

## COMMENTARY

**Tobacco Counselling: A Humanistic Approach by Non-Human**Twinkle Sharma<sup>1</sup>, Yogesh Bahurupi<sup>2</sup>, Ashwini Mahadule<sup>3</sup>, Mahendra Singh<sup>4</sup>, Pradeep Aggarwal<sup>5</sup>

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**Abstract**

"Counselling is a professional relationship that empowers diverse individuals, families, and groups to accomplish mental health, wellness, education, and career goals. It's a type of applied psychology". When used for helping an individual in quitting a habit it requires using cognitive therapies. Artificial Intelligence (AI) has been increasingly used in the healthcare sector, but its use for counseling purposes is still questionable. Recently a virtual health worker has been introduced by World Health Organization (WHO) representing increased use of AI in healthcare. This article also explores the features of this virtual health worker and how the counseling process is done by a human health professional and what is different in counseling done by a virtual health worker.

**Keywords**

Tobacco Use Cessation; Health Care Sector; Mental Health; Health Workforce; Smoking Cessation

**Introduction**

World Health Organization has launched its first virtual health worker named as Florence under its new Quit smoking initiative on 10th July, 2020. (1) This virtual health worker is artificial intelligence based digital tool. It is launched in context of high need for counseling for tobacco cessation and only 30% of tobacco users worldwide have access to any tools. Smoking cessation has been a common target for digital health. But can we really be successful to counsel human beings using virtual health workers?

**Artificial Intelligence (AI)**

"Artificial Intelligence is the mechanical system of collecting knowledge and information and

processing intelligence of this universe and disseminating it to the eligible in the form of actionable intelligence" (2) Another definition articulated AI as "The science and engineering of making intelligent machines, especially intelligent computer programs" according to Alan Turing.

AI has various approaches namely "The Turing Test approach", "The cognitive modeling approach" which is a human-centered approach, "the laws of thought approach", and "the rational agent approach".

AI is classified into various types based upon level of intelligence incorporated in them. These levels are mainly "artificial narrow intelligence" synonymous with weak intelligence which conducts some simple

tasks. Another level is termed as “Artificial General Intelligence (AGI)” which is similar to human intelligence. Finally, “Artificial Super Intelligence” which is extra proficient compared with human intelligence. (3,4)

After achieving success over narrow AI, now the trend of research in AI is towards Artificial General Intelligence (AGI). This is because artificial narrow intelligence performs only defined tasks for which it is programmed and focuses on one subset of cognitive abilities like weather forecasting, analyzing raw data, or playing chess, whereas, AGI uses its intelligence as a whole and has many aspects that can be used in different situations. Any intellectual task of a level of the human being can be conducted by AGI.(5) This development of AGI was predicted to cause a shift in the trajectory of human civilization.(6)

AI is increasingly being used in healthcare as it promises greater efficiency. Evidence from several studies confirmed that the performance of AI is at par with humans at certain essential healthcare tasks such as disease diagnosing.(7,8) Research in AI has led to the production of models interpreting a radiograph, (9) using a smartwatch irregularity detection in heartbeats,(10) automatic identification of infectious diseases in media,(11) from retinal images discovering cardiovascular risk factors, (12) and also finding new targets of medications which are already existing. (13) There are also AI-based chatbot systems which functions as programmed conversational agents, health promotion, imparting education, and behavior modification. (14)

A New Zealand based Artificial General Intelligence research company named “Soul Machines” which is deploying digital humans known to be the first in the world for various industries in the field of banking, software, technology healthcare, and education. (15)

One of the recent products created by Soul Machines is “Florence” a digital person, autonomously animated by a digital brain launched on the 10th July 2020 by WHO described as first virtual health worker which uses artificial intelligence to dispense myths around COVID-19 and smoking and help people to develop personalized plan to quit tobacco. (16,1)

### Aims & Objectives

The objective of this article is:

- To examine whether a digital human can help a person in quitting tobacco and if this digital

human is sufficient enough to replace or assist human counselors or health workers.

- To assess if there are any drawbacks of virtual health workers concerning the therapies or techniques used by human counselors.

### Tobacco Cessation Counseling and Therapy: Humanistic Approach

Habits are hard to break especially the bad ones. Quitting a habit like smoking is a complex process that involves psychologic, environmental and physiological maintenance. There are certain variables, conditions which can impact on the outcome of the process of smoking cessation. For example, if a person is depressed or is schizophrenic, he or she will perceive the benefits of smoking more as compared to those after quitting smoking. To overcome such problems for a counselor or professional there are therapies used like cognitive behavior therapy (CBT) which is used along with behavior activation.(17)

Quitting a habit like smoking also requires a lot of encouragement and support, health education, and also the training for coping skills. Cognitive therapies are psychological treatments that address the interaction between thoughts, emotions, and behavior.(18) These help people in the development of different ways of behaving as well as thinking and it aims to lessen the psychological stress and cognitive behavior therapy (CBT) which focuses on helping people to be conscious of making a negative intervention and of behaviors which enhances the distorted thinking.(19) It includes habit termination, perceptions of risk (example for reoccurrence), self-efficacy for quitting, deterministic beliefs, positives and negatives of quitting along with troubled emotional condition.(19)

Conducting CBT is said to be more successful when it is done as a personal interaction with a health care professional since it ensures the patient and health professional to personalize the therapy to individual thoughts and behaviors of the patient or person.(20)

### The Virtual Health Worker: Florence

Florence is a virtual health worker with which we can interact via video or text. It is a trusted source of Information and requirements tobacco users to further toll quit lines all applications of the respective Nations. It builds a plan to quit tobacco, informs about COVID-19 myths, informs its user ill effects on tobacco affects health and advises why quitting is a good idea.(1)

It also develops a personalized plan for quitting tobacco which works using a method that follows a sequential plan by first of all setting a quit date. Followed by informing friends, family and coworkers in which the person is advised to tell the people around them about their smoking habit then counter the challenges to upcoming attempts to quit and lastly to discard the tobacco products from the tobacco quitters environment.(1)

Besides all these properties, there are also certain drawbacks to use this digital worker. First of all the speed of internet connection has a very big impact on the picture quality or call. Therefore, above all, the availability of this virtual health worker depends upon internet connection, equitable accessibility to which still is a major concern for developing countries.

There is a fixed set of questions that are programmed for virtual health workers other than which it cannot answer the questions if asked by the patient, which can lead to disappointment and failure in the process of counseling for quitting tobacco. It also relies on the answers given by the person which can at times may not be true for the first time. There is no change in expressions during the conversation as it is in the case with the living human being, also there is a lack of personalized interaction. According to a study, the number of words used in a conversation with an AI agent is less as compared to conversation done with a human being.(21)

## Summary

At times the person has failed so many times quitting that they are disappointed with themselves and they need encouragement, a certain kind of motivation, or at times probing by the health professional to answer questions truthfully. A virtual health worker has a limited role and be an additional supports in process of counseling.

We must accept certain drawbacks of using a non-human for counseling, since they lack empathy or unaware of behavioral or emotional aspects of a patient which can influence the interaction. To replace human being by non-human, a human touch is needed to react the way the patient expects. Quitting a habit; like smoking, demands regular monitoring to cope-up with withdrawal symptoms like depression and anxiety.

To summarize, we authors hypothesize that Florence or any other virtual health worker can provide

relevant assistance to health professionals but it cannot replace humans at this point in healthcare.

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