

AN ANDROID APPLICATION FOR MYOFASCIAL PAIN SYNDROME RELIEF THROUGH MEDIATION

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Abstract: This paper presents a mobile healthcare system based on android. Android-based application allows patients who are suffering from myofascial pain to track symptoms and other data to better explain their condition. It includes a range of guided and unguided meditations to train your mind happier, healthier and enjoyable life, while daily inspiration keeps the user motivated. Application contains do not disturb mode which allow user to view and create schedule and will get the notification whenever the schedule get starts and ends.

I. INTRODUCTION

Smartphone's became most widely adopt technology in the modern history of mankind [3]. Together with the rise in mobile phones there is a significant rise in the mobile application. Use of mobile technology is not a new concept in the healthcare industry; Modern smart mobile devices offer media-rich and context-aware features that are highly useful for electronic-health (e-health) applications. It is therefore not surprising that these devices for e-health applications, turning them into m-health (mobile health) apps. Together with rise in mobile technology there is a significant rise in growing number of available healthcare mobile applications. Many medical applications for smart phones have been developed and widely used by health professionals and patients[4]. Our proposed healthcare system is based on Android and Web apps to provide relief to the people suffering from myofascial painwith the help of meditation. Meditation practices have found their own way in mobile technology. Meditation operates on the wide range of pain including MPS[1]. The proposed application allows the user to perform meditation through guided and unguided audios and videos. It let the user get complete information about the symptoms, causes, diagnosis, treatment, and the benefits of meditaion. It enables the user to remain motivated through the daily quotes. User can create the list of favourite meditation audios.

II. CHALLENGES IN MOBILE APPLICATION DEVELOPMENT

Mobile applications have a competitive world, and there are various challenges faced by the developers on the technical front. Once we have a great idea and if we want to convert it into a mobile application the development became the interesting and exciting activity. But nothing comes without challenges and similar happens with mobile applications development.

Device fragmentation- Large number of mobile phone devices is available and each one has unique feature in terms of size, shape and resolution. The device fragmentation often

come as biggest challenge while development of mobile application.

Platform fragmentation- Different mobile OS platforms and their versions keep the android developers or programmers holding back. Choosing the operating system for the mobile application development requires extra attention.

Development technology- To make the application proficient and effective you have to choose best suitable development technology.

Native mobile applications are most common type of applications. These apps are developed using specific IDE for the supported OS. Native apps are more interactive and fast as compare to other apps. They give high performance and distributed in different app stores.

Hybrid applications are the combination of native and web applications and sometimes behave like native applications. Hybrid apps are easy to build because they are developed on HTML/CSS kind of web technologies. Development is faster and cheaper than the native apps.

ross platform development apps develops those apps that multiple mobile platforms can use. These apps are cheaper than native and hybrid apps.

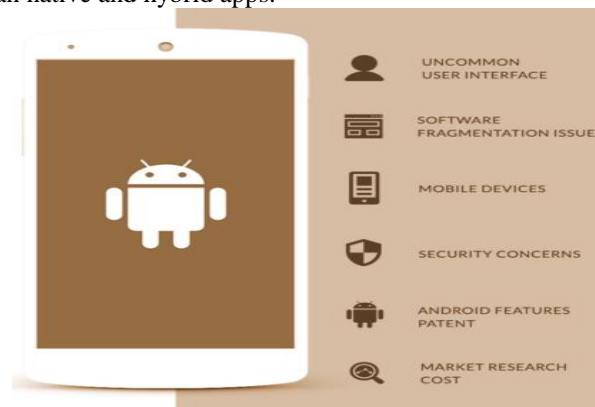


Fig 1 Challenges in android application development

Software fragmentation- Different android devices running or using different versions of android OS, so it is important for the developer to keep in mind about this fragmentation.

UI/UX- If you want to build a simple and good application then Provide a user a good user interface at the same time a favourable and unique user experience.

Security- Security issue is one of the major concern areas in mobile application development. Malware problem can arise anytime.

III. RELATED STUDY

Prashanth panta [1] the paper was published with an interesting hypothesis in which possible link was explored between meditation and MPS. Mindfulness meditation works

on the brain area or region that is responsible for assimilation of the myofascial pain. This brain area or region participates in impulse regulation, emotion, pain, automatic functions. Meditation reduce muscle pain and provides relaxation by emotional reaction to pain and by sensory dimension uncoupling. Till the date the paper was published no certain hypothesis was available connecting meditation and MPS. The paper leads to the description drawn from various kind of the on fibromyalgia, myofascial pain, and the similar chronic pain models and that to from self experimentation.

Anu Saleh Mohmmad Mosa, Illhoi Yoo and Lincoln Sheets[5], The study presented a systematic literature review of the healthcare applications for smartphones. The main focus was on the functionality of software for smartphones with in the scope of healthcare. It includes the design, development, evaluation or use of smartphone applications for the healthcare. About total 83 applications were examined under different categories based on functional similarities; drug referce, medical calculator, literature search, HIS client, Disease Diagnosis, Clinical Communication, and medical training. The study provides better understanding and greater insight into the effectiveness of the smartphone- based healthcare applications in improving patient care and reducing healthcare expenses.

SAMUEL A. SKOOTSKY, BERNADETTE JAEGER, ROBERT K. OYE[6], The research consist clinical diagnosis of myofascial pain syndrome in the nearly 30% of the patiens with pain seen. The prevalence of the myofascial pain syndrome(MPS) was too high. And it presented the single most common reason for the patient study myofascial pain appears to be the clinically important problem. 75% of the MP(myofascial pain) patients reported symptoms for atleast one month, and mean intensity of their pain, assessed by visual analog scale, was possibly greater than intensity of other pain. 44% of the MP patient reported that pain was the only reason for their visit to their physician.

Natalia E. Morone, Carol M. Greco, Debrak. Weiner[21], The study was published to show the feasibility of an mindfulness based meditation program for the adults with chronic lower back pain. In the research study, not only the older adults interested in the meditation, but they were enthusiastic about program. The program appeared to have a beneficial effect on the pain acceptance and the physical function measured by CPAQ and SF-36 physcial function scale. Majority of the participants continued to meditate 3-month follow-up. Other non-pharmacologic approaches to pain management also teach patients how to “live” with pain, but may not place as much emphasis on the concepts of letting go or acceptance. This approach was easily grasped by participants and encouraged them to take a fresh look at their pain condition. This may have led them to change their behavior or perception of pain, which may have resulted in improvement of their pain experience.

IV. PROPOSED SYSTEM

Myofascial pain is a common chronic pain disorder. A chronic pain causes in muscles is Myofascial pain which has became the common reason behind the complaints, because it effects the personal life and daily living of an individual.

95% of the people who is having chronic pain are suffering from the Myofascial pain syndrome. People often experience muscles pain and most of the time it became major reason for the sickness. People with Myofascial pain syndrome (MPS) has sensitive spots known as trigger points. Whenever the pressure is applied to these points (trigger points) there is a pain in different parts of the body. The trigger points are tinder and can often produce localized pain. Mediation role in MPS has often underestimated and has never tried by the scientific community[1].

Patient with the myofascial pain syndrome usually experience sleep disturbance, fatigue, anger, depression and altered mental function[4]. Fitness experts and doctors usually advices for the medications, meditation can also be the alternative approach. Meditation works much better than the medication in the pain management. Using meditation we could overcome pain and symptoms. Myofascial pain syndrome (MPS) leads to the sleep disturbance, anxiety, and stress. Meditation serves a unique effect on sleep. Meditation serves a unique effect on sleep. It reduces the sleep requirements and also improves its quality. Improper or less sleep are the main causes for the stress and anxiety, further both will contributes in the MPS.

Sleep disorder in myofascial pain syndrome can lead you to the stress and anxiety. Although anxiety is short-lived but it is a permanent state. It is a body response to discover mental and physical stress. Studies have found that stress is a major contributor in MPS.



Fig 2. Main screen

The mindful-meditation has common benefits such as better sleep, pain reduction, acceptance of pain and enhanced well-being. Meditation operates on the wide range of pain including MPS[3].

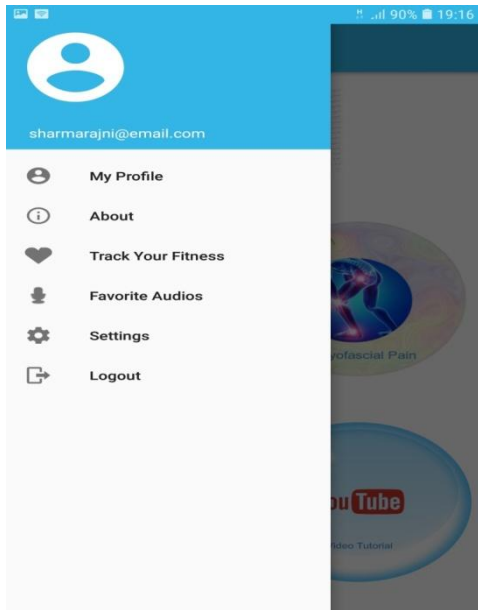


Fig 3. Setting screen

The main aim behind the development of this application is to provide pain information and pain relief to the user through the benefits of meditation.

Fig.2 shows the main module of the application. The system includes four main modules that are easy to use for everyone. Majority of pain information is text-based together with PDF links. Relaxation, meditation content is delivered through audios and videos. Daily inspiration is the module meant to keep the user motivated.

Fig3 The figure contains the setting section of the application, where user can update his/her profile, can create schedule. User can foarm playlist of the favourite audios.

V. CONCLUSION

Because the mobile devices are widely available, the potential for developing the pain management programs that are accessible has become a realistic possibility. The self-management of Pain is an excellent candidate for the new product development. The potential benefits of the health-care applications are wide. The objective of the paper is to provide mobile based health application that includes meditation content to relief the user suffering from myofascial pain. The app consist easy and user-friendly interface.

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