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Review Article

Evidence Based Decision Making In Oral Health Care: An Emerging Trend.

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Abstract

Evidence based decision making in medical care includes the clinical expertise of the clinician, patients' values, patient circumstances and preferences along with the scientific data collected from multiple resources for rendering a better health care facility. It making refers to planning treatment and management based upon available research materials and experimental confirmation. With effortless availability of immense knowledge in the form of experimental and observational studies in this electronic leviathan, it is imperative that treatment decisions should be supported by the best available scientific evidence in order to optimize the treatment outcomes. Planning a treatment strategy on the basis of evidences is definitely appreciable, but a facility should also be created on the databases regarding easy intimation of review of the clinician, after patient management based on various evidences. Studies regarding usefulness of the treatment provided and the outcomes achieved, should be encouraged in each and every health care system, so as to make the concept of evidence-based decision making an accomplishment.

Keywords : Decision-making, informatics, diagnostic systems, Evidence, Clinical Judgement, decision-aids, patient participation, patient preference.

INTRODUCTION

An available body of facts or information specifying whether a credence or proposition is realistic or justifiable is termed as evidence.(1) Evidence-based decision making is a process of landing on a conclusion based upon available research and experimental confirmation. Aristotle went ahead of the notion of evidence just as an elementary non-resistant acumen of senses and stated that although all living beings have sensory experience of things, human beings are the only living creatures who can actualize them and probe deeper into the authenticity of the verity. According to him, the evidence is not only an elementary non-resistant acumen of senses, but a steady procedure of revelations, a proficiency that "determines and divides" better, and betters the "undetermined and undefined": it sets in motion with what is most evident to our eyes, towards what is unerring and more evident in nature.(2)

With the effortless availability of immense knowledge in the form of experimental and observational studies in this electronic leviathan, it is imperative that treatment decisions should be supported by the best available scientific evidence in order to optimize the treatment outcomes. American Dental Association (ADA) defines "evidence-based dentistry" (EBD) as: an address towards oral health care that necessitates the astute amalgamation of systematic evaluation of clinically pertinent scientific evidence, relating to patient's oral and medical condition and history, with the dentists' clinical expertise and the patient's treatment requirements and preferences.(3)

HISTORY

The evidence-based medicine concept in the current era was put forward by Archibald Leman Cochrane, who is also known as the father of modern clinical epidemiology and evidence-based medicine. His randomised control trial works have laid the foundation for building Cochrane library

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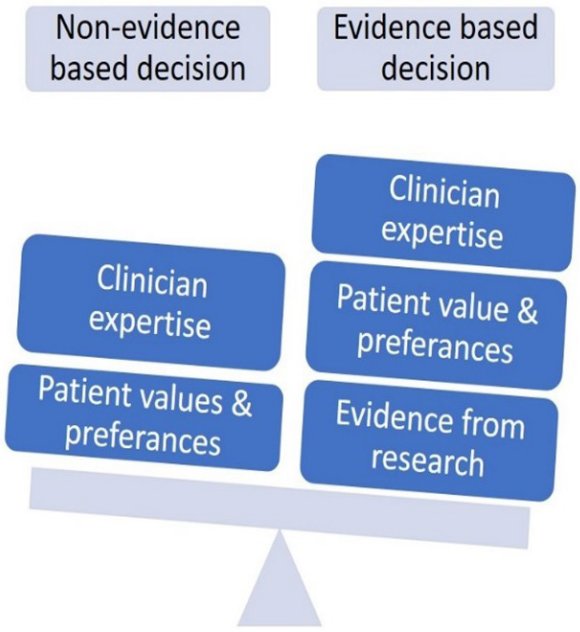
which is a database of systematic reviews. Cochrane, a British International charitable organization founded in 1993 under the leadership of Sir Iain Geoffrey Chalmer, carries out systematic reviews related to health care interventions and diagnostics and publishes them on an easily approachable world-wide library. Health care workers including doctors, nurses as well as other paramedical staffs can access this database to brush up their knowledge and use it on a regular basis for making evidence based decisions.

Evidence based decision making in health care system

Evidence based decision making in medical care includes the clinical expertise of the clinician, patients' values, patient circumstances and preferences along with the scientific data collected from multiple resources for rendering a better health care facility.

Clinical expertise of the clinician is acquired from long-term clinical practice, proper history taking and taking opinion from other clinicians, and patient's value and circumstances includes awareness amongst the patients regarding the disease along with socio-economic status of the patients. Keeping in mind all the circumstances, if decision regarding the treatment plan is based upon fresh and newly accumulated evidences, then the result shall be more productive and more effective. (4)

Figure 1. Evidence based decision making in clinical practice.



Scope of evidence-based decision-making process in oral oncology

The wide variety of screening options, treatment options, cost of surgery and quality of life pose a challenge for the dentists and oral health care providers to practice evidence-based decision making. Although there exist several reports on the efficacy of the multitude screening techniques in oral cancer, the dental surgeon, especially in the developing countries rarely screen their patients for oral cancer. Lack of synthesizing the evidence is probably the most common attribute of this. Similarly, the neck dissection procedure employed for every oral cancer patient is inadvertent. There are several reports establishing the efficacy of prognostic factors in oral cancer which can foresee the level of lymph node metastasis and failure of treatment instituted. Multiple studies have been caried out and have even confirmed the presence or absence of certain markers in the cells like E- cadherin, Integrin, p63, p53, Cyclin D1, etc., that are linked with the lymph node metastasis.(5–9) However lack of synthesizing evidence, time and resources prevent the maxillofacial surgeon from incorporating evaluation of prognostic factors and practicing individual specific therapeutic strategies. If along with visible clinical features, histological findings and radiation studies, data from various research are used in a cumulative way, then there can be a more accurate diagnosis with better treatment planning and prognosis. This will not only be helpful for the clinician in planning a better treatment facility, but will also be more acceptable by the patients. Patients as well as their family members who lose their confidence after hearing about cancer diagnosis and enter into a state of uncertainty, will get a chance to revive their strengths as well as lost confidence, if they are included in evidence-based decision-making procedure. Research studies, case reports and publications regarding successful commencement of new clinical trials can be used as references for boosting confidence of the patients as well as their attendants.(10) The decision criteria can involve four standards; standards associated with the doctor, associated with the patient, decision specific standards and contextual factors. These four standards are so exhaustively presented that upon careful selection of evidence, a dental surgeon can screen oral cancer and a maxillofacial surgeon can choose the treatment strategy by avoiding inadvertent surgery.

Skills required to establish an evidence-based decision-making process

The process of evidence-based decision making always begins with framing a proper search questionnaire. A well framed question is based upon the PICO principle which identifies P (problem or population), I (Intervention), C (Comparison) and O (Outcome).(10) The second step involves focused search from traditional sources and electronic database by appropriate methodology. To keep the professionals updated there are several free databases available. One must have the ability for carrying out a valid search and acquiring data, sequential arrangement of data and setting up inclusion and exclusion criteria, analysis of the included data, appreciating whether the included data can be applied for the treatment of the patient and analyzing the outcome of the applied

evidence-based management on the patient. Carrying out each and every skill in a sequential manner is a pre-requisite, falling which desirable results might not be obtained.(11)

Figure 2. Skills required for Evidence based decision making.



The clinician should be well aware of the strength of the evidence. Systematic reviews, randomized controlled trials and refined non-randomized control experiments are considered as strong evidences. Unfortunately, the huge scientific data usually confuse the clinician while choosing the best evidence. However, it should be kept in mind that not all proportions are equally valuable for making treatment selection. Retrieving the appropriate information to make patient care decisions collected from included resources are analyzed for seeing whether they are relevant to the patient and the questions being asked. Clinicians also need to analyze about the outcomes this applied evidence-based treatment procedure that has been planned for management will have on the patient.

Source of evidence to conduct an evidence-based search

There are two types of sources from where evidences can be collected, primary and secondary. Primary derivation of information are indigenous articles published in scientific journals. The next level or secondary information sources are synthesized publications of the primary sources. Systematic reviews, narrative reviews, comprehensive reviews, evidence-based journals, clinical practice guidelines and protocols published on databases and websites of several medical and dental organizations are the prominent secondary sources. Nevertheless, the clinician should make themselves familiar with the tools and features of the database for the ease of conducting search procedure.

Achievements of Evidence based decision making in dentistry

With each passing day, new techniques and treatment modalities are being added into the mainstream. There has been a lot of advancement in dental treatments with evolving human civilization. Few decades back, an offending tooth which mostly required extraction can now be preserved in its natural habitat without any complication using procedures like root canal treatment, post and core methods or osseous surgeries.(12) Replacement of the natural teeth with an almost analogue implant, is not more a dream. Patients have been benefited in a lot of ways due to implementation of new procedures and newly adapted dental treatments have been more readily acceptable by people.(13) All these have been possible, only because of adaptation of the dental surgeons to newly developed treatment methods. And these new technical procedures as well as their effectiveness have been easily available to the dentists because studies related to them are being uploaded into the easily accessible databases.

LIMITATIONS OF EVIDENCE BASED DECISION MAKING

Evidence based decision making can also have its own limitations. Considering various options and taking into light opinion of other experts is acceptable, but, hanging on entirely into their management strategy is inappropriate. In accordance with separate racial groups, age groups, gender and ethnicity, different drugs and surgical procedures can have different denouement. Certain treatments that have

shown positive response in some group of people may not show the same response in other groups. Practicing evidence-based decision-making in-patient care requires development of skill, failing which unwanted complications might arise in future. Evidence based decision making is often misinterpreted as clinical research and promotes a cookbook approach in strategizing patient care. In fact, the paucity of evidence that evidence-based decision making actually worked in patient care limit its application.(14)

FUTURISTIC APPROACH

Each and every medical practitioner should be encouraged for maneuvering evidence-based decision making in their regular schedule so that they can efficiently skim information out the vast data warehouse as well as correctly analyze it, and implement in their regular patient care practices. Planning a treatment strategy on the basis of evidences is definitely appreciable, but a facility should also be created on the databases regarding easy intimation of review of the clinician and patient management based on various evidences. synthesizing evidence can be integrated in the curriculum of every medical, dental and paramedical courses. (15)

CONCLUSION

Evidences regarding various treatments and situations in medical health care can only be available if the process of mapping out evidence is carried out with utmost zeal and confidence by each and every member of the medical fraternity. Along with treating patients, publishing each and every procedure that has been carried out, starting from reporting of the patient to the health care facility till rendering treatment along with follow up details needs to be updated on the database regularly. With advancement in new era scientific technology, carrying out a scientific research work or publishing a study has been very untroubled as it was two to three decades ago. Studies regarding usefulness of the treatment provided and the outcomes achieved, should be encouraged in each and every health care system, so as to make the concept of evidence-based decision making an accomplishment.

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