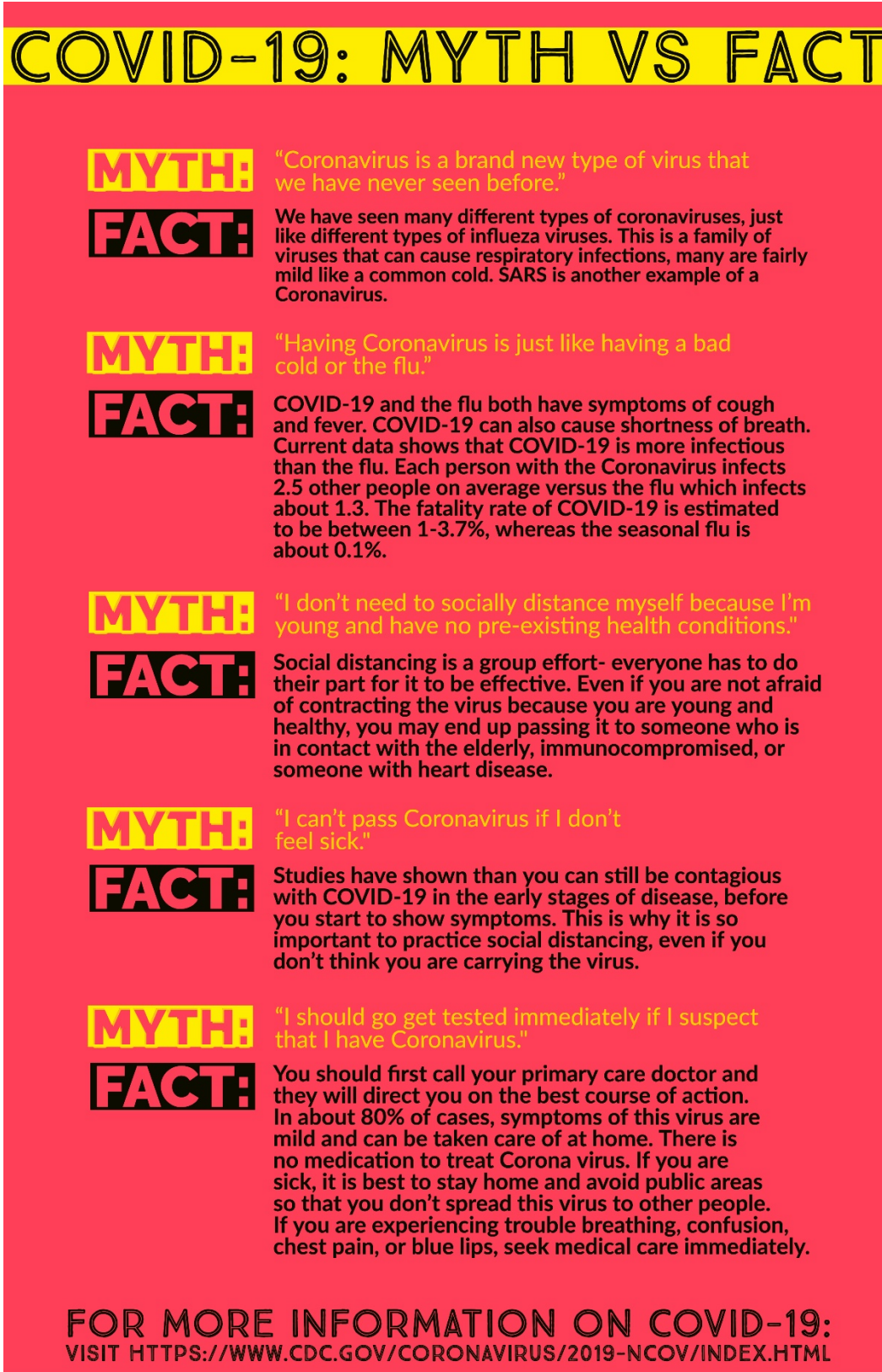VISIT HTTPS://WWW.CDC.GOV/CORONAVIRUS/2019-NCOV/INDEX.HTML

Figure 5 | *COVID-19 Outcome Statistics, Infographic (December 2020)*

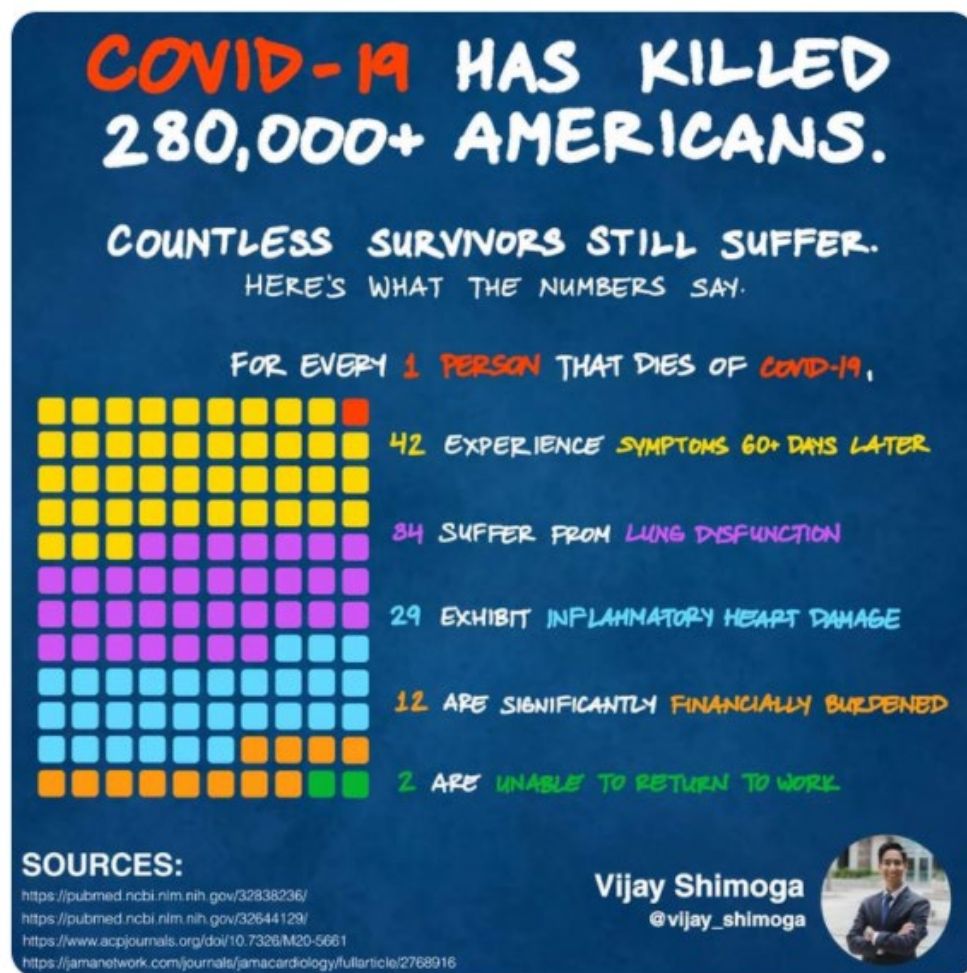**Figure 6** | *COVID-19 Outcome Statistics, Reposted (December 2020)*

Figure 7 | *COVID-19 Outcome Statistics, Tweet Translated to Arabic (December 2020)*

Khalid Jamal - خالد جمال
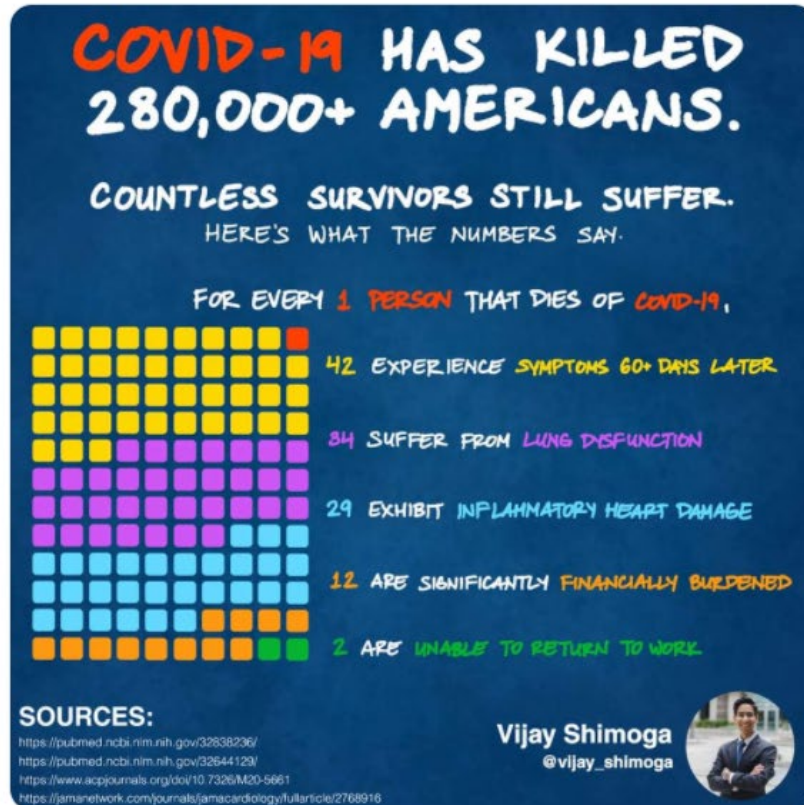@clf2019

إنه ليس مجرد مرض نسبة الشفاء فيه 98%

إحصائية مرعبة

في مقابل كل شخص توفي من كوفيد في أمريكا

42 عانوا أعراضا لأكثر من 60 يوما
34 عانوا من اختلال وظائف الرئة
29 التهاب عضلة القلب
12 تضرروا ضررا ماديا جسيما
2   لا يمكنهم العودة للعمل

عدد غير معلوم ممن لم يتوفوا مازالوا يعانون

Translate Tweet

COVID-19 HAS KILLED 280,000+ AMERICANS.

COUNTLESS SURVIVORS STILL SUFFER.
HERE'S WHAT THE NUMBERS SAY.

FOR EVERY 1 PERSON THAT DIES OF COVID-19,

42 EXPERIENCE SYMPTOMS 60+ DAYS LATER

34 SUFFER FROM LUNG DYSFUNCTION

29 EXHIBIT INFLAMMATORY HEART DAMAGE

12 ARE SIGNIFICANTLY FINANCIALLY BURDENED

2 ARE UNABLE TO RETURN TO WORK

SOURCES:
https://pubmed.ncbi.nim.nih.gov/32638236/
https://pubmed.ncbi.nim.nih.gov/32644129/
https://www.acpjournals.org/doi/10.7326/M20-5661
https://jamanetwork.com/journals/jamacardiology/fullarticle/2768916

Vijay Shimoga
@vijay_shimoga

2:23 PM · Dec 31, 2020 · Twitter Web App

65 Retweets   3 Quote Tweets   145 Likes

Course Evaluation

Following the first offering of the course, with in-person discussion sessions, students reported that they found the coursework too challenging and time-consuming. During the second offering of the course, we offered a flipped-classroom model with real-time video sessions following asynchronous chat-based discussions. These changes in format allowed 5 students to enroll for the second session; later, 100% of students in the second session reported the course took the right amount of time to complete, and the material was not too challenging or too easy. Other ratings from the second session are summarized below (Table 3); this particular survey was not used in the first and third offerings due to intimate class size and direct spoken feedback.

Table 3 | *Course evaluation, second session*

Course Rating	Excellent	Very Good	Good	Fair	Poor
Overall, how would you rate the course?	2 (50%)	2 (50%)			
Helpfulness of Coursework	**Extremely Helpful**	**Very Helpful**	**Somewhat Helpful**	**Not So Helpful**	**Not At All Helpful**
How helpful were the assignments to your understanding of the material?		4 (100%)			
How helpful were the guest speakers to your understanding of the material?	1 (25%)	2 (50%)	1 (25%)		
How helpful were the discussions to your understanding of the material?	1 (25%)	3 (75%)			

In free text sections of the evaluation, student comments from all sessions emphasized the importance of course discussions as well as one-on-one feedback:

> "Our weekly discussions were the most valuable part of the class. They felt like casual but informative conversations much more so than hyper-focused and regimented lectures about specific topics. I also found that Dr. Zuckerman's willingness to work 1 on 1 was super helpful with getting insight on developing our ideas."

> "The strength of this course is the one-on-one feedback that Dr. Zuckerman and Vincent can offer each student. That feedback is essential for student development throughout the course."

Students also appreciated the opportunity to be creative, which was reflected in their advice to other students:

> "[The course is] versatile/flexible to whatever the student wishes to get out of it. It gives medical students access to tools to quickly get their ideas out there."

> "I liked the flexibility and the opportunity to be creative."

> "Have fun and brainstorm on the capstone so that whatever you make can have a real impact in the real world in some way!"

> "Be open, be creative. Don't be afraid to be wrong. Enjoy!"

LIMITATIONS

There are numerous limitations to our assessment of the course. Notably, we had a small number of enrolled students which may introduce bias to our results. Nonetheless, integrating this coursework into a broader curriculum may represent a solution for inclusion of a larger number of students. It was also challenging to obtain post-surveys after the course concluded, but we may suggest tying it to course completion in the future. In these pilot offerings of the elective, we did not assess the actual social media activity of students; however, we plan on adding such an assessment in future iterations.

A common barrier to successful implementation of Digital MD is self-selection by students who assume such a course requires advanced technology skills. Encouraging students without significant social media presence or experience creating digital media is important for overcoming cognitive barriers. In future implementations, it may be worth offering a prerequisite training/workshop session in which learners are guided through the installation of necessary software and a walkthrough of their first project.

Student feedback suggests that the most significant limitation to the success of the Digital MD elective is time constraints. In free text sections of the post-survey, multiple students identified this as a challenging factor:

"I found that the time constraints imposed by our regular coursework made it difficult

to bridge that gap from my current digital media skillset to something greater.

I was originally planning on experimenting with [new Adobe software] but ended up having to resort to [familiar software] instead because of time constraints."

"[The course could be improved with] more time for capstone."

"The biggest challenge is managing student expectations about workload for this elective. [The course] was hard for me to adjust to because of the additional time needed for the class."

As time constraints are likely correlated with the low enrollment numbers seen, integrating this coursework into a broader curriculum may also effectively address this limitation.

CONCLUSIONS

The Digital MD course aims to teach students about social media, digital scholarship, and their successful use as physicians. In preparing the curriculum, we performed a needs assessment based on a survey of our medical students and attempted to identify curricula used elsewhere. As developed, our novel curriculum couples didactic lectures and discussions with engagement-focused assignments and experiential labs designed to increase student confidence in digital media. Students learn not only about the role of microblogging within online communication, but also how to set up a Twitter account and craft a tweet. Similarly, students are given background information on digital education theory and assessment of resources before being asked to create their own—such as recording and editing a podcast. While online resources (e.g., blogs, YouTube videos) teach limited activities discussed in the course (e.g., making an infographic, setting up Twitter account), they do not represent a comprehensive curriculum. Analogously, a YouTube video may demonstrate how to perform a lumbar puncture, but it is not a substitute for the medical coursework that teaches about meningitis, and the indications and contraindications for such a procedure.

Our assessment map first utilized structured exercises in which students demonstrated their understanding of theory, then challenged students to take the concrete actions required to engage in social media and digital scholarship.

The pre- and post-surveys demonstrated that students are already engaged in social media for personal activities but had concerns about using it for professional communication. This is a common result of institutional policies and educational initiatives that only portray negative outcomes (e.g., loss of patient privacy, unprofessional Facebook comments).[20] This "abstinence-only" approach to social media results in a decrease in engagement, leaving mostly non-physicians to engage online about public health topics. Alternatively, students who do continue to engage online have not been given the skills to do so effectively, professionally, and ethically.

Post-survey feedback suggests that students gained confidence about creating and assessing digital media. Furthermore, they gained confidence in their online brand and in creating digital medical educational content. They progressively learned to pay attention to their online presence, retained knowledge about digital education theory, were able to emulate the behaviors of online advocates, and were motivated to get involved in public health and medical education using social media and digital scholarship.

The course evolved from its first session, subsequently shifting to online discussion sessions and addressing time constraints to reduce workload. A significant strength of the course is its portability to other medical programs. Curricular exercises use social media platforms that are readily available and that many faculty members and students already use on a personal level. From the software perspective, Adobe Creative Cloud

[20] (Kind, Genrich, Sodhi, & Chretien, 2010)

is the industry standard for creation of digital content and an increasing number of institutions have already invested in free or discounted licenses for its students and faculty. Alternatively, there are numerous free, open-source alternatives (e.g., GIMP, Canva, Piktochart, YouTube, Audacity) for creation of visual and audio media. Speakers may be recruited locally or online to provide virtual sessions; we anticipate, though, that schools will already have faculty members that maintain social media profiles and create digital scholarship for a variety of reasons (e.g., education, advocacy, patient referrals). The success of the course, therefore, does not rely on local experts in social media, but rather on the discussions many faculty members may have regarding the application of social media and digital scholarship principles.

We addressed a curricular gap identified through needs assessment and demonstrated the feasibility of an undergraduate medical student elective on social media and digital scholarship. When circumstances warranted, we adjusted some components of the course in real-time (shifting to online sessions) based on feedback. Future courses may benefit from long-term assessment of changed behaviors (e.g., social media activity), as well as a larger online collection of student capstone projects. An alternative approach is integrating these activities into current medical courses (e.g., a longitudinal patient experience in an endocrine clinic that also explores the social media content about diabetes).

Regardless of exact implementation, the principles from Digital MD represent an innovative and relevant pedagogy with real-time, real-world impact.

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