

Evidence-based Drug Dentistry Resource: New Initiative Project in Saudi Arabia

Yousef Ahmed Alomi*  BSc.

Pharm, MSc. Clin Pharm, BCPS, BCNSP, DiBA, CDE
Critical Care Clinical Pharmacists TPN
Clinical Pharmacist, Freelancer Business
Planner, Content Editor, and Data Analyst,
Riyadh, SAUDI ARABIA.

Hanin Sumaydan Saleam Aljohani
Ministry of Health, Riyadh, SAUDI ARABIA.

Arub Abdullah Batil Albatil
Majmaah University, College of Dentistry
Faculty of Dentistry at Al Zulfi Riyadh,
SAUDI ARABIA.

Correspondence:

Dr. Yousef Ahmed Alomi, BSc. Pharm,
MSc. Clin Pharm, BCPS, BCNSP, DiBA, CDE
Critical Care Clinical Pharmacists
TPN Clinical Pharmacist, Freelancer
Business Planner, Content Editor, and
Data Analyst, P.O.BOX 100, Riyadh
11392, Riyadh, SAUDI ARABIA.

Phone no: +966504417712
E-mail: yalomi@gmail.com

Received: 20-12-2020

Approved: 29-2-2021

Copyright: © the author(s), publisher and licensee Pharmacology, Toxicology and Biomedical Reports. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

This is an open access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 License

Access this article online



www.ptbreports.org

DOI:
10.5530/PTB.2021.7.12

ABSTRACT

Objectives: Evidence-based dentistry is an existing practice in the dental care. Evidence-based dental medications play a grave part in this field. The reconnoiter of evidence-based dental drug information resources is swotted in this topic. **Methods:** It is a chronicle review of evidence-based dentistry of drug information resources. The literature had been examined through PubMed and Medline from the 1960s to 2021s. All types of literature encompassed. If not existed, the textbook of drug information will be designed. The project is defined through market analysis and SWOT tools. The team and cost management will be deliberated. Quality management and risk factors will be involved in the project. The list of evidence-based dentistry discovers literature coverage, frequency of updating, type of publications online or applications, and responsible publisher. **Results:** There are more than twenty evidence-based dentistry drug information resources were nominated. There are numerous types of resources, including free-of-charge evidence-based. It contained of collecting the primary literature and evidence-based dental guidelines. Some resources had a collection of meta-analysis and systemic review literature with a paid subscription. Other comprehensive collection of journal publications includes from the USA and European journals. Additional drug information resources through a comprehensive search engine of all evidence-based dental drug information resources. The choice of evidence-based dentistry is based on numerous factors debated in the topic. **Conclusion:** Evidence-based dentistry with an emphasis on drug information resources connected issues is a present part of dental practice. Therefore, the implementation of the project is mandatory at the healthcare organizations in the dental care. **Key words:** Evidence-based, Drug, Dentistry, Resources, Saudi Arabia.

INTRODUCTION

Evidence-based medicine is perilous and measured an essential tool employed in the healthcare practice. Each healthcare provider had an evidence-based field, counting evidence-based dentistry, evidence-based nursing, and evidence-based pharmacy. The evidence-based tools necessity specific drug information references or resources. Those references are applied to implement evidence-based knowledge and practice in the healthcare field. Those references came as textbooks, online or website, or mobile applications. All evidence-based drug information resources are a portion of evidence-based medicine. The dentists among healthcare professionals exploited evidence-based medications in dental care. Failing to provide precise drug information may have numerous negative consequences. It is projected that one-third to half of all drugs employed worldwide are thrown away, posing a financial and health danger.¹ Also, the center offers an in-depth, unbiased source of critical drug knowledge; to meet the needs of practicing physicians, pharmacists, and other health care practitioners. Moreover, financial and legal interests make the pharmacist's position more protuberant in society and culture to defend the patient's health.² Unfortunately, the knowledge of evidence-based drug information resources was intolerable.³ As a result, a literature review of evidence-based dentistry accenting drug information resources is highly suggested. Many studies conversed EBD, and authors are not

acquainted with any investigation about evidence-based drug information references locally or the Middle East.⁴ The goal of the current review is to reconnoiter the evidence-based dental drug information resources.

METHODS

It is a literature review of drug information references website for the dentist. Instead, drug information resource websites are used during the dental care. The PubMed search includes drug information resources website and the dentist or drug information resources website and dentistry or drug information references website. The word is employed as a general term, not a subject term. The search comprised all types of studies Clinical Study, Clinical Trial, Clinical Trial, Phase I, Clinical Trial, Phase II, Clinical Trial, Phase III, Clinical Trial, Phase IV, Controlled Clinical Trial, Meta-Analysis, Observational Study, Practice Guideline, Randomized Controlled Trial, Review, and Systematic Review. The searching date from 1985 to May 2021. The PubMed search words counting as follows:

Evidence-based Dental Drug Information Filters: Full Text, Humans, English

((“evidence”[All Fields] OR “evidences”[All Fields] OR “evident”[All Fields] OR “evidently”[All Fields]) AND (“based”[All

Fields] OR “basing”[All Fields]) AND (“dental health services”[MeSH Terms] OR (“dental”[All Fields] AND “health”[All Fields] AND “services”[All Fields]) OR “dental health services”[All Fields] OR “dental”[All Fields] OR “dentally”[All Fields] OR “dentals”[All Fields]) AND “drug”[All Fields] AND (“inform”[All Fields] OR “informal”[All Fields] OR “informality”[All Fields] OR “informally”[All Fields] OR “informant”[All Fields] OR “informants”[All Fields] OR “informant s”[All Fields] OR “informants”[All Fields] OR “information”[All Fields] OR “information s”[All Fields] OR “informational”[All Fields] OR “information”[All Fields] OR “informative”[All Fields] OR “informatively”[All Fields] OR “informativeness”[All Fields] OR “informativity”[All Fields] OR “informed”[All Fields] OR “informer”[All Fields] OR “informers”[All Fields] OR “informing”[All Fields] OR “informs”[All Fields])) AND ((ft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Evidence-based Dentist Drug Information Filters: Full Text, Humans, English

((“evidence”[All Fields] OR “evidences”[All Fields] OR “evident”[All Fields] OR “evidently”[All Fields]) AND (“based”[All Fields] OR “basing”[All Fields]) AND (“dentist s”[All Fields] OR “dentists”[MeSH Terms] OR “dentists”[All Fields] OR “dentist”[All Fields]) AND “drug”[All Fields] AND (“inform”[All Fields] OR “informal”[All Fields] OR “informality”[All Fields] OR “informally”[All Fields] OR “informant”[All Fields] OR “informants”[All Fields] OR “informants”[All Fields] OR “information”[All Fields] OR “information”[All Fields] OR “informational”[All Fields] OR “informations”[All Fields] OR “informative”[All Fields] OR “informatively”[All Fields] OR “informativeness”[All Fields] OR “informativity”[All Fields] OR “informed”[All Fields] OR “informer”[All Fields] OR “informers”[All Fields] OR “informing”[All Fields] OR “informs”[All Fields])) AND ((ft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Evidence-based Dentistry Drug Information Filters: Full Text, Humans, English

((“evidence based dentistry”[MeSH Terms] OR (“evidence based”[All Fields] AND “dentistry”[All Fields]) OR “evidence based dentistry”[All Fields] OR (“evidence”[All Fields] AND “based”[All Fields] AND “dentistry”[All Fields]) OR “evidence based dentistry”[All Fields]) AND “drug”[All Fields] AND (“inform”[All Fields] OR “informal”[All Fields] OR “informality”[All Fields] OR “informally”[All Fields] OR “informant”[All Fields] OR “informants”[All Fields] OR “informants”[All Fields] OR “information”[All Fields] OR “information”[All Fields] OR “informational”[All Fields] OR “informations”[All Fields] OR “informative”[All Fields] OR “informatively”[All Fields] OR “informativeness”[All Fields] OR “informativity”[All Fields] OR “informed”[All Fields] OR “informer”[All Fields] OR “informers”[All Fields] OR “informing”[All Fields] OR “informs”[All Fields])) AND ((ft[Filter]) AND (humans[Filter]) AND (english[Filter]))

As a result, no studies came up with it. Another search had been done if pharmacy textbooks of drug information and some google searching engine. The authors employed drug information resources as websites or drug information resources websites for dental medication inquiries and secondary or tertiary drug information resources. The author intended some parameters to recapitulate the drug information references suitable for the dental care. Each resource summary entailed of name of resource, content, inquiries answered, type of resources, number of medications or journal covered, frequently update, last edition, price, subscription. This also includes publisher, manual book, online version, website address, application type, usage of dental student recommendations, usage of the general dental practitioner, usage of specialized or consultant dentist and dentistry specialties.

RESULTS

Assessment of Needs

Drug information resources deliver clinicians with safer medications and play a vivacious role in improving drug safety. The drug information resources should be well equipped with all the essential resources for providing comprehensive, recent, and up-to-date information on medication queries.⁵ Corresponding to the augmented acceptance of drug use in dental treatment, dentists need to be warned to potential problems resulting from the drug therapy. The practice of dentistry today has advanced in pharmacology and toxicology. It is no fortune that dental school curricula revisions include noteworthy teaching time dedicated to studying drugs and their application.⁶ The effectual use of a drug information website is indispensable for all healthcare providers regardless of their practice site. The provision of balanced information can help in weakening the occurrence of drug-related complications and pledge drug safety to an extent.⁷⁻⁹

These people come to a wide collection of medical conditions and drug treatments, many of which interact with the therapeutic dental milieu. The dentist staff should supply the wanted drug-use information in these areas. One of the conservative methods of new project assessment is a SWOT analysis. It means strengths, weaknesses, opportunities, and threats of the project.¹⁰ Evaluating each resource as accessible earlier may be time-consuming. Often, the responses are desired quickly, which may force one to rely only on the top results, leading to decisions based on a snapshot of evidence. The weaknesses of this project are overlooking this service, no education or guidance in the usage of the drug information center, difficulties in supporting and funding these services. The threats to this project includes no dentist concerned in this field and the plan.

Project Description

The scope of the existing topic is to reconnoiter evidence-based dentistry highlighting the drug information resources. The project’s vision is to grasp the best with high-quality, evidence-based dentistry drug information at realistic prices. The mission of the project is to deliver cost-effective drug information resources for evidence-based dentistry. In addition, the project intentions to declare the updated evidence-based dentistry drug information’s references, offer education and training for a dental practitioner, and evaluate the clinical and economic impact of evidence-based dentistry drug information’s resources. The project wants to be organized by the management team; the experts in the team should accomplish the dentist drug information center: the team contains of clinical pharmacists, expert pharmacists, and pharmacy technician is skilled in drug information, dentists, dentists assistant, and nursing. The team should educate and train the dentist and dentist’s assistant in drug information-related issues. The team should set up new policies and procedures connected to the drug information services, monitor the program’s implementation, and measure the outcome with the economic influence of the new services. One of the essential things is to implement the drug information services (financial budget). The budget should reflect cost-related issues, counting education and training. Besides, the cost of equipment is desirable for the preparation and the management team meetings. The defined budget should be observed throughout the project period implementation. The dentist staff wants to appear several courses on searching drug information resources and how to pick the fitting references for any dental drug information inquiries. Besides that, the education on drug information centers is stability research. Education and training are vital for dentist staff. Additional educational course needs for administrative officers. It contains managing team and higher administration and coverage of health insurance. The projected demand to effort on dental quality management tools called Balance Scored Card as key performance indicators about dental drug

Table 1: Evidence-Based Dental Drug information resources part 1. 4,16,21

Scope and coverage	PubMed/Medline ^{22,23}	National Institute for health and care excellence (NIC) ²⁴	National comprehensive cancer network (NCCN) ²⁵	EMBASE ^{26,27}	Clinical Key ²⁸	DynaMed ²⁹	Evidence-based Medicine database ³⁰	Up-To-Date ³¹	Cochrane library ³²	Natural medicine comprehensive database ³³	Trip Medical Database ³⁴	Database of Abstracts of Reviews of Effects (DARE) ^{35,36}	clinical.trial.gov ³⁷
Frequently Update:	more than 26 million references, 5,200 journals in medicine and 7,400 in PubMed	Evidence-based medicine guidelines	Evidence-based therapeutic oncology guidelines	It covered literature, with 37.2 million+ records from 8,100 published journals. It includes 2,900+ journals that MEDLINE does not cover.	It evidence-based answers cases. It provides thousands of books, journals, videos, and photos written by most medicine specialty.	It is a reference to answer the evidence-based clinical question	It is a collection of PubMed, Embase, Medline, Cochrane library, CINAHL (at EBSCOhost),	more than 430 journals and 6000 drugs	8325 reviews, 7,890 journals	It included information safety, effectiveness, and interactions. It included Over evidence-based 1,400 natural medicine monographs	It had 100,000+ extra systematic reviews and links to millions of full-text articles	It contained over 35,000 systemic reviews, over 17,000 economic evaluations of health and social care interventions	It included ongoing and finished clinical trail around the world. It explores 380,943 research USA and in 220 countries around the world
According to the updated and last published year													
Last edition:	weekly	Automatic	continuously	weekly	Drugs are daily, journals quarterly or biweekly, books every 2-3 years.	Automatic	Automatic	Automatic	Monthly	Daily	Monthly	Automatic	Daily
Price:	Free	Free	Free	paid	Individual Institutions	Individual Institutions	Free individual	Individual Institutions	Individual Institutions	Individual Institutions	Individual Institutions	Individual Institutions	Individual Institutions
Subscription:	Individual	individual	individual	Institutions	Individual Institutions	Institutions	individual	Individual Institutions	Individual Institutions	Individual Institutions	Individual Institutions	Individual Institutions	Individual Institutions
Manual book:	No	No	No	No	No	No	No	No	Cochrane Handbook for Systematic Reviews of Interventions (38)	No	No	No	No
Website:	yes	Yes	Yes or No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes	Yes	Yes
Application:	Yes	no	Yes	No	Yes	Yes	No	Yes	Yes	Mo	No	No	No
Publisher:	National Center for Biotechnology Information (NCBI).	NICE	National Comprehensive Cancer Network, Inc	Elsevier	Elsevier	EBSCO	EBSCO	Wolters Kluwer	Wiley	TRC Healthcare	Trip Database Ltd. company	the University of York Centre for Reviews and Dissemination	The US National Institutes of Health NIH

Table 2: EEvidence-Based Dental Drug information resources part 2. 4,16-21

Scope and coverage	ACP Journal Club contained the latest evidence-based information relevant to internal medicine and its subspecialties. Reviewing over 120 leading medical journals	CINAHL ⁴¹	It is a wide range of topics, including nursing, biomedicine, librarianship, alternative/complementary medicine, consumer health, and 17 allied health disciplines. It includes full-text 1,300 journals, legal cases, clinical innovations, research instruments, and clinical trials.	Ovid ⁴²	It includes more than 6,000 eBooks and 1,400 peer-reviewed journals of various healthcare specialties and dental among them	EBSCO ^{43,44}	<i>It had a search engine of research databases, e-journals, magazine, and e-books</i>	science direct ⁴⁵	It had 3,147 publications of books and journals	Springer database ⁴⁶	It had more than 2,900 journals, 300,000 books for various specialties	Sage database ⁴⁷	It included 900 journals and over 800 books and humanities, social sciences, and medicine.	ProQuest ⁴⁸	It had unlimited, simultaneous access to 202,000+ titles, 13,000 non-English titles, and 180+University Press publishers	Wiley online library ⁴⁹	It contained 2,600 + journals, 22,000 + electronic textbooks	Web of Science ⁵⁰	It had 34,358 journals + books, proceedings, patents, and data sets	Scopus ⁵¹	It contains 35,000 of these peer-reviewed publications. Scopus covers various formats (books, journals, conference papers, etc.) in the fields of science,	BMJ ⁵²	It is a collection of more than 70 medical and allied science titles	Google Scholar ⁵³	It is unlimited search engine included all type of publication	Microsoft academic ⁵⁴	238,342,772 publications, 48,872 journals	Read by QxMD ⁵⁵	It contained more than 1000 topic from Medline and PubMed journals	Automatic	
Frequently Update:	Monthly	Weekly	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Daily	Automatic		
According to the updated and last published year																															
Last edition:	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	Paid	
Subscription:	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Institutions	Free individual
Manual book:	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Website:	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Application:	ACP Clinical Guidelines	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Publisher:	-	EBSCO, Inc.	Wolters Kluwer	EBSCO, Inc.	Springer nature	SAGE Publications	ProQuest	Wiley	Clarivate Analytics	Elsevier	BMJ Publishing Group Ltd	Microsoft	Google	Elsevier	Read by QxMD																

Table 3: Practice of the Evidence-Based Dental Drug information resources. 4,16-21

Name of resource	Content	Inquiries answered	Usage of dental student	Use of general dental practitioner	Usage of specialized or consultant dentist	Reference
MEDLINE/PUBMED	journal citation for biomedical literature and entrance to MEDLINE database, free assets aiming to enhance health worldwide,	The articles, publications about biomedicine, health science, bioengineering, chemical, and biological science, scholarly papers based, magazine and newspaper also included, and PubMed allows free search and information retrieval from sources such as Medline, PubMed, Central, and Bookshelf	Needs to be available for universities and academic institutions	Recommended	Recommended	22,23
National Institute for health and care excellence (NICE)	public advice and information in health using informative guidance	It accesses several Scientific-based health advice, professionally orientated guidelines, quality levels, and related economic issues	Needs to be available for universities and academic institutions	Recommended	Recommended	24
National comprehensive cancer network (NCCN)	Information, news, research, and education in cancer therapy, diagnosis, and related issues	Protocols in treating (medications), managing, and prevention all type of cancer, including oral cancer cavity	Needs to be available for universities and academic institutions	Recommended	Recommended	25
EMBASE	It is a biomedical and pharmacological literature database	It contained the abstracts derived from medical conferences or journals included or non-included by Medline in the biomedical field, drug, and medical devices. They were gaining access to old records even back in 1947. It had systemic reviews for medical conditions, discoveries for medical devices and Drugs, efficiency, and toxicity. Drug interaction, quality, and adverse events studies	Needs to be available for universities and academic institutions	Recommended	Recommended	26,27
ClinicalKey	It is an evidence-based report sourced for the student, nurses, pharmacists, dentist, and physicians	Most of the diseases with evidence textbook or journal or videos and photos, medications,	Needs to be available for universities and academic institutions	Recommended	Recommended	28
DynaMed	It is a research tool for evidence among various specialties. It included medication collaborated with IBM Micromedex	Clinical evidence and guidelines, drug dosing, medication safety, patient education, and toxicology	Needs to be available for universities and academic institutions	Recommended	Recommended	29
Evidence-based Medicine database	It a considerable collection database for clinical trials, studies, and literature derived from several journals and sites	It can find search result injuring the Etiology, Diagnosis, Therapy (default), Prognosis, Clinical prediction guides for a particular disease or condition, Medline has given narrower results on a specific topic, including its Therapy, Prognosis, Review, Qualitative, and Causation. Systematic reviews, coherence reviews, and clinical trials are accessible through the Cochrane library. Evidence-based articles, research reviews, and research obtained from CINAHL (at EBSCOhost).	Needs to be available for universities and academic institutions	Recommended	Recommended	30
Up-To-Date	Peer-Reviewed database that helps healthcare providers, including dentists, with an optimal decision with better outcomes for their patients	Its recent updates in the medical and dental management protocols, patient education articles about the therapy and health beside society instructions. It connected with Lexi-Drug resources for a complete monograph	Needs to be available for universities and academic institutions	Recommended	Recommended	31

continued...

Name of resource	Content	Inquiries answered	Usage of dental student	Use of general dental practitioner	Usage of specialized or consultant dentist	Reference
Cochrane library	systematic reviews in all Medical care and strategies research published in Cochrane library	Systematic reviews studies of the medical intervention advantages and disadvantages, Diagnostic tool efficiency and accuracy, methodological reviews, reviews of intervention standards, and outcomes of a specific disease and treatment reviews.	Needs to be available for universities and academic institutions	Recommended	Recommended	32
Natural medicine comprehensive database	Evidence-based answers and methods about natural medicine, including systematically studying literature, crucially weigh the benefits, valuing the more helpful information in the clinical and practical aspects.	It evidence-based natural or herbal medicine for dental care and other healthcare specialties	Needs to be available for universities and academic institutions	Recommended	Recommended	33
Trip Medical Database	Clinical search sources to discover evidence-based researches	A wide range of medical topics with clinically-based analysis and evidence-based summaries	Needs to be available for universities and academic institutions	Recommended	Recommended	34
Database of Abstracts of Reviews of Effects (DARE)	It a critical quality systemic reviews	It a wide range of systemic review on medical and healthcare care interventions with health economics and health technology assessment	Needs to be available for universities and academic institutions	Recommended	Recommended	35,36
Clinical trail.gov	resources allowing easy access to open and closed studies for both the public and health professionals in multiple medical fields	It includes the number of the patient included or excluded from the trial, full detail pf trial methodology	Needs to be available for universities and academic institutions	Recommended	Recommended	37
ACP Journal Club	It is evidence-based Medical information and sources maintained and organized By a group of diverse specialists in medicine	It included evidence-based guidelines, clinical information for recent updates and advances in the medical field from a wide range of resources	Needs to be available for universities and academic institutions	Recommended	Recommended	39,40,56
CINAHL Database	It gives access to health care textbooks, nursing dissertations, selected conference proceedings, standards of practice, audiovisuals, and book chapters.	fill text journals, searchable citations resources, evidence-based papers, and lessons for many medical specialties, dental, and pathologies but focused mainly on nursing resources,	Needs to be available for universities and academic institutions	Recommended	Recommended	41
Ovid	It is a search engine of various medical and allied healthcare specialties e-books and journals with Medline search	To find a full-text article about medical specialties, including dental practice and related medications	Needs to be available for universities and academic institutions	Recommended	Recommended	42
EBSCO	It is providers for various journals, books, medical and dental researches databases, audiobooks and magazines, and an online library	It a considerable search engine of various primary or tertiary resources of dental drug information references related issues	Needs to be available for universities and academic institutions	Recommended	Recommended	43,44
Science direct	It is a resource of peer review literature and e-books, articles, full-texts	For medical, social, physical science, for open access for full texts and easier narrowed searching results for a better time and searched efficiency in dental practice, including medications	Needs to be available for universities and academic institutions	Recommended	Recommended	45

continued...

Table 3: Cont'd.

Name of resource	Content	Inquiries answered	Usage of dental student	Use of general dental practitioner	Usage of specialized or consultant dentist	Reference
Springer database	It is a search engine that contained e-journals, textbooks, guidelines in health science, and life science	It offers Information about theoretical and practice for medical, dental, and other healthcare professionals, including dental medication-related issues.	Needs to be available for universities and academic institutions	Recommended	Recommended	46
sage database	It had journals, books, and research tools and resources in several science specialties	It had primary and territory references about various specialties including dentist, and medication used in dental care	Needs to be available for universities and academic institutions	Recommended	Recommended	47
ProQuest	It is a collection of e-journal, e-books, postgraduates master and doctorate thesis in various medical health sciences	It is resources of collection of postgraduates thesis in medical and dental and allied healthcare specialties	Needs to be available for universities and academic institutions	Recommended	Recommended	48
Wiley online library	Researches, books, and journals in multi-specialties aspects and subjects	new updates and news, research publication, submitting a scientific paper, libraries research database, and books emphasizing the dental sciences and related medication	Needs to be available for universities and academic institutions	Recommended	Recommended	49
Web of science	It is a database for comprehensive literature, researches, journals and reference work, and authors and relation citations	Citation indices in health science, social, medical, dental, health sciences content in addition to textbooks and journals	Needs to be available for universities and academic institutions	Recommended	Recommended	50
Scopus	It is a database of publication and citation references, and related citation	books, journals, open access, and researches in science of health, social and physical sciences	Needs to be available for universities and academic institutions	Recommended	Recommended	51
BMJ	It contained health news, researches, articles, clinical reviews, and education tools	research strategies and guidelines, journal topic, and evidence-based medicine or dental and allied healthcare specialties	Needs to be available for universities and academic institutions	Recommended	Recommended	52
Google Scholar	A searching database that gives you easy access to hundreds of researches, articles, papers, and books from many academic resources, researchers or writers.	desired literature and navigate other works from the same publishers, stay updated with the latest publications. (57)	Needs to be available for universities and academic institutions	Recommended	Recommended	53
Microsoft academic	It can utilize advanced tools to extensive search to obtain any dental articles, researches, and literature	It has the utility dental resources, including medications about institutions, authors, and research areas, and it has access to more wide searching throw conferences and publication events.	Needs to be available for universities and academic institutions	Recommended	Recommended	54
Read by QxMD	It is an application searching engine with specific medical, dental, and healthcare journals	To find updated dental literature or medication studies with full-text articles	Needs to be available for universities and academic institutions	Recommended	Recommended	55

information resources websites with multiple directions, counting the customer as dentists, finance, internal process, education, and innovation.¹¹ Risks includes in the current project: budget, scope, personnel, scheduled, technical, and quality risks. This project might be uncovered to personnel risk due to the shortage of expert dentists. It might also be exposed to budget risk. The demand of a budget includes education and training of the dentist staff with multiple experiences. This project might also be exposed to technical risks such as material is not being accessible. Quality risks are met due to the untrained dentist being available.^{12,13} More than twenty-eight evidence-based dentistry drug information resources were nominated (Table 1, 2 and 3).

DISCUSSION

Over twenty years ago of beginning evidence-based medicine. Evidence-based specialties like evidence-based dysentery followed them.¹⁴ All dental practitioners need to implement the concept. However, the dentist requests some resources with importance on drug information resources. As a result, the existing review of dental evidence-based drug information references is defensible. There are many EBD for the drug information. Some of the references are free of variations, and any dental student or any level of dental practitioner can use them like PubMed/Medline (which is more frequently used by the dentist),¹⁵ Nice, and NCCN. Other paid resources look like them with general review and deliberated the medical or dental topics based on evidence with recorded recommendations; it is called update (which is less often used by the dentist).¹⁵ The PubMed had probing facilities for clinical studies and all publications for all healthcare-related issues, counting drug information. While the Nice and NCCN had EBD guidelines planned by numerous scientific committees and non-useful for primary literature, they are free. It measured the Nice produce medical and dental EBD guidelines, while NCCN offers EBD guidelines about cancer therapy for oral cavity and other oncology conditions and linked management.^{24,25} Some EBD databases comprised a systemic review of dental topics, counting dental medication-related issues like Cochrane library, Trip, and Dare. While Trip and Dare more emphasis on cost or PharmacoEconomic for dental medications.³⁴⁻³⁶ Most evidence-based dentistry resources came as a assortment of hundreds or thousands of journals with one searching engine, Ovid, EBSCO, Sage, Springer, Science Direct, Proquest, Willy online library, web of science, and Scopus.^{42-47,49-51} Those databases delimited healthcare information, including dental drug information based on evidence. All of them are paid and want for organizations subscription, not individual.

Two search engines are free of charge and pursuit for all evidence-based dentistry including peer-reviewed primary literature, evidence-based guidelines, EBD textbooks, and masters or doctorate thesis. They are reachable to all dental staff (students, general practitioners, specialists, and consultants); by reviewing previous EBD, the database should be obtainable at healthcare or dental institutions, emphasizing dental college. Five EBD should make accessible all the time. It encompassed PubMed, Nice, NCCN, Google Scholar, and Microsoft Academic.^{24,25,53,54} Additionally, the collection of meta-analysis and systemic review studies can be presented by abstract only, free. It should make reachable to all dental specialties. Buying a journal collection depends on several journals, dental specialties, and the USA or European journals. It might get the science director springer, sage, or Willy. Alternatively, it better to choose the web of science and Scopus that has you composed both the USA and European publications. There is one poised might controlled on both sides like EBSCO. All those subscriptions should be organizations based, not individual subscriptions. Some of the EBM resources came as mobile applications (Table 1 and 2). However, other EBM came only as applications like read by QxMD. It is an application probing engine through the collection of journal resemble Ovid, EBSCO, Sage, Springer, Science Direct, Proquest and Willy online library.⁵⁵

CONCLUSION

The dentists use numerous dental drug resources employed in practice. One of the critical resources was evidence-based dentistry with an emphasis on dental medication information. Some of the resources usually used in the practice which obtainable for all dentists. Others need a subscription. Dental healthcare organizations need implementing the current concept through the local medical library. The dentists should be acquainted with standard evidence-based dentistry drug information references and usage in dental care. As a result, education and training at dental care organizations are recommended to recover the knowledge and practice of dental evidence-based dentistry drug information resources.

ABBREVIATIONS

KSA: Kingdom of Saudi Arabia; **SWOT:** Strengths, Weaknesses, Opportunities, and Threats; **EBD:** Evidence Based Dentistry; **NICE:** National Institute for health and care excellence; **NCCN:** National Comprehensive Cancer Network; **DARE:** Database of Abstracts of Reviews of Effects; **ACP:** American College of Physicians; **BMJ:** British Medical Journals.

ACKNOWLEDGEMENT

None.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

Funding

None

Consent for Publications

Informed consent was obtained from all the participants

Ethical Approval

This research was exempted from research and ethical committee or an institutional review board (IRB) approval.

<https://www.hhs.gov/ohrp/regulations-and-policy/decision-charts-2018/index.html>

ORCID ID

Yousef Ahmed Alomi  <https://orcid.org/0000-0003-1381-628X>

REFERENCES

- Mason J. Medicines optimisation - it's everybody's business. *Prescriber*. 2013 Apr 5;24(7):40-2. doi: 10.1002/psb.1038.
- Chauhan N, Moin S, Pandey A, Mittal A, Bajaj U. Indian aspects of drug information resources and impact of drug information centre on community. *J Adv Pharm Technol Res*. 2013;4(2):84-93. doi: 10.4103/2231-4040.111524, PMID 23833748. Available from: /pmc/articles/ PMC3696227.
- Alomi YA, Alshammari AM, Saleam Aljohani HS. Dentist's knowledge of evidence-based dentistry and digital applications resources in Saudi Arabia. *PTB Reports*. 2021;7(1):23-7. doi: 10.5530/PTB.2021.7.5.
- Frantsve-Hawley J. Evidence locator: sources of evidence-based dentistry information. *J Evid Based Dent Pract*. 2008 Sep;8(3):133-8. doi: 10.1016/j.jebdp.2008.05.013, PMID 18783754.
- Palaian S, Mishra P, Shankar PR, Bista D, Purwar B. Contribution of the regional drug information center towards drug safety. *JNMA J Nepal Med Assoc*. 2006;45(161):216-8. PMID 17160101.
- Koehler HM. Sources of biomedical information in the dental literature. *Drug Inf J*. 1975;9(1):30-1. doi: 10.1177/009286157500900105, PMID 10236954.
- Vassilev ZP, Chu AF, Ruck B, Adams EH, Marcus SM. Evaluation of adverse drug reactions reported to a poison control center between 2000 and 2007. *Am J Health Syst Pharm*. 2009;66(5):481-7. doi: 10.2146/ajhp080267, PMID 19233996.
- Entezari-Maleki T, Taraz M, Javadi MR, Hajimiri MH, Eslami K, Karimzadeh I, Esmaili M, Gholami K. A two-year utilization of the pharmacist-operated drug information center in Iran. *J Res Pharm Pract*. 2014;3(4):117-22. doi:

- 10.4103/2279-042X.145368, PMID 25535619.
9. Hands D, Stephens M, Brown D. A systematic review of the clinical and economic impact of drug information services on patient outcome. *Pharm World Sci.* 2002;24(4):132-8. doi: 10.1023/a:1019573118419, PMID 12227245.
 10. Helms MM, Nixon J. Exploring SWOT analysis – where are we now?: a review of academic research from the last decade. *Journal of Strategy and Mgt.* 2010;3(3):215-51. doi: 10.1108/17554251011064837.
 11. Enwere EN, Keating EA, Weber RJ. Balanced scorecards as a tool for developing patient-centered pharmacy services. *Hosp Pharm.* 2014;49(6):579-84. doi: 10.1310/hpj4906-579, PMID 24958976.
 12. Ray S. The risk management process in project management - ProjectManager.com [internet]; 2017. Project Manager [cited Mar 15 2020]. Available from: <https://www.projectmanager.com/blog/risk-management-process-steps>.
 13. Kaplan RS, Mikes A. Managing risks: A new framework [internet]; 2012. Harvard Business Review [cited Mar 15 2020]. Available from: <https://hbr.org/2012/06/managing-risks-a-new-framework>.
 14. Chiappelli F. Evidence-based dentistry: two decades and beyond. *J Evid Based Dent Pract.* 2019;19(1):7-16. doi: 10.1016/j.jebdp.2018.05.001, PMID 30926103.
 15. Alomi YA, Alshammari AM, Aljohani HSS. Dentist's knowledge of essential drug information resources in Saudi Arabia. *PTB Reports.* 2021;7(1):17-22. doi: 10.5530/PTB.2021.74.
 16. Fineout-Overholt E, Berryman DR, Hofstetter S, Sollenberger J. Finding relevant evidence to answer clinical questions. *Evid-Based Pract Nurs Healthc.* 2011;40-70.
 17. Sutherland SE. Evidence-based dentistry: Part II. Searching for answers to clinical questions: how to use Medline. *J Can Dent Assoc.* 2001;67(5):277-80. PMID 11398391.
 18. Sutherland SE, Walker S. Evidence-based dentistry: Part III. Searching for answers to clinical questions: finding evidence on the Internet. *J Can Dent Assoc.* 2001;67(6):320-3. PMID 11450294.
 19. Malone PM, Kier KL, Stanovich JE. Drug information: A Guide for pharmacists. 3rd ed; 2006.1-877.
 20. Gabay M. The clinical practice of drug. Information. 2016.1-539
 21. Kier KL, Goldwire M. Drug information resources and literature retrieval. 2018. 619-45.
 22. PubMed [internet] [cited Mar 15 2021]. Available from: <https://pubmed.ncbi.nlm.nih.gov/>.
 23. About Medline® and PubMed®: the resources guide [internet] [cited Mar 15 2021]. Available from: <https://www.nlm.nih.gov/bsd/pmresources.html>.
 24. NICE, The National Institute for Health and Care Excellence [internet] [cited Mar 15 2021]. Available from: <https://www.nice.org.uk/>.
 25. NCCN. Evidence-based cancer guidelines, oncology drug compendium, oncology continuing medical education [internet] [cited Mar 15 2021]. Available from: <https://www.nccn.org/>.
 26. About Embase - Biomedical research. Elsevier [internet] [cited Mar 15 2021]. Available from: <https://www.elsevier.com/solutions/embase-biomedical-research>.
 27. Embase coverage and content. Elsevier [internet] [cited Mar 15 2021]. Available from: <https://www.elsevier.com/solutions/embase-biomedical-research/embase-coverage-and-content>.
 28. ClinicalKey. Lead with answers [internet] [cited Mar 16 2021]. Available from: <https://www.clinicalkey.com/#/>
 29. Dyna. Med [internet] [cited Jun 21 2021]. Available from: <https://www.dynamed.com/>.
 30. Core EBM. Databases - evidence-based medicine - GSU library research guides at Georgia State University [internet] [cited Mar 15 2021]. Available from: <https://research.library.gsu.edu/c.php?g=115558&p=751758>.
 31. UpToDate [internet] [cited Mar 15 2021]. Available from: <https://www.uptodate.com/contents/search>.
 32. Cochrane Library [internet] [cited Mar 15 2021]. Available from: <https://www.cochranelibrary.com/cdsr/reviews>.
 33. Natural Medicines Research Collaboration [internet] [cited Mar 15 2021]. Available from: <https://naturalmedicines.therapeuticresearch.com/>.
 34. Trip Medical Database [internet] [cited Mar 15 2021]. Available from: <https://www.tripdatabase.com/>.
 35. The database of abstracts of reviews of effects (DARE) [internet] [cited Mar 15 2021]. Available from: <https://www.crd.york.ac.uk/crdweb/ShowRecord.asp?ID=32004000332&ID=32004000332>.
 36. NIHR. Centre for Reviews and Dissemination - CRD Database [internet] [cited Mar 15 2021]. Available from: <https://www.crd.york.ac.uk/CRDWeb/>.
 37. ClinicalTrials.gov [internet] [cited Mar 16 2021]. Available from: <https://clinicaltrials.gov/ct2/home>.
 38. Cochrane handbook for systematic reviews of interventions | cochrane training [internet] [cited Mar 15 2021]. Available from: <https://training.cochrane.org/handbook>.
 39. Internal medicine books and textbooks. association of clinical pathologists [internet] [cited Mar 15 2021]. Available from: <https://www.acponline.org/clinical-information/journals-publications/books-from-acp>.
 40. American College of Physicians. association of clinical pathologists [internet]. Internal Medicine [cited Mar 15 2021]. Available from: <https://www.acponline.org/>.
 41. CINAHL complete. EBSCO [internet] [cited Mar 15 2021]. Available from: <https://www.ebsco.com/products/research-databases/cinahl-complete>.
 42. Ovid Database Guide [internet] [cited Mar 15 2021]. Available from: <https://ospguides.ovid.com/OSPGuides/embase.htm>.
 43. EBSCO information services [internet] [cited Mar 15 2021]. Available from: <https://www.ebsco.com/>.
 44. EBSCO apps | EBSCO apps and cloud services [internet] [cited Mar 15 2021]. Available from: <https://cloud.ebsco.com/apps>.
 45. About ScienceDirect | Premier platform for discovering peer-reviewed scientific, technical, and medical information. Elsevier [internet] [cited Mar 15 2021]. Available from: <https://www.elsevier.com/solutions/sciencedirect>.
 46. Home - Springer [Internet] [cited Mar 15 2021]. Available from: <https://link.springer.com/>.
 47. SAGE Publications Inc | Home [Internet]. [cited 2021 Mar 15]. Available from: <https://us.sagepub.com/en-us/nam>.
 48. ProQuest. Databases, EBooks and Technology for Research [cited Mar 15 2021]. Available from: <https://about.proquest.com/>.
 49. Wiley Online Library | Scientific research articles, journals, books, and reference works [Internet] [cited Mar 15 2021]. Available from: <https://onlinelibrary.wiley.com/>.
 50. Web of Science [internet] [cited Mar 15 2021]. Available from: <https://login.webofknowledge.com/error/Error?Error=IPError&PathInfo=%2F&RouterURL=https%3A%2F%2Fwww.webofknowledge.com%2F&Domain=webofknowledge.com&Src=IP&Alias=WOK5>.
 51. Scopus - Abstract and citation database. Elsevier [internet] [cited Mar 15 2021]. Available from: <https://www.elsevier.com/solutions/scopus>.
 52. The BMJ | The BMJ: leading general medical journal. Research. Educ Comment.
 53. Google Scholar [internet] [cited Mar 16 2021]. Available from: <https://scholar.google.com/schhp?hl=en>.
 54. Home | Microsoft Academic [Internet] [cited Mar 16 2021]. Available from: <https://academic.microsoft.com/home>.
 55. Read by QxMD [internet] [cited Jun 22 2021]. Available from: <https://apps.apple.com/sa/app/read-by-qxmd/id574041839?l=ar>.
 56. Clinical resources and products | adult immunization. association of clinical pathologists [internet] [cited Mar 15 2021]. Available from: <https://www.acponline.org/clinical-information/clinical-resources-products>.
 57. Google Scholar citations help [internet] [cited Mar 16 2021]. Available from: <https://scholar.google.com/intl/en/scholar/citations.html>.