

Knowledge Management in Modern Era: A Food for Thought for Surgeons

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IMPORTANCE The modern digital world has changed the definition of knowledge. As bricks form a wall, so does the data to the basis of knowledge. The raw observation (data) when becomes meaningful, is called information and the use of this organized information is called knowledge. Hence knowledge is different from knowing which is merely a state of being informed. The present scientific advancements have largely been based on knowledge acquired and applied by individuals and organizations. It is becoming increasingly important to differentiate between information and "valuable knowledge" for all medical disciplines and so is in surgery.

KEY WORDS Knowledge Management, surgeon, surgery

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Editorial

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What is knowledge? Is it the same as knowing? How is it different from information? How can we manage the information over load in modern digital world? These are the few questions perplexing the mind of all surgeons especially when there seems to be an overload of information in present world. Let's discuss these questions one by one.

What is knowledge? Traditionally, it is defined as 'Justified true belief'. Though Gettier has pointed out few weaknesses in this definition but it served the purpose of defining knowledge for centuries. Let's understand this definition by quoting an example of two apples, one is a plastic replica of an apple and another is a real apple. The plastic apple is also same as the other apple but by definition, this is not a real apple because It lacks the texture and one cannot bite it though it looks and appear as apple. Hence for me to take it as an apple (a belief), I have to have justification that has to be true. That justification comes from experience gained through our senses or developed by logic. So, there are two types of knowledge, empirical that comes from observation and experience through our senses and rational that is based on logic like the formulae of mathematics.

The modern digital world has changed the definition of knowledge. As bricks form a wall, so does the data form the basis of knowledge. The raw observation (data) when becomes meaningful, is called information and the use of this organized information is called knowledge. Hence knowledge is different from knowing which is merely a state of being informed. The present scientific advancements have largely been based on knowledge acquired and applied by individuals and organizations.

Learning is a life long journey. To keep up with the complex surgical problems like cancers and trauma, and to learn the modern techniques of laparoscopy, robotics and artificial intelligence, surgeons need new knowledge and skills.

Currently, we have many sources of information, like websites, social media applications, webinars and print media like journals and textbooks. One big source of such knowledge comes from research published in the journals. There are more than 4000 surgical journals published monthly. So, poor surgeons are bombarded with lot of information and it is difficult for them to differentiate which one is the most valid and reliable.

The ability to differentiate wheat from chaff comes from learning the skills of critical appraisal of literature. The McMaster University has developed the critical appraisal tools like EBM (Evidence Based Medicine) and the GRADE (Grading of Recommendation, Assessment, Development and Evaluation) which should be in the toolbox of all academic surgeons. Knowing the quality of evidence helps its efficient use in solving the local problems which might be very different from the one mentioned in the studies or population-based guidelines.

There is also a role of journals to help the readers by selecting, editing and publishing high quality research. One way of ranking the journal is the impact factor of the journal which is a measure of the frequency with which an average article in the journal has been cited in a particular year. Similarly, there are many video-based sources of information and knowledge which can be used by surgeons to learn and then practice operative skills by observing the

experts operating. However, the down side of the video-based resources is the learning of wrong or unsafe procedures. Hence, careful selection of the source is desired. Online resources like WebSurg, AIS channel and YouTube, are few great resources for learning the operative procedures.

So, if you want to keep yourself current but at the same time, manage the knowledge overload, develop the critical appraisal skills for reading surgical literature, consult the sources of evidence-based reviews like Cochrane and read journals that have high impact factor. This is the only way you can keep your toolbox updated to solve the clinical problems in surgery in more efficient and evidence-based way¹⁻⁴.

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