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ROLE OF ICT IN SUPPORTING NUTRITIONAL INTERVENTIONS DURING COVID- 19

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INTRODUCTION

ICT can be called as great ally for humans in this time of covid pandemic. Introduction of ICT has provided an advantage to explore world with more flexibility in teaching and learning even when going out is deemed as difficult with possible benefits including communication and real face time rather than sticking to information browsing. Information Communication Technology encompasses various devices like television, cellular phones, computers, desktop, radio and services including satellite system for mapping, online lectures video conferring, YouTube for songs or cooking videos etc. (Anerua & Azonuche, 2010). This can also be perceived as nutrition informatics which is the intersection of information, communication and technology. This work method will be expanded more and valued in future. ICT's nutritional intervention have paved way and given a new outlook to try out in improving nutritional and lifestyle behaviours of people which were earlier inaccessible due to distant location, lack of proper records etc.

ICT in nutrition field include various interventional strategies like computer and mobile games and apps in playstore or webstore, nutrition software and programs, text messages and online chats, and interactive video sessions using ppt etc. which has become source of knowledge, advise, learning and information during these lockdown crisis due to corona virus. Recent years have seen advancement in wearable tech like smart watches and mobile phone technologies reducing individual's burden and help providing more updated, accurate and consistent data for a variety of health conditions. Technological advances has made it possible for researchers and scientists to share their findings amongst people, telling which nutrient affect body's immunity, changes in body's DNA, gene expression due to virus and nutrition forming part of nutrigenomics and helping in development of assessment tools to advance research and give appropriate advice to patients (The Nutrition Society).

From measurements of energy expenditure to facilitate automatic dietary intake and online personalised counselling and educational services, technology supports all. In these times target audience for such applications can vary from individuals at home to people at work as well as professional service providers and caregivers with emphasis on self-monitoring, self-policy formation and self-management skills to see the extent of learning (Drigas & Karyotaki, 2013). It is perceived that nutritional interventions through ICT provide more personalized approach as compared to traditional ways as these web sources have more means to access previous records and ability to monitor current situation like taking pictures of

food consumed or making notes of food consumed in notes of mobile relieving from physical and mental burden of carrying notebook (Melo, 2017).

BRANCHING OUT OF ICT BASED INTERVENTIONS IN NUTRITION CAN BE SEEN FROM:

ARTIFICIAL INTELLIGENCE AND NUTRITION

Presence of on-body sensors mainly in form of smart watches have helped a great deal in assessing body's health and nutrition status which help in making rough estimations on heart rate, calories expended, estimation of fluid and solid foods consumed ratio to accounting for automatic dietary monitoring. Best example of usage of AI in covid can be seen by using robots in hospitals to reduce human to human interaction like the one used in Fortis hospital in Bangalore.

MOBILES, TABLETS & NUTRITION

For mobiles and tablets variety of inexpensive and diversified learning software apps can be downloaded, making them a worthy tool for gaining information, learning and even practising. Commonly used nutrition apps are healthifyme, nutrition guide for clinicians etc. for food and nutrition which can provide information on healthy dietary tips to build immunity and disease prevention and services for diet plan, diet counselling etc. some other apps include Zoom and Skype which provide a good interactive session. Nowadays mobiles are also fitted with motion sensors technology which converts accelerometer counts into amount of energy expended and by simultaneously recording temperature and heart rate along with to provide constant personalised communication and interaction between professional and user. Feedback options also provided to confirm the effectiveness of mobile apps. These smartphone applications also help as a source of motivation for improving their health (Drigas & Karyotaki, 2013). Mobiles and PC also cater to needs of children by introducing nutritional quiz and games which can help boost them not only for thirst of knowledge but also in promoting healthy eating and lifestyle habits (Melo, 2017). Taking notes of consumption of food on mobile helps in self-assessment and self-realization of right and wrong in eating habits.

SOFTWARE & NUTRITION

It includes usage of various types of software may it be word processing software or photo collections and clip art software used to keep records of food consumed and assess diet. These softwares also help in creation of professional-looking newsletters and banners like MS publisher, spreading copy of booklets, making them easily accessible and materials to meet diverse needs including nutrition education posters and counselling cards which are even inexpensive. Some software cater to public as whole with computers by adding pictures, videos, sound, animation, word arts and texts which increase comprehension and interest in informative topic, like for stimulating students interest animation is a great tool.

- **NUTRIENT ANALYSIS SOFTWARE**

Trending nowadays are nutrition software among people due to ease of calculation and reduction of time, only thing needed is to put ingredients and their amount and serving size , then calculation of the nutrient intake including energy to every vitamin and mineral present in

product or individuals or groups of individuals for one or more days. This software even has records of recipes and food found all over country like Dietcal, Dietsoft etc.

CLINICAL NUTRITION

In hospitals and clinical settings ICT play a major role from storing and documenting all medical records of patients which not only include physical and clinical attributes like body composition data but also accommodates analysis of dietary risk factor and reminders of preventive care. Assessing of nutritional status of patients using computer database records reduce chances of error allowing more accurate calculations which is specially needed in this dire time. Not only that even menu planning for patients, delivering information to kitchen for preparation, teaching about causes of disease and showing evidence on device, listing all symptoms, complications and need of dietary management calls for Technology.

NUTRITION AND ONLINE SERVICES

Lots of information is generally stored in electronic database, which can be easily retrieved from cloud space like Google drive, accessed and then used. Like the website of United States Department of Agriculture (USDA) provide details of nutrient present in product from its Food Data Central. AYUSH ministry specially put up guidelines on its official site along with providing information in portable document format(.pdf) on food during Covid. There is also nutrition guide for clinicians offering information related to disease and diet. Online services provide fast and low-cost access to nutrition related knowledge where data can be retrieved easily, read on screen or printed or user of that web can subscribe to be part of recent updates.

DISTANCE LEARNING AND APPLICATIONS

Distance learning is actually the need of hour and caters well in these times when physical classes are not possible. It is deemed as an effective way to ward off any risk of disease as well as offering quality and standardized knowledge as before. ICT in recent years have proved to be a good tool for medical field especially from storing food composition data as well as for food composition data users to help of dieticians, nutritionists, food scientists and medical doctors to share and convey knowledge and information.

COMPUTER CONFERENCING AND NUTRITION

Computer conferencing is a method of communication where face to face interaction is possible, not only one on one but it can cater several people simultaneously allowing communication with each other at same time. Phones and laptops are fitted with camera and microphone to assist the conference. Not only that applications like Zoom, Google Meet facilitates exchange of text, sharing PowerPoint presentations, documents etc. During this covid lectures are being carried out on Nutrivigilace with respect to covid. For video conferencing, an on-line satellite or telephone wire transmission tending through internet is required; this technology is now used worldwide without any geographical barrier for distance learning of students, meetings and interview, sharing visual images and screen sharing options with distant colleagues, working at or operating different worldwide sites simultaneously and problem consultation with experts (Kolasa & Miller).

During lockdown it is ICT which helps in keeping in touch with each other, share nutrition related information which is necessary as good food with immunogenic properties is crucial for health of body, particularly in times when we need a strong immune system to fight back.

Innovation in technology has even promoted behavioural changes, promoting and improving health (Melo, 2017). Tailored feedback and care are perceived to be best to show sincerity and results when operating online.

BENEFITS OF ICT

Less time consuming: Most programs take less time to browse in internet and instantly results are shown or presented. With just one click access technology has eased everyone's life.

Personalized nutrition: ICT promotes individualization, so nutrition information and communication caters to each person's need in personalized form. It is capable of providing interactive, individual tailored nutrition communication (Bouwman, 2005).

Beyond geographical barriers: ICT can be fully accessed by where you are present at the moment, with no need to move or migrate which has specially proved to be beneficial in these times of covid spread when going outside id not safe and barred.

Inexpensive: Only equipment you need are personal computer or laptop and an internet connection which will give you unlimited access to nutrition related knowledge, guidance or counselling.

OBJECTIVE

To research and explore the extent and usage of technology for disseminating nutrition information, knowledge and guidance.

METHODS AND MATERIALS

Data was collected using secondary sources of data which includes data from existing organizational documents, records from online sources and communication with professional staff, user and procedure manual and rulebook (Material and Methods; (https://shodhganga.inflibnet.ac.in/.). Also some data for ICT usage was searched from database of Research gate.

RESULT

ICT has dabbled in possibly every nutritional intervention it can from mobile apps and games to social media sites like Instagram to interactive softwares like Zoom. ICT has been a means of awareness and connection to outside world during covid and source to provide with lifestyle, health, immunity and nutrition tips. Popularity of ICT can be proved by naming a few popular apps like healthyfyme app, an editor choice app with over 10 million downloads; Nutrition guide for clinicians with 10 thousand downloads, PDF by AYUSH ministry is being forwarded to thousands of people through social platforms like whatsapp, Zoom app being used for national and international conferences and robots used in hospitals like Fortis.

CONCLUSION

ICT has been a major support for people during contagion spread specially for health and nutrition. They have proved to be quite flexible, cost effective and serve multiple purposes, to cater large number of population. Nutritional interventions should be accurate and trustworthy as a lot of people rely on this information and it relates to their health and acknowledgement. (Drigas & Karyotaki, 2013). It is important to note that only introduction and development of new and innovative technology will not guarantee the success and yield results of nutrition interventions and communication programmes. These ICT interventions will only be successful if they are able to reach out and cater large group of people providing them with knowledge and urging to make healthy food choices (Kolasa & Miller).

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