

The Conundrum of Medical Writing

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Writing is an art. Medical writing is an amalgamation of art with science. Not all medical writers have the inherent capability to pen down their work. For some it is a source of contentment, happiness, and authorization whereas it's a hard nut to crack for others, requiring additional efforts to accomplish this uphill task.

Future medical writers confront many challenges before they embark upon this worthwhile endeavour. Some may not realize its importance; others simply enter into the world of bewilderment as to how to start. Yet others are well versed with the subject but just cannot pen it down and the majority cannot squeeze their time in because of their hectic daily routines. In order to counter these challenges, one has to overcome the conundrum of medical writing.

Why to Write?

Medical writing is an essential feature of evidence-based medicine and is mandatory for progress in the medical profession. Apart from religious, international, national, institutional, and professional gains, the honor, regard, and respect a medical writer earns in the scientific world is priceless. High research scores, h-indices, portfolios, citations, and references quoted by other researchers and writers elevate you to unfathomable heights. Your work creates an opportunity for others to get benefit from the work done and the medical knowledge grows in a stepladder fashion. Ultimately the main aim i.e. Benefit humanity also fulfilling the divine requirement for a Muslim medical writer.

This qualm of writers' hesitancy can have devastating effects on the professional career of a writer. Age limit constraints, fear of losing an opportunity to appear in examinations on time, poor prospects for gaining senior posts and promotions, etc. can be detrimental to the psychosocial well-being too. This initiates the unfortunate vicious circle causing further delay or even abandonment of work. This state of affairs could

be demoralizing for a doctor who is otherwise humane, hardworking, conscientious, and has been courteous to patients. Even his research could be an extraordinary work but he is unable to put it down in black and white. The medical writers have to trounce over this perplexing situation by getting acquainted with the essence of writing.

The significance of Medical writing cannot be undermined as it forms the basis of development, evolution, and progress in the medical field. It is the only preservable way of transferring knowledge to others. The importance of gaining knowledge and preserving it is very well depicted and stressed in Islam.

The first Divine word "IQRA" and the second revelation related to "THE PEN" is ample evidence. Numerous Hadiths stress gaining knowledge and preserving it. I quote one Hadith "TAQYID AL ILM", {define, preserve and record knowledge by 'writing it down'}.¹

History Of Medical Writing:

There are shining examples from the Golden Age of Islam from the eighth century to the fourteenth century when knowledge about medicine flourished extensively only through medical writing.²

The magnanimous work of Avcenna [Ibnesina] and Rhazus[alrazi] laid the foundation of modern-day medicine. Ibne-sina was to the Arab world was Aristotle of the 4th century was to Greece. His book 'Canon of Medicine' was a masterpiece and was taught in the West for over 800 years. Out of his 450 publications, 240 have survived. It is astonishing to note that he wrote 20 books in other fields and 20 on medicine when he was just under 21. It is a harsh fact that present-day generations "Generation Y [1981-1996] and Generation Z' [1997-2012] may not be familiar with their work and even with their names.³

Al-Razi wrote over 200 folios and monographs mostly on medicine encompassing his medical observations

and experimentations as well as retrieval of old Greek knowledge. His book, KITAB AL HAWI, was an enormous work comprising 23 volumes and also included 900 case histories by his students. It had a great impact on the development of medical knowledge in Europe and was repeatedly printed there in the 15th and 16th centuries as "The Large Comprehensive" {'Liber Continens'}.^{4,6} The following example is enough to salute his wisdom when he says: *'The physician, even though he has his doubts, must always make the patient believe that he will recover, for the state of the body is linked to the state of the mind.'*

The first evidence of medical writing can be traced back to Egyptian Papyri from 3000BC⁷ surprisingly mentioning treatment of Diabetes and Cancer. Later on, the ancient medical work of Greek philosophers made phenomenal progress. Hippocrates {460BC} whose oath is still taken by our young medical graduates is known as the Father of Medicine. Plato, Aristotle, Alexander, and Galen are also worth mentioning as physicians and philosophers of their times whose knowledge and elegant treatises revolutionized the world. After the fall of the Roman Empire in 476 AD, Europe had a dark era for over 900 years and Muslim medicine prevailed from the 5th to 14th century. From the 15th century onwards revival was seen in Europe after the fall of Baghdad.

For the last 500 years, evidence of Muslim contribution is again sparse and scanty. There is a dire need for our researchers to contribute and spread their valuable research to achieve the sublime goals. Medical writers should surmount this predicament and decide what to write.

What to Write?

In the medical field, it is said that "something which is not written is not done". So much so that it implies to patients' case record documentation too. Medical writing can be in various forms. For medical postgraduates, it is in the form of synopsis, thesis, or dissertations and for medical journals, it encompasses research articles and their abstracts, review articles, book reviews, case reports, case series, short communications, editorials, letters to editors, etc. Other forms include internal reports, regulatory reports, Conference presentations, oral and poster presentations. As a beginner, the development of brochures, short communications, and poster presentations are suggested to start with.

Read Before You Write:

Reading is mandatory for every medical writer. It improves vocabulary and attention span. It familiarizes you with sophisticated medical language.

Regular reading gives you an insight into how the authors have penned down their findings in a structured way. It helps you to appreciate how the writer has incorporated the findings of his work into a grid or a structured framework. In medical documents, especially the research papers and theses, the readers must appreciate that each written sentence has its place. The text is within a structured framework. Moreover, an attentive reader should also appreciate sentence construction, English grammar, and writing skills. With this background, the writers can develop their style to describe their work.

Reading has many beneficial effects on mental and physical health too. It is a form of free entertainment especially if it is non-compulsive. Evidence shows that daily 30 minutes of reading has beneficial effects on Blood Pressure and heart rate, decreases stress levels, and increases life expectancy by an average of 23 months.⁸ Reading strengthens connections in the somatosensory cortex, especially of the left hemisphere, and improves cognition, memory, and critical thinking skills. Daily reading can keep Alzheimer's at bay.^{9,10} Reading stimulates the mind to put down our thoughts on-page.

The content of relevant reading material gives an insight into the gaps in existing knowledge, familiarizes with the new emerging problems/innovations, and also enables us to get acquainted with the controversies surrounding the management of certain diseases. This might form the basis of the writer's medical work which the editors and reviewers are looking for. Regular participation in journal clubs, academic gatherings, visiting libraries, using targeted digital sources, and keeping books at your workplace and by the bedside will also assist.

Later on, even if the research is complete, the writer is hesitant to pen it down. . To achieve this end, writers need to find a convenient time which is most difficult to stumble on. So the next obstacle to overcome is to find time to write.

When to Write?

Finding a convenient time to write is often difficult due to busy daily routines and hospital duties. Fear of rejection of the work always keeps haunting causing further delay in submission. The writers try to find a long weekend or look for special leave and some may even defer it till their retirement! It is proven that frequent small bits of writing work better than 'binge writing', thus daily putting down a few sentences will suffice.

The best time to write varies. It is said that great ideas do not announce their arrival. They may come at an

odd place and at strange times. So keeping a pen and paper always with you is a good practice. Some researchers believe that the best time for deep thought process is just after dawn [morning larks] while others think that human brain productivity is best in late-night hours [night owls].

Early morning hours are associated with fresher ideas and an alert mind. Recall memory is at its best during morning hours. Whereas late night is associated with improved concentration, peace, and quietness with no pressing commitment ahead.

The researchers believe that in a tired state, the frontal cortex exhibits strange behavior. All input data from our five senses is processed here during the day. When we feel tired, the body produces chemicals such as Adenosine {dopamine receptor blocker}. The frontal cortex being the major seat of dopamine processing gets slower in getting inputs from surroundings while other parts of the brain are still active, especially the right hemisphere. It is believed that the creative control center lies here and is related to emotions and intuitions. This selective activation-damping system spurs creativity, running wild, accepting ideas and patterns of thinking that would have been blocked by the otherwise active frontal lobe. So a relatively tired state favors creativity.¹¹ Charles Dickens says that "there is some magic in late night. Ideas are like strange creatures that pop out at night!"

Sleeping after studying at night helps the brain to consolidate information and improves recall. This is the concept of "sleep learning". During slow-wave sleep, the memory-consolidation process works at its best and the brain can process it down during its time of rest.¹²

In practical life, you must listen to your body's signal. The best time to write is when your creative impulse urges you to write. It depends on individual Circadian rhythms, the biological clock, and the energy cycle in everyone, rather than the time of day. You can condition yourself to a convenient time as per your schedule. Writing should not be done in haste; it should be like a relaxing meditation so that creativity keeps pouring out of your brain.

A peaceful noiseless comfortable environment is also important for many. Another factor that promotes good writing initiative is your peers and family support. Even good health and a state of happiness facilitate writing capabilities. Happiness promotes writing and I firmly believe that writing promotes happiness as it gives you a sense of achievement. Writing reduces stress. Regularly spending only 20

minutes per day on creative writing has been shown to decrease anxiety.¹³

How to Write?

When writing the first manuscript, the first few sentences are the most difficult ones. Many thoughts come into being only when they are written. It is called "thinking on paper". This technique is used to conceive new ideas and develop existing ones. If this link between thinking and writing is not recognized, a deadlock occurs leading to 'writer's block'.¹⁴

The trick of the trade for future medical writers, which I use too, is that once you sit down to write, scribble everything that comes to your mind, no matter whether right or wrong. If you are working on a laptop, forget about Delete and Backspace. The goal is to let all thoughts out. If you are successful in this initial endeavour, it will build up the momentum. Put this initial manuscript aside and do not start correcting it. Do not worry about mistakes or grammatical errors at this stage. Review after some time. This small piece of work will form the basis of your medical writing on which you can always rearrange your thoughts and re-write.

For the beginners of research paper and dissertation/thesis writing it is advised not to structure your text to start with. Do not start from 'Introduction'. If you start writing from the introduction you will be heading towards a long essay without a direction. Start with 'Methods and 'Results'. After getting statistical analysis, proceed on to 'Discussion' of your results in view of existing knowledge. References from the last 5 years will help endorse {or reject} your findings. After complete comprehension, it will be very easy for you to write an introduction as you already have an answer to your research question. Logical conclusions can be drawn and written at the end. Finally, revisit your title and finalize it only after completing the whole paper.

Avoid fatigue and improve your work output by adopting the Pomodoro technique; write for 25 minutes with a break of 5 minutes and resume writing.¹⁵

Now is the time to plan your work. It is said that if you fail to plan, it means you plan to fail. Systematically rearrange your draft. Authors can have guidance from the International Committee of Medical Journal Editors' uniform requirements for manuscripts submitted to biomedical journals. Authorship should be decided, and patient confidentiality is maintained.¹⁶ The data must be accurate, free of false results, and plagiarism. Even negative results should also be presented.

Finally, sit back and read out to yourself. Analyze it as if you are its editor. As English is not our mother's language, grammatical and spelling mistakes ought to occur. Learn to write grammatically correct English. Remove unnecessary words. {word economy}. Write logical, simple, clear, reader-based English and avoid stilted language. Take care of tenses and do not use linguistic complexities. Remember you are a medical writer and not a Shakespearian disciple!

The concept of 'crowd wisdom' also needs to be considered i.e., showing your written script to some reliable peers who can help as they have a fresh eye. You may need to write it again.

The beginners often get perplexed when their work is subjected to editing and re-writing. Most articles are rejected due to wordiness, redundancies, poor syntax, and grammar. For medical writing, it is said that "there is no way to get experience except through experience". Always revisit, evolve and distill your work to make it crisp and reader-friendly. Amicably tackling the enigma of medical writing will discover the future medical writer hidden in yourself.

Writing- An Obligation

Then on that Day you shall be asked about the bounties (of Allah) [102: 8].

Utilizing our skill of writing is one of the bounties Allah bestowed upon us. What will be our answer that Day if we do not utilize it? How are we going to justify our inability to serve humanity for the betterment of His world? We are all born with some skillsets for a purpose. Employing the skill of writing, thus, is no longer a choice - it becomes an obligation.¹⁷ So we must come out of the doldrums and harness our skills for medical writing.

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