

Research Proposal for master (digital media)

**Using social media to raise awareness among critical care
workers: LinkedIn as a case study. An analytical study.**

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Dated (2026)

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Introduction:

Social media has become an integral part of information sharing in our daily lives, and there has been a significant increase in the number of social media users. The latest statistics on the number of new users in the digital world show approximately 294 million new users in the last year [1].

Social media relies on numerous digital platforms that have significantly contributed to knowledge exchange among teachers, students, critical care workers, and academic environments. Facebook, Twitter, LinkedIn, YouTube, Instagram, Wikis, Blogs, Podcasts, and WeChat are among the most popular social media platforms worldwide [2].

Writing digital content related to the intensive care unit (ICU) is considered one of the most complex types of content, both in terms of developing the concept and in conveying it to the target audience in the simplest and most accurate way. Even today, many ICU staff struggle with the abundance of information about the health field on social media, often written by non-experts or by experts who use artificial intelligence tools to create their digital content, or who write overly complex scientific material in just a few lines, claiming to have conveyed the idea to the public.

LinkedIn is a valuable platform for digital content creation, boasting high-quality scientific writing from experts in their respective fields. However, recently, many science writers and healthcare professionals on LinkedIn have begun utilizing artificial intelligence (AI) tools in their content. AI provides valuable information, particularly regarding ventilators, but this information is still not entirely reliable for digital content creation. Even respiratory care specialists may

overlook errors in AI-generated digital content, and these errors can only be detected by those with extensive experience in the field.

Ventilation waves are a crucial scientific topic that remains largely overlooked, particularly in intensive care. As Eduardo Mireles-Cabodevila, Matthew T Siuba, and Robert L Chatburn(2022) said, ventilator waves are as vital as cardiac waves in diagnosing cardiac diseases[3].

Furthermore, there is a significant lack of scientific resources on ventilator waves from experts in the field. The need for scientific books and digital content on ventilator waves is growing, especially with the increasing use of new ventilators in Saudi Arabian hospitals.

In this study, we aim to evaluate how providing specialized digital scientific content (posts) on mechanical ventilation waves on LinkedIn has simplified mechanical ventilation waves for critical care workers through comments, likes, shares, and other actions that increase engagement on the platform regarding mechanical ventilation waves.

Literature review:

Social media platforms are an important tool for disseminating medical information. However, digital health content still suffers from several challenges, including content creation by non-specialists or by specialists with limited experience and knowledge. Another ongoing issue for critical care specialists is the use of artificial intelligence in writing critical care digital content, which has resulted in a superficial understanding of complex information and numerous unchecked errors. There is a severe lack of research on digital content related to intensive care unit health information. While some studies exist, they are limited in scope and offer some insight into this topic.

- **Evaluating the Functions, Benefits, and Barriers of Using Social Media for Communication Among Healthcare Professionals. Chan WS, Leung AY (2018).**

The study, titled "Evaluating the Functions, Benefits, and Barriers of Using Social Media for Communication Among Healthcare Professionals," defines social media as web-based services

that allow individuals to create profiles and build networks with other users within the system. It also notes that social media platforms are increasingly used for health communication and research, providing a space for the public to access health information and seek support when needed[7].

- **Not Only for Career Networking: Can LinkedIn Be Used for Radiology Education? Kauffman L, Weisberg EM, Fishman EK (2021) and Radiologist network: Various ways social media can supplement professional development. Kaylee Mach, B.S., Leila Jamal, B.S., Navid Faraaji, M.D (2016).**

The two previous studies show that social media platforms, especially LinkedIn, have become an important tool not only for recruitment but also for raising awareness in the field of diagnostic radiology. Social media also contributes significantly to education and to building social connections with experienced professionals in the same field[4,5].

- **Use of Social Media for Professional Development by Health Care Professionals: A Cross-Sectional Web-Based Survey . Alsobayel H.**

this study indicates that social media plays a significant role in enhancing professional development in Saudi Arabian hospitals. The author notes that social media not only facilitates professional development but also serves as a tool to promote professional communication, education, patient care, public health programs, and the promotion of organizations and research. However, the researcher also acknowledges the risks associated with social media, including the accuracy, quality, and reliability of information; patient privacy and confidentiality; the blurring of boundaries between personal and professional life; increased risk of legal liability; and the lack of methodological rigor in social media-based research[6].

The study, titled "Evaluating the Functions, Benefits, and Barriers of Using Social Media for Communication Among Healthcare Professionals," defines social media as web-based services that allow individuals to create profiles and build networks with other users within the system. It also notes that social media platforms are increasingly used for health communication and research, providing a space for the public to access health information and seek support when needed[7].

- **How Health Care Professionals Use Social Media to Create Virtual Communities: An Integrative Review. Rolls K, Hansen M, Jackson D, Elliott D. (2016).**

this study aimed to understand how healthcare professionals use social media to create virtual communities. While relatively old, having been published in 2016, it offers valuable insights. The study indicated that some of the most common reasons for creating virtual communities among healthcare professionals are:

1. Establishing a professional forum to discuss relevant professional and academic issues and exchange information and knowledge.
2. Addressing professional isolation.
3. Facilitating professional communication.
4. Enhancing collaboration and mentorship among colleagues.
5. Facilitating professional development.
6. Improving clinical practice through research and the application of scientific evidence.
7. Obtaining clinical advice or opinions[8].

Problem of study:

The problem addressed in this study is the impact of posting information about ventilator waves on LinkedIn in raising awareness among critical care unit staff and anesthesiologists worldwide.

This study aims to understand how social media influences the dissemination of information related to ventilator waves and how the complexities of this field can be presented in a more detailed and accessible way through posts based on reputable and well-known medical references and various websites.

Importance of the Study:

1. Studies that focus on how digital platforms affect the awareness of critical care workers are very few. In our study, we contribute to clarifying a practical model through the special page on the LinkedIn application of how digital content contributes to simplifying medical information relevant to the field of critical care, especially regarding medications and waves for artificial respiration.
2. Understanding how healthcare professionals consume content related to ventilator waves and which digital templates motivate them?

3. Understanding how the creation of specialized digital content in the health field contributes to the continuing education of healthcare professionals.
4. How does specialized digital content on ventilator technology contribute to improving the quality of healthcare and patient safety?
5. The study highlights the importance of social media platforms in disseminating specialized health awareness, rather than relying on traditional methods.

Objectives of the Study:

1. This study aims to measure the extent of audience interaction and engagement with digital content specializing in mechanical ventilation waves, through likes, comments, shares, and saving of digital content.
2. A demographic study of the audience following the digital content and how they interact with this specialized content on mechanical ventilation waves.
3. understand how specialized digital content contributes to enhancing professional expertise and how it contributes to building a professional network among critical care professionals..

Study Questions:

1. What is the engagement rate (likes, comments, saves, follows, and profile visits) for content specializing in respiratory wave analysis versus content specializing in pharmaceuticals?
2. What is the difference in impact between content accompanied by images, content accompanied by slides, and content accompanied by carousels?
3. Does the engagement behavior (sharing and saving) reflect the audience's reliance on digital content as a sustainable reference source on respiratory wave analysis?

Study Concepts

1. **Social media:** Social media (SM) can be described as “a collection of web-based platforms that enable the creation and sharing of content generated by users.” This encompasses the development of online communities and the distribution of information, thoughts, viewpoints, messages, visuals, and videos[9].

2. **Awareness:** Awareness is the degree to which an individual is consciously aware of the stimulus that prompts a certain process, the functioning of that process itself, and/or the results produced by the process[10].
3. **Critical Care worker:** refers to an individual who provides care and assistance to the ill or injured, either directly as physicians and nurses or indirectly as assistants, support staff, lab technicians, or even handlers of medical waste[11].

Study Hypotheses and Assumptions:

Study hypothesis:

1. Digital content on ventilator waves is of great interest to critical care professionals and anesthesiologists.
2. Digital content on ventilator waves is used as a primary reference by critical care professionals.
3. Digital content with long, in-depth slides on ventilator waves is more valuable to critical care professionals than digital content with images or carousels.

Study assumption:

1. The information obtained from the LinkedIn page regarding respiratory waves and medications is accurate and error-free.
2. The participants in the comments, likes, and file saves are real people, not bots.
3. The majority of participants in the sample are healthcare professionals.

The Theoretical Framework:

This study is fundamentally grounded in Connectivism Learning Theory (Siemens, 2005), Connectivism is a learning theory that emphasizes the importance of connections and networks in the process of acquiring knowledge.[12]. When we apply this theory to our LinkedIn profile, we find that it serves as a specialized, open-source learning node for critical care professionals. Since connectionism posits that current knowledge is distributed across digital networks and that learning occurs through continuous interaction with these nodes, our study reveals that some critical care practitioners utilize LinkedIn as part of their learning network. Specifically, we observed significant engagement from critical care professionals with posts about mechanical

ventilation. This study demonstrates the contribution of informal networking to bridging the gap in continuing medical education.

Research Design, Data Collection and Data analysis:

In our study, analytical analysis was used to analyze the content of LinkedIn pages from January 13, 2025, to June 11, 2026. Specifically, we analyzed posts related to respiratory care and respiratory wave analysis, as well as posts about medications used in critical care. This analysis examined the timing of each post and its impact on its reach. We also analyzed post performance by examining impressions and reach, profile activity (views of the posts), and the number of followers gained. Furthermore, we analyzed engagement through social interactions, including shares, saves, and shares via LinkedIn. Finally, we analyzed the audience demographics of each post, including job title, location, seniority, company, and industry.

Failed of study

1. Measuring audience engagement through shares, comments, saves, likes, and private messages.
2. Analyzing results generated via Excel using the LinkedIn app only.
3. Analyzing posts published from [date] to [date].
4. Results analyzed from the LinkedIn profile. The study is both quantitative and qualitative, analyzing only the data available on LinkedIn and the most significant messages received through the platform.

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