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A Study on Role of Smartphones in Alzheimer Diagnosis and Support to the Nation for Developing

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ABSTRACT: Alzheimer disease causes significant problems in public health all over the world. Alzheimer disease mainly affects problems with thinking, memory and activities. Alzheimer disease mainly affected the people who belong to the age group of 80-year-90. There is no medicine for prevention of Alzheimer. As accordingly 44 million people are suffering from dementia and Alzheimer situation. The paper helps us to increase the general awareness of the symptoms of Alzheimer. May be proper understanding and knowledge of disease symptom is not given to people, hence rate of death has been increased. This paper helps for determining the Alzheimer in early by using various ways. Machine learning method, Algorithm, mobile games, mobile applications, cloud-based system, screening tests, AD mini improvement tool and digital memory book are the techniques for Alzheimer patient diagnosis, cure and maintain the health. Also, a general information about the Alzheimer is mentioned there. In many developing countries the situation of patient is same. So, to enhance the life of people and make the nation strong by health is one step. Now day's smartphones are available even in undeveloped areas. So, by taking benefit of this smartphones we keep up maintain health of Alzheimer patients.

KEYWORDS: Alzheimer, treatments, various ways to relief from Alzheimer, Mobile application, Truth that mobile is need of Alzheimer patient.

I. INTRODUCTION

As we are in 20th century mobiles are the need of every people. In this paper we are also supporting mobile uses and its need for Alzheimer patient. As Alzheimer patients are increasing day by day and still there is no any kind of treatment through it can be cure properly. Dementia is the main symptom of Alzheimer patients. The people who suffering from this disease lose the memory and even a daily schedule. It affects to the brain cells by damaging the brain cells patient may lost their life. It is difficult for them to survive in this world with normal people. Even impossible that care takers attention on patient must be done properly. At Sri Lanka doctors have made a game for AD patients in which questionnaires involved. According to responses they give marks and encourage the people even they failed to complete the task properly. We have made a basic hypothesis that mobile can maintain Alzheimer patient punctual. At least they can do their daily schedule with no loss of any task. Various applications are now in the mobile phones especially for dementia patients so that they also can feel like normal people. Here we have supported mobile for its good use in Alzheimer security.

II. OBJECTIVES

Alzheimer's is a kind of dementia in patients who start getting to forget their names, speaking, moving even swallowing. The activities also become difficult for them. To know how they handle themselves with this unconscious situation and what will be the precautions, cure, and treatment we have made a general hypothesis.

- 1] Mobile is the best solution or technical treatment for Alzheimer's disease patients.
- 2] Mobile games and applications can maintain Alzheimer's patient health equally or patient can do their daily schedule properly.

III. LITERATURE REVIEW

[1] In this paper the author Gonzalez, H. A. et al, the author Muzaffar al, the author S. Yoo, J. et al, & the author Elfadel, I. M. et al proposed EEG-based emotion classifiers have the potential of significantly improving the social health of patients suffering from neurological disorders such as Amyotrophic Lateral Sclerosis and also some stages of Alzheimer's disease. General ideas and detection of Alzheimer's have been mentioned. This paper helps us hope that disease can be detected earlier and much more technologies are available. Especially technical detection is best and can detect early. The main focus is on the BioCNN: A hardware interference engine for ECG based Emotion detection. [2] The author Escudero et al, the author J., Ifeachor et al, the author E., Zajicek et al, the author J. P. et al, Green, C. et al, the author Shearer, J. et al, & the author Pearson, S. et al proposed that early detection of AD patients can be done. They have tested the machine learning approach for personalized and cost-effective diagnosis of AD with the greatest advantages. [3] The authors B. Cook et al and the author P. Twidle et al, proposed that mobile applications are useful in raising Alzheimer's or dementia. Mobile games can help to reduce the symptoms of Alzheimer's. Various stages are there in the game that can check the thinking and memory power. They tried to solve problems like confusion, delusion driving working, diagnosis memory loss. 8,50,000 people have been affected by dementia in the UK and this strength may increase up to 1 million in 2025. Sobehavior related to Alzheimer's can be identified. Dementia is also the 1st stage of Alzheimer and in this paper, they have tried to solve Alzheimer's through a technical method. In which Mobile device has played an important role as information related to mobile game which helps reduce Alzheimer's properly, is given in this paper. The general idea and hope to people for Alzheimer's situation. [4] The author A. Ata et al, the author B. Yeşilkaya et al, the author Ö. K. Cura et al and the author A. Akan et al, an alternative option that is a Mobile game for Alzheimer's detection and maintaining people's health normal. Through the game, people can spend time and experience stress less life. EEG signal base. This paper helped to understand Alzheimer's extra signs and symptoms. Also, provide one alternate way for detection and control Alzheimer's in public health. [5] Dementia is mainly seen in adults. So, various applications that can help in reduce Dementia or maintain public health good. The applications work on mobile platforms including features like learning, pillbox, schedule, doctor diary, news, etc. All daily activities and routine can be in the mobile Applications which gives notifications. As the patient suffers from Alzheimer's through these applications can do their task easily. Some apps Carezone, CURRAP, Alzheimer Assistant. Paper suggests the Treatment, symptoms of Alzheimer's, and how to handle patients. Focused on application base treatment means through mobile applications people may recover their health especially memory loss and Alzheimer problems said by the author A. Ata et al, the author B. Yeşilkaya et al, the author Ö. K. Cura et al and the author A. Akan et al. Smartphone is the possible and the best solution for Alzheimer patient's family as it gives time to time notifications about the daily routine. [6] The author G. Gupta et al, the author A. Gupta et al, the author V. Jaiswal et al and the author M. D. Ansari et al proposed patients have risen in the group of elders. So there is a need to diagnose Alzheimer's patients early. They have a focus on computerized touch panel type screening test. So that diagnosis can be done fast. [7] The author G. Gupta et al, the author A. Gupta, the author V. Jaiswal and the author M. D. Ansari et al, proposed a game simply for the people who have symptoms of Alzheimer, but cannot read or have a lack knowledge of English. Various stages are mentioned in the game. Overcome the touch screen panel problem in this game. [8] The idea that digital personalized memory books for AD patients. Which can be useful for daily routine. The patient can be comfortable and easy to use the application. The patient can fight against it and feel like normal people as everything can do properly through the application. This book also has various functionalities like family members voice recognition, notification and display screen said by author T. Kurata *et al.* [9] The author H. A. S. M. Samarasinghe et al, the author W. A. M. S. Weerasooriya et al, the author G. H. E. Weerasinghe et al, the author Y. Ekanayaka et al, the author R. Rajapakse et al and the author D. P. D. Wijesinghe et al proposed that recently many technologies are based on cloud computing and computing is also playing role in healthcare problems. Which also has played a little role in Alzheimer's cases. In this paper, for Alzheimer patients cloud-based system was presented. The work in this paper is useful for Alzheimer's patient's families and healthcare centers. The system is useful for both AD patients and caregivers. [10] The author A. H. Abu Hashim et al, the author A. N. Ismail et al, the author R. Mohd Rias et al and the author A. Mohamed et al proposed that caretakers are mainly responsible for the worse condition of Alzheimer patients. But artificial intelligence can overcome this problem also. AI-based application, Memory Stash Alzheimer's Aid' that targets every stage of Alzheimer's disease. It will help the patients in their daily routine tasks and focusing on the problems they face. It provides a variety of features which will help to improve their quality of life. As AI has played role in every field, it also gave a little contribution to healthcare. By Giving AI and non-AI features they have discussed various stages of Alzheimer's patients stages. [11] Alzheimer's is growing fast in the early days. Here they have supported mobile treatment and use mobile in clinics for Alzheimer detection. In general, the medical system also supports mobile treatment this fact has been proved in this paper. Confidently can say the best way to treat Alzheimer's is mobile through and most of the clinics have accepted this approach is clearly understood in this paper. CDSS technique for early detection of dementia is useful has been proved in this paper said by the author A. S. Ghanem et al and the author H. A. Alkhal et al [12] The author B. Sheri et al, the author P. Kumari et al, the author I. F. Siddiqui et al

and the author H. Norman et al proposed that Death rate of Alzheimer patients is increasing and mainly in Sri Lanka context. Doctors have made paper games questionnaires for patients and comparatively, give marks for patient's activities. They checked the results and variance in results accordingly. One best idea to detect Alzheimer's disease early by using a technical tool. As a critical situation of Alzheimer's patients is growing on. [13] The author S. F. S. Adnan et al, the author H. Hashim et al and the author I. Pasya et al proposed a MIDlet application using NetBeans. As a result, there are changes in the number of patients that have been recovered. Dementia mainly affects the brain and it is one of the features of Alzheimer's. They also proposed that recovery rate changes in AD patients

IV.METHODOLOGY

a) PARTICIPANTS

1) We know that study is related to public health to find the way or techniques for Alzheimer's patients. As study on this disease is mainly for public health so survey is done by taking responses from people.

So, there are also some people those who had the knowledge of applications that are in the Smartphones. Main participants are people where the Google form was circulated for conducting data. Well satisfying responses were collected from people through this google form survey everyone gave response at personal level. Survey is done at City level from Mumbai. Therefore are 120 participants (80 Females, 40 males) involved in this survey. Only one response has collected from once. So, there is no repetition of any respondent.

b) MATERIAL

Alzheimer's is badly affecting all over the world. In this research, we have tried to find the best solution to that situation. So, should be accessible, available, and readable to everyone. As the survey is on technology, we have involved smartphones also for taking responses. A Google form was used to collect responses or data. So, the form is circulated for almost 2 days and 100 responses were collected from people. So, people, goggle form, various activities on smartphones, and doctors were the main source of this experiment.

c) PROCEDURE

The Google form is circulated over the city is the main source of for the experiment. We have collected samples by providing various questionnaires in google form and data has collected. There were six questions involved in that form which fully clarified that the hypothesis is right and Alzheimer patient health can be maintain properly.

V. EXPERIMENT

- a) This was the first question of our experiment. As shown in fig. 1 we have achieved 120 responses for the question games can reduced the stress of people. So, obtained responses said that was positive in which 80% people said that yes its right and 20% people were not agreed with this statement. But probably yes responses was more than no responses people. So, it is little hope that people were agreed with smartphones role for alzheimer disease diagnosis.

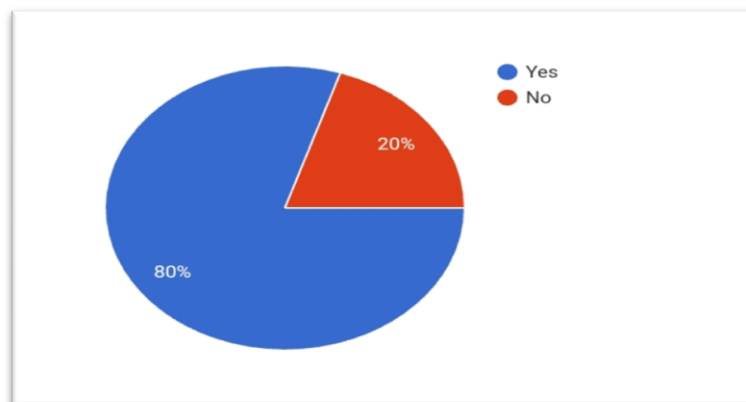


Fig 1

- b) This was the second question of our survey in which we asked question that gave information about awareness of people of the applications. The applications were related to Alzheimer disease. So, we found that people

have appropriated information about the smart phones applications which diagnosed Alzheimer disease or maintain health of the patient.

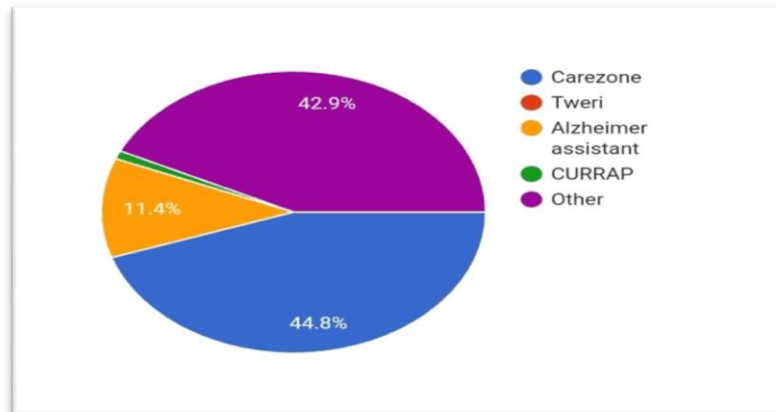


Fig 2

- c) This was the third question of our survey which also related to apps in which people have great knowledge of Care zone application. As shown in the fig 3.

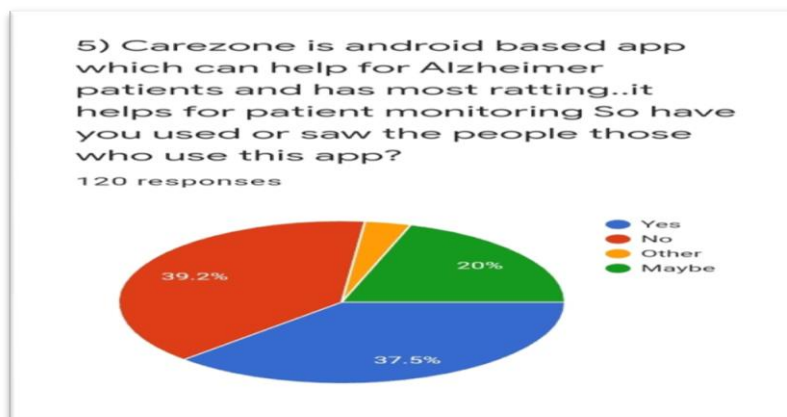


Fig 3

- d) This was the fourth analysis of our survey in which we got the proof for our hypothesis that the mobile is useful for Alzheimer patients. I have used chi square test to analyse the survey data. Chi square test is use to analyse the statistical data. The output of chi square test got X^2 calculated as 33.485197 and X^2 tabulated as 3.84. at significant level 0.05

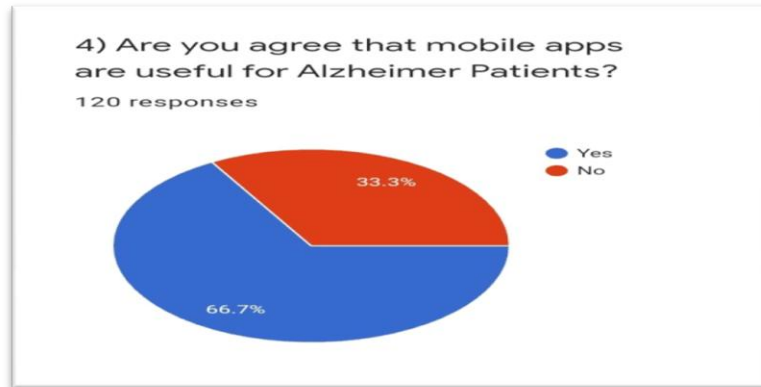


Fig 4

Since according to that,

$X^2_{\text{calculated}} > X^2_{\text{tabulated}}$.

Null hypothesis is rejected.

i.e Mobile apps are not useful for Alzheimer's patients or smartphones are not helpful for Alzheimer's patients.

Hence it is proved that smartphones are useful for Alzheimer patients.

V.RESULT

From the experiment, it is proved that people need to aware of Alzheimer's disease. The strength of dementia has mentioned in the result. So it is proved that mobile applications are the need for Alzheimer's patients. They can do their daily schedule on time as mobile gives notifications on smartphones. Also, to keep ourselves punctual these applications are useful. Also, one query concludes that many Alzheimer's applications people used and they have well knowledge of it. In the case of normal people, these applications are also beneficial. Care zone application is most ratted and most of the respondents placed the mark on this option. So, the assumption that we have made for research is finally accepted.

VI.CONCLUSION

Public health is the most important factor for every nation. But in daily routine, most of the people just run for money without taking proper health care. Millions of people may cause Alzheimer's in the 2025th century. As Alzheimer's makes difficulties in a daily routine it is difficult for the patient to do deal with this situation and also doctors, caretaker to handle them. But mobile games, applications are now available to overcome this problem. As a patient strength is going on and no any kind of treatment or tablets available for the disease so the main aim is to maintain the health of this kind of patient.

So, doctors, even the whole world has accepted that mobile application can maintain the patient's health normal. There are various features, games which help patients also to doctors. So many questionnaires are there for patients and increasing their hopes wishing type messages gave to patients screen even though they have scored low. So conclusion went on the statement that the hypothesis we have made is right and people also happy that smartphones in general technology are playing role in health care sectors. Mobiles are useful for Alzheimer's patients to maintain their health stable.

VII.ACKNOWLEDGEMENT

There is competition in every sector. People forget to give proper attention towards health and hence because of family stress, business stress, study or may be cause of any another reasons mostly people go ahead to dementia. By selecting this unique topic, I really go through the techniques that would not possible. So first thanks to my Prof. Swapna Augustine Nikale Department of Information Technology B. K. Birla college of of Arts, Science And Commerce (Autonomous) Kalyan, Thane, India for providing proper guidance and opportunity to do work on this topic. Also, thanks to those people who responded to my activities and surveys by taking part.

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