

D-REHABIA: A Drug Addiction Recovery Through Mobile Based Application

L.U. Somasiri¹, S.S.G. Galabada¹, H.M. Wijethunga¹, H.M. Dayananda¹, A. Nugaliyadde¹, S. Thelijjagoda²,
M. Rajasuriya³

¹Department of Information Technology, ²Department of Information Systems Engineering
Sri Lanka Institute of Information Technology

³Department of Psychiatry, University of Colombo

it12035472@my.sliit.lk, it12035304@my.sliit.lk, it12038442@my.sliit.lk, it12066780@my.sliit.lk, anupiya.n@sliit.lk,
samantha.t@sliit.lk, mahesh.rajasuriya@gmail.com

Abstract—Drug addiction has become a major issue in the world. There are certain governmental and non-governmental organizations which provide various programs to prevent, recover and rehabilitate drug addicts. The patients who are in the recovery process have a higher tendency of relapsing after being released to the society. The objective of this research is to produce a mobile based Drug Recovery Application and prevent patients from relapsing during the recovery process and to involve both family and rehabilitation center to the recovery of the patient. In order to accomplish this objective, the application contains an artificial intelligent assistant which will guide/help the patient regarding issues occurred during the recovery process, a location tracking mechanism to identify the movements of the patient and possible high risk places where drugs can circulate, a voice analysis mechanism to analyze the voice of the patient and identify emotional states which might cause the patient to relapse and treatments to reduce the stress, anxiety and depression level of the patient. The field of drug rehabilitation has been barely addressed via a proper technological solution, hence the system implemented as the result of this research can be effectively used for the recovery of the patient.

I. INTRODUCTION

Drug addiction is a long lasting and a relapsing brain disease which causes indispensable drug seeking and use, regardless of the harmful consequences which can affect the drug addict and the people around them [1].

Drug addiction can be mainly seen as a brain disease because continuous drug usage can lead to structural and functional changes of the brain. This repeating drug usage often affect the self control of the drug addict, potential of making decisions and also continuously increases the cravings to take drugs again and again. With the person taking drugs on a continuous basis, this becomes a habit. The main intention and the goal of drug rehabilitation is to teach the patient the methodology of breaking this habit.

Successful treatment programs typically consists of many components, such as aiding the drug addict to stop using drugs and maintain a sober lifestyle (help to break the habit of taking drugs), strengthen family relationships, guide the patient on facing the problems of day to day life (taking decisions, controlling emotions, managing time/money etc.), provide medication and treatments to patients who suffer from mental disorders during the rehabilitation process [2]. Since

addiction is often a chronic disease, drug addicted patients cannot simply stop using drugs within several days and be cured. Most of the drug addicted patients require long-lasting or repeated episodes of treatment to achieve the final goal of sustained abstinence and recovery of their lives [3]. Behavioral treatments are used as a significant tool to modify the attitudes and behaviors related to drug addiction, and to increase healthy life skills. Mainly there are two mechanisms used which comes under behavioral treatments.

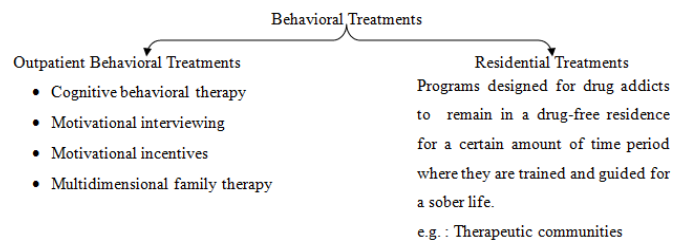


Fig. 1: Common Treatments Used

Among these treatment mechanisms used, cognitive behavioral therapy is considered as a highly effective and a successful approach which helps the drug addicts to identify, abstain, and deal with the conditions where they are most likely to abuse drugs [4-6].

The major issue in drug rehabilitation is when patients are released to the society after the rehabilitation process, there is a higher probability of them using drugs again [7]. This happens due to various reasons such as the patient getting the freedom of doing what they desire, the communication, guidance, monitoring of the rehabilitation center with the patient is getting weak, meeting old drug using friends and visiting the places where they tend to use/buy drugs, having difficulties in acquiring the rightful place in the family etc.

This research addresses the mentioned issues and guide the patient with the help of patient's family, rehabilitation center and also through self-realization.

The system comprises of two applications, a mobile based solution and a web based solution. While the mobile solution guides the patient, the web application keeps the family members and rehabilitation center updated about the patient.

The mobile application acts as an assistant for the patient. The patient is able to talk with the application during the recovery process and discuss basic matters with the application. The application provides suitable responses and guide, advice the patient and provide treatment suggestions