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Pediatric Radiology Apps and Their Relevance in Medical Practice and Training

Medical Science

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ABSTRACT

The Medical world always works on the principles of no maleficence and only beneficence. It is humanly very difficult to keep pace with the exponential growth of medical science and technology. Practice of Pediatric Radiology becomes even more challenging by virtue of peculiarities of neonates and children. Only limited number of Pediatric Radiology Apps on Smartphones are available. These Apps can act as great facilitator. This article is aimed to sensitize Radiologists and Pediatricians about the availability of the Pediatric Radiology Apps and their possible utility in Medical practice and training.

Introduction

The Medical world always works on the principles of no maleficence and only beneficence to our care seekers. In the fast galloping growth of medical technology and generation of plethora of scientific knowledge every moment, it is humanly very difficult to acquire and retain all the facts, remain trained and updated with all the skills. Practice of Pediatric Radiology becomes even more challenging by virtue of peculiarities of neonates and children, tailor making of technology and higher skill acquisition for radiological investigations in small subjects. Only limited number of Apps on Smartphones are available which address to various domains of learning, self-evaluations, case simulations, access to latest publications and some come as accompaniments to published books in the field of Conventional Radiology, Ultrasonography, CT scan and MRI imaging in neonates and children [1,2,3,4]. These Apps can act as great facilitator on the point of care and at the time of need with ease of availability round the clock being present in smartphone. It has been observed that large numbers of medical professionals in the domain are still not fully well-versed with the existing specialty Apps. This article is aimed to sensitize and bring awareness about the availability of Pediatric Radiology Apps in Radiologists, Pediatricians and Neonatologists.

Pediatric Radiology Apps

The following Apps are the important available Pediatric Apps at the moment, though it is likely that more will be progressively added.

1. Pediatric Radiology Review:

It is from Diagnostic Radiology Pediatric Board Review. It includes 700 multiple choices, facts, scenario and case-based questions, provides correct answers and explanations to help one quickly master examination questions. One can take examination as many times as one wishes. It prepares effectively for Pediatric Radiology Examinations. It is available both on Android and IOS platform and is paid app of Pediatric board.

2. Radiology:

Radiology mobile application allows immediate access to full-text articles published in the Radiology Journal for Radiological Society of North America (RSNA) to members and subscribers with subscriptions. Non-subscribers can access all abstracts free of charge. The Radiology application includes the ability to view current and past full-text articles with high resolution images, watch and listen to related video and audio. Radiology has long been recognized as the authoritative source for the most current, clinically relevant and highest quality research in the field of radiology. It is available both on Android and IOS platform and is a free app of RSNAorg.

3. Pediatric Radiology:

Pediatric Radiology is the official journal of the Society for Pediatric Radiology (SPR), the European Society of Paediatric Radiology (ESPR), the Asian and Oceanic Society for Pediatric Radiology, and the Latin American Society of Pediatric Radiology. It provides up-to-date scientific publications of the specialty. It is available both on Android and IOS platform and is a free app from Springer.

4. Pediatric XR:

This free app is on IOS platform and provides easy evaluation and practice platform for Pediatric X-ray cases for medical professionals. It is a good educational app.

5. Ultrasoundpaedia:

Pediatric Ultrasound app is a detailed description on how to perform Pediatric/ Neonatal Ultrasound. It is invaluable for all health professionals providing or interpreting ultrasounds. It encompasses everything one needs to know about the anatomy and normal ultrasound appearances of the neonatal head and brain, hips. Each section contains detailed scanning techniques, Images of probe placement, a huge array of normal ultrasound images, colour overlays describing the visible anatomy. Links are also available to useful websites for pathology and embryology. It has been created by professionals for professionals. It is a paid app available on IOS platform.

6. Cranial Ultrasound:

Cranial Ultrasound is an educational neonatal quiz app designed for medical students, doctors, radiographers and healthcare professionals. This app provides over 50 real clinical cases, common and rarer pathologies, with over 250 high-quality images. Cranial Ultrasound is an essential app. It is available both on Android and IOS platform and is paid app.

7. NeoHead:

A very useful paid app for IOS, made by Indian doctors and provides interactive info on neonatal neuro-sonography. At present not available at app store.

8. pedsMRI:

The pedsMRI app provides pediatric MRI protocols at the fingertips of the user. This app has a search feature where the user can enter the body part, organ, pathology or suspected abnormality and a list of the possible suitable protocol will be displayed. Click the particular protocol to open it. Each protocol has list of suggested sequences and techniques that can be utilized for the MRI scan in children for the particular disease or body part. Uncommon sequence will have the purpose or usefulness mentioned with it. The protocols in the apps will be updated yearly in keeping with ongoing research and developments in the field of MRI. It is developed by pediatric MRI experts from the hospital for Sick Children. It is a free app available on both IOS &

Android.

9. One Minute Ultrasound:
Brought by the Ultrasound Podcast and has efficient 1-minute demonstrations, lectures, instant access to an incredible amount of content. Videos demonstrate all aspects of the scan including: Hand Position, Descriptions, Normal images and Pathologic images. Perfect for the crashing patient when you need a quick reminder of how to perform an ultrasound. Ideal for ultrasound learners or educators. This app can be used to demonstrate at the bedside or just prior to entering a room when you're teaching someone ultrasound or when you're trying to learn yourself and you don't have someone with you to show you. It is a free app available on both IOS & Android phones.

10. Pediatric Imaging Case reviews:
It is a paid app on IOS platform and provides questions on large number of Pediatric diseases with images and approach. It is considered to be very useful app.

11. Pediatric Radiology Flash cards:
This app is designed for learners of Pediatric Radiology and provides high quality images of Plane films, USG, CT and MRI and with the information about the condition on the reverse of the cards. It is a paid app on IOS platform.

12. CT Sessions:
Siemens Computed Tomography Customer Magazine brings out the latest innovations, clinical applications, and visions in computed tomography. This app allows one to access all articles and download them to read offline. Based on one's interests including Pediatrics, one can receive personal recommendations. It is a free app available both on IOS & android devices.

Discussion:
The above apps can be obtained either as free download or on payment of relatively small amount from Google Play store for android phones and from iTunes for iPhones. Some of the apps are available only on one store. These apps should be used as ready facilitator but one should also analyze and appreciate their authenticity before blindly following them, as is true for published books of the different publishers. It may be a good approach that when one is using the app first time, one should check its' correctness with standard reference on the subject so as to avoid any possible error due to usage of the app.

Conclusion:
To conclude, it is the right and opportune moment for one to become fully aware about the available apps in Pediatric Radiology and optimally utilize them for the best of training and patient management. May be the teaching departments and institutes should consider developing their customized apps and match and spearhead the fast growing medical technical world and meet their objectives of patient care & medical training most optimally.

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