Dental Drug Information Applications: New Initiative Project in Saudi Arabia

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ABSTRACT

Objectives: The dental medications information application is one of the grave elements in dental practice. Therefore, the review of the updated mobile applications of dental drug information is swotted. **Methods:** It was revitalized of the literature on the dental drug information mobile software includes the PubMed and Medline search on this topic in numerous methods. The current project of drug information applications reconnoiters through descriptions with accent on market analysis, SWOT analysis, project team, cost management, quality requirements, and risk factors linked issues. Nominated applications had been invigorated, counting the software name, coverage of the medications, frequency updating, and subscription-related. **Results:** There is no examination about dental medication's mobile applications. There is more than fifteen mobile software suitable for dental providers. The project should be realized through project management professionals tools. The choosing of dental applications includes drug information based on numerous factors, coverage of the scientific data, the level of knowledge, and cost of the subscription. The advantages and disadvantages had studied throughout. **Conclusion:** The drug information resources with mobile applications are useful and easily reachable for all dental practitioners' specialties. Therefore, the employment of the dental applications of drug information is highly suggested in dental care.
Key words: Dental, Drug, Information, Application, Saudi Arabia.

INTRODUCTION

The classification of drug information resources applied in the dental care. There are numerous types of drug information resources. It comprised textbooks, the internet or online, and mobile applications. Besides, some drug information references came as application only. The use of new applications through the android or Microsoft operating system or newly Hawaii are easier to use, more manageable to the resources, and more friendly. Several category applications have included disease diagnosis, drug reference, and literature search.[1] Few studies deliberated the knowledge assessment of drug information resources.[2] There was underutilization of dental drug information applications and rarely employ of the new applications.[2] In the coming years, more recent technology towards the mobile application system.[3,4] As a result, the discussion of the dental applications of drug information resources is in high claim. The authors were not familiar with any review about dental drug information resources in mobile applications format locally or the Middle East and the rest of the world. The aim of the current study is to declare the drug information resources in the dental care.

METHODS

It is a literature review of drug information reference applications for dentists or drug information resources websites employed during dental care. The PubMed search of drug information resources website and the dentist or drug information resources website and dentistry or drug information references website. The word is applied as a general term, not a subject term. The search encompassed 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:

Dental Application Software Drug Information Filters: Full text, Humans, English

(("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 ("applicabilities"[All Fields] OR "applicability"[All Fields] OR "application"[All Fields] OR "applications"[All Fields] OR "applicative"[All Fields]) AND ("software"[MeSH Terms] OR "software"[All Fields] OR "softwares"[All Fields] OR "softwares"[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 "informant"[All Fields] OR "informants"[All Fields] OR "information"[All Fields] OR "information"[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 ((fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Dental Application Drug Information Filters: Full text, Humans, English

(("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 ("applicabilities"[All Fields] OR "applicability"[All Fields] OR "application"[All Fields] OR "applications"[All Fields] OR "applicative"[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 "informant"[All Fields] OR "informants"[All Fields] OR "information"[All Fields] OR "information"[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 ((fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Dental Application Drug Information Filters: Full text, Humans, English

(("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 ("appl plant sci"[Journal] OR "apps"[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 "informant"[All Fields] OR "informants"[All Fields] OR "information"[All Fields] OR "information"[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 ((fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Dental Drug Information Software Filters: Full text, Humans, English

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Mobile Application Dental Drug Information Filters: Full text, Humans, English

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Mobile Phone Dental Drug Information Filters: Full text, Humans, English

(("cell phone"[MeSH Terms] OR ("cell"[All Fields] AND "phone"[All Fields]) OR "cell phone"[All Fields] OR ("mobile"[All Fields] AND "phone"[All Fields]) OR "mobile phone"[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 "informant"[All Fields] OR "informants"[All Fields] OR "information"[All Fields] OR "information"[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 ((fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Mobile Phone Dentist Drug Information Filters: Full text, Humans, English

(("cell phone"[MeSH Terms] OR ("cell"[All Fields] AND "phone"[All Fields]) OR "cell phone"[All Fields] OR ("mobile"[All Fields] AND "phone"[All Fields]) OR "mobile phone"[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 "informant"[All Fields] OR "informants"[All Fields] OR "information"[All Fields] OR "information"[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 ((fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Mobile Phone Dentistry Drug Information Filters: Full text, Humans, English

(("cell phone"[MeSH Terms] OR ("cell"[All Fields] AND "phone"[All Fields]) OR "cell phone"[All Fields] OR ("mobile"[All Fields]

AND "phone"[All Fields]) OR "mobile phone"[All Fields]) AND ("dentistry"[MeSH Terms] OR "dentistry"[All Fields] OR "dentistry s"[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 "informant"[All Fields] OR "informants"[All Fields] OR "information"[All Fields] OR "information"[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 ((fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Mobile Application Dentistry Drug Information Filters: Full text, Humans, English

(("mobile applications"[MeSH Terms] OR ("mobile"[All Fields] AND "applications"[All Fields]) OR "mobile applications"[All Fields] OR ("mobile"[All Fields] AND "apps"[All Fields]) OR "mobile apps"[All Fields]) AND ("dentistry"[MeSH Terms] OR "dentistry"[All Fields] OR "dentistry s"[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 "informant"[All Fields] OR "informants"[All Fields] OR "information"[All Fields] OR "information"[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 ((fft[Filter]) AND (humans[Filter]) AND (english[Filter]))

Mobile Application Dentist Drug Information Filters: Full text, Humans, English

(("mobile applications"[MeSH Terms] OR ("mobile"[All Fields] AND "applications"[All Fields]) OR "mobile applications"[All Fields] OR ("mobile"[All Fields] AND "apps"[All Fields]) OR "mobile apps"[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 "informant"[All Fields] OR "informants"[All Fields] OR "information"[All Fields] OR "information"[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 ((fft[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 the drug information and some google searching engine, and Apple stores. 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 mobile applications appropriate for the dental care. The inclusion criteria of mobile applications were all applications available in Saudi Arabia iTunes Store or Google play store, evidence-based support by preceding literature or textbook publications, and positive reviews by the authors.

In comparison, omitted criteria were written in non-language, pharmacy, or medical applications negative reviews. 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 and subscription. It 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, dentistry specialties.

RESULTS

Assessment of Needs

E-Health refers to using the literature information and communication technologies (ICT's) in the health sphere to administer treatment of patients, research, health education, and public health monitoring.[5] The World Health Organization outlines e-health as the usage of information and communication technologies (ICT's) in the health domain to treat patients, research, health education, and public health monitoring.[5] The need to employ drug information applications has a positive influence on improving the outcomes of drug therapy. The provision of non-biased and authentic information can help reduce drug-related complications and promise drug safety to an extent in all dentist settings. The dentist must know how to deliver accurate and complete responses following their case through efficient use of drug information applications that is an essential skill for all healthcare providers to have regardless of their practice site. One of the conventional methods of new project assessment is the SWOT analysis. It defines strengths, weaknesses, opportunities, and threats of the project.[6] This project's strengths are introducing drug information application or even list for most vital dentist drug application, which complicated in actual and appropriate activities, preventing drug-related mistakes, and an additional unnecessary. The weaknesses of this project are disregarding the service.

Moreover, there is no education or guidance in the usage of drug information applications, Difficulties in supporting and funding for these services. The opportunities in this project are the implementation of accreditation standards and the availability of dentists aware of drug information applications. The threats to this project are there is no dentist interested in this field and the planning of dentist drug information applications.

Project Description

The scope of the current project is to assert the dental drug information mobile applications. The vision of the current topic is to influence the best with high-quality dental drug information applications, while the mission to deliver cost-effective dental drug information applications. The project's goals are to select the best and apprise dental drug information applications, to offer education and training for dental staff, and document the echo of dental drug information applications on the dental care. During the project implementation actions, the management team contained of the team's experts organizing the dentist drug information application: the team involves of clinical pharmacists, expert pharmacists and pharmacy technicians expert in drug information, dentists, dentists assistant, nursing and information technology member. The team should instruct and train the dentist and dentist's assistant to apply drug information-related issues. The team should set-up new policies and procedures linked to the drug information services, monitor the implementation of the software, and evaluate the outcome with the economic impact of the new services. One of the essential things are to implement a drug information application (the financial budget). The budget should reflect cost-related issues, counting education and training. Besides, the cost of equipment is needed for the preparation and the management team meetings. The defined budget should be scrutinized throughout the project period implementation. The dentist staff needs to appear numerous courses of drug information searching skills. Besides, the best application

resources of updated information of drug therapy for some diseases and basic pharmacology. Also, the education on drug information centers is stability research. The project wants to highlight total quality management keys called Balance Scored Card as key performance indicators of dental applications of drug information resources with different types, counting the customer, finance, internal process, education, and innovation.[7] There are risks in the current project: budget, scope, personnel, scheduled, technical, and quality risks. This project might be unprotected to the personnel risk due to the shortage of expert dentists. It might also be exposed to budget risk. It strains a budget to cover the education and training of dentist staff.

Moreover, the project might also be bare to technical risks such as material was not being available. Quality risks are met due to the untrained dentist being available.[8,9] There is nine mobile software suitable for the dental providers elucidated in the current topic, while twenty-three mobile applications are correctly deliberated, as explored in Table 1-3.

DISCUSSION

The dental drug information resources journey underway from the regular textbook, then converted to pdf at CD. By the time, sometimes the textbook came as a text page at the website, it commenced converting to the old mobile model of blackberry, their final stage of windows operating system or android or recently Hawaii.[1] So, there are still coming as a textbook and mobile applications at the same time. For example, some of the applications came from the textbook, such as Lexi-drug comp, statref, and related books about dental drug information resources. Some governmental websites had distinct applications like FDA, CDC, and MOH, as declared in Table 2. In addition, they conversed general healthcare, counting dental medications.

Some organizations enatils free websites with either pure website of drug information like drug.com or treatment of dental medications management. Other applications depends as part of evidence-based dentistry. They had unusual applications for these websites like clinical key or Cochrane library, as list explored in Table 2. However, there are some pure applications not associated to any type above. For occurrence, skyscape applications. Its collection of mobile applications, and intended for many specialties, counting dental drug information resources. Few were free software and some by subscription. The skyscape and Medhand library applications look like the StatRef applications list (which is less often used by dentists).[10] Two applications dedicated in dental drug information resources called clinical advisor, dental drugs, and dental clinical mastery (which are less frequently used by the dentist.[10] They conferred the dental medications in summary with pharmacological classification. Additional mobile applications like Epocrates discussed in-depth detail dental and non-dental medications.[4] Some of them came as a website and applications. It look like the Lexi-drug comp application. There is one software that discoursed dental terms and definitions. In addition, there is another software support for dental specialties with dental nurses called IV Medications Handbook Gahart. Some software came as free with website subscription-like EBSCO mobile, Clinicalkey, or Cochrane library. Other software came free of charge with their website with abridged information like FDA, SFDA, and MOH.

The choice of mobile applications is reliant on various factors. According to earlier literature, there are multiple methods to select any mobile application.[11-13] First, it depends on the benefits and quality of mobile software imitated in practice like skyscape group or Lexi-comp group or statref group or Epocrates.[2-4] The second factor that might impact the choice of applications is the cost. Many software applications came free of charge and might be very appropriate for dental students or new dental practitioners. Additional factors that might move the usage of mobile applications related to dental drug resources are the types of

Table 1: Dental Drug information apps.

Name of resource	Skyscape Rx Drug Guide[14]	IV Medications Handbook Gahart[15]	Clinical advisor[16,17]	Dental clinical mastery[18]	Dental Dictionary[19]	Medhand library[20]	Epocrates[21]	Dental Drugs[22]	Dental Demo Suite General Practice (DDS GP)[23]
Type of resources:	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary	Tertiary
Scope and coverage	It provides mobile healthcare practitioners with the latest in trusted clinical information about medications	It is more than 400 Intravenous drug and safely administration	It had 4,000 concise product monographs (OTC & Rx)	It provides essential information and skills for new and practicing dentists.	55,000+ dental terms and definitions	More than 500 medical titles textbook including Dentistry	More than 6,600 prescribed and OTC medications	Ninety most commonly prescribed dental drugs with their relevant dose, dispensary, instructions, and precautions.	It is for dental professionals to show conditions and treatments to their patients
Frequently Update:	Continuously update	Annually	Yearly	Annually	Automatically	Automatically	Automatically	Automatically	Automatically
Last edition:									
Price:	Free	Paid	Paid	Paid	Free	Paid	Free/Paid	Free	Paid
Subscription:	Invidual Institution	Invidual Institution	Invidual	Invidual	Invidual	Invidual Institution	Invidual Institution	Invidual	Invidual Institution
Manual book:	No	No	No	No	No	Yes	No	No	No
Website:	Yes	no	Yes	Yes	No	Yes	Yes	No	Yes
Publisher:	Skyscape	Elsevier Health Sciences Company	Haymarket Media Inc	Higher Learning Technologies Inc	Farlex, Inc.	Indextra AB	Epocrates Inc. and AthenaHealth Service	Apps 4 Dentist	Kick Your Apps, Inc.

Table 2: Additional Dental Drug information apps.[2-4,24-27]

No	Applications	Cost	Link
1	U.S Food and Drug administration (FDA)	Free	https://apps.apple.com/sa/app/drugs-fda-express/id1318248918?l=ar
2	Drugs.com	Free	https://apps.apple.com/sa/app/drugs-com-medication-guide/id599471042?l=ar
3	Centre of disease control and prevention (CDC)	Free	https://apps.apple.com/sa/app/std-tx-guide/id655206856?l=ar
4	Saudi Food and Drug Authority (SFDA)	Free	https://apps.apple.com/sa/app/%D8%BA%D8%B0%D8%A7%D8%A1-%D9%88%D8%AF%D9%88%D8%A7%D8%A1/id1485253067?l=ar
5	Ministry of Health (MOH)	Free	https://apps.apple.com/sa/app/moh-formulary/id1518541093?l=ar
6	Medscape	Free	https://apps.apple.com/sa/app/medscape/id321367289?l=ar
7	WebMD	Free	https://apps.apple.com/sa/app/webmd-symptoms-rx-doctors/id295076329?l=ar
8	Up-to-Date	Paid	https://apps.apple.com/sa/app/uptodate/id334265345?l=ar
9	Clinicalkey	Paid (Free abstract)	https://apps.apple.com/sa/app/clinicalkey/id1041998175?l=ar
10	Cochrane Library	Paid (Free abstract)	https://apps.apple.com/sa/app/cochrane-library/id573181475?l=ar
11	DynaMed	Free	https://apps.apple.com/sa/app/dynamed/id986105980?l=ar
12	EBSCO Mobile	Paid (Free abstract)	https://apps.apple.com/sa/app/ebsco-mobile/id1473281170?l=ar
13	Web of Science	Paid (Free abstract)	https://apps.apple.com/sa/app/web-of-science-myra/id1537814020?l=ar
14	The BMJ	Paid (Free abstract)	https://apps.apple.com/sa/app/the-bmj/id1395295755?l=ar
15	Sanford Guide to Antimicrobial Therapy	Paid	https://apps.apple.com/sa/app/sanford-guide-antimicrobial/id863196620?l=ar
16	MSD Manual Professional	Paid	https://apps.apple.com/sa/app/msd-manual-professional/id1123678257?l=ar
17	IBM Micromedex Drug Ref	Paid	https://apps.apple.com/sa/app/ibm-micromedex-drug-ref/id666520138?l=ar
18	IBM Micromedex Drug Interact	Paid	https://apps.apple.com/sa/app/ibm-micromedex-drug-interact/id666032615?l=ar
19	IBM Micromedex NeoFax Ref	Paid	https://apps.apple.com/sa/app/ibm-micromedex-neofax-ref/id666513907?l=ar
20	IBM Micromedex Pediatrics Ref	Paid	https://apps.apple.com/sa/app/ibm-micromedex-pediatrics-ref/id666511072?l=ar
21	AHFS Clinical Drug Information	Paid	https://apps.apple.com/sa/app/ahfs-clinical-drug-information/id1068281731?l=ar
22	Lexicomp (Dental-Lexicom)	Paid	https://apps.apple.com/sa/app/lexicomp/id313401238?l=ar
23	STAT!Ref	Paid	https://apps.apple.com/sa/app/stat-ref/id474559171?l=ar

formats. For instance, some software came as a website, applications, and regular textbook-like group of Lexi-comp. Lead to many users exploited based on practitioner preference. Healthcare organizations, including dental colleges, should review all mobile applications, choose appropriate, and make their staff and student mandate.

CONCLUSION

Most drug information dental textbooks or dental websites and evidence-based dentistry desired mobile applications in the current century. There is an underutilization of drug information dental applications by professional dentists. Moreover, few or nil studies review the usages of the dental application. The new initiative project with allocated team and support of logistic and financial budget at the dental healthcare organizations will recover the use of new technologies in dental practice. Implementing dental medication applications in the undergraduate dental college will rally dental services and reflect on dental drug medication safety during dental care in Saudi Arabia.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

MOH: Ministry of Health; **KSA:** Kingdom of Saudi Arabia; **SWOT:** Strengths, Weaknesses, Opportunities, and Threats; **FDA:** Food and Drug Administration; **SFDA:** Saudi Food and Drug Authority; **BSC:** Balanced Scored Card; **ICT's:** information and Communication Technologies); **DDS GP:** Dental Demo Suite General Practice; **FDA:** U.S Food and Drug administration; **CDC:** Centre of disease control and prevention.

Table 3: Practice of Dental Drug information apps.[2-4,24-26]

Name of resource	Content	Inquiries answered	Usage of dental student	Use of general dental practitioner	Usage of specialized or consultant dentist	Reference
Skyscape Rx Drug Guide	It includes nearly 400 Informative monographs of commonly used medications indexed by indication, pharmacologic class, generic name, and the U.S. or Canadian brand name with the latest information on indications and dosage, and integrated weight-based drug dosing calculators.	It gives Indication, doses (including renal and hepatic dosage adjustments), administration, sections on pregnancy, breastfeeding safety, and comparative pricing.	Needs to be available for universities and academic institutions	Recommended	Recommended	14
IV Medications Handbook Gahart	Monographs on more than 400 IV drugs	Drug interactions, precautions, alerts, dilution, and dosage charts	Needs to be available for universities and academic institutions	Recommended	Recommended	15
Clinical advisor	Its drug database contains over 4,000 concise product monographs (OTC & Rx) and is organized by brand name, generic name, and disease state. Each monograph includes indication, dose, contraindications, precautions, interactions, adverse reactions, manufacturer, and supplied information.	Indication, dose, contraindications, precautions, interactions, adverse reactions, manufacturer	Needs to be available for universities and academic institutions	Recommended	Recommended	16,17
Dental clinical mastery	It gives best practice dental guidelines for all levels of dental specialties	Dental drug administration, best practice dental treatment guidelines, FDA prescribing guidelines	Needs to be available for universities and academic institutions	Recommended	Recommended	18
Dental Dictionary	It is a dictionary and encyclopedia sources, including; Diseases, Treatment methods, Oral hygiene, Causes, and Dental tools and technology	find clear, in-depth definitions of dental terminology	Needs to be available for universities and academic institutions	Recommended	Recommended	19
Medhand library	It is a single or collection of healthcare textbook, including dentistry	Diagnosis, sign and symptoms, dental diseases, drug therapy	Needs to be available for universities and academic institutions	Recommended	Recommended	20
Epocrates	It had Rx and OTC monographs: pharmacology, prescribing and safety information, black box warnings, Drug interaction checker OTC, or alternative drugs, Pill identifier, and 600+ dosing calculators, medical equations, and tools	Adults and pediatric dosing, administration, doing in renal and liver failure Side effects, pregnancy and lactation,	Needs to be available for universities and academic institutions	Recommended	Recommended	21
Dental Drugs	It contained a Local dental anesthetics calculator, Emergency management protocols of a dental chair.	Drug dose, administration, maximum anesthetic dosages	Needs to be available for universities and academic institutions	Recommended	Recommended	22
DDS GP	It is the dental management condition of various cases in dental practice	Dental drug therapy and treatment	Needs to be available for universities and academic institutions	Recommended	Recommended	23

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

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