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Blog One

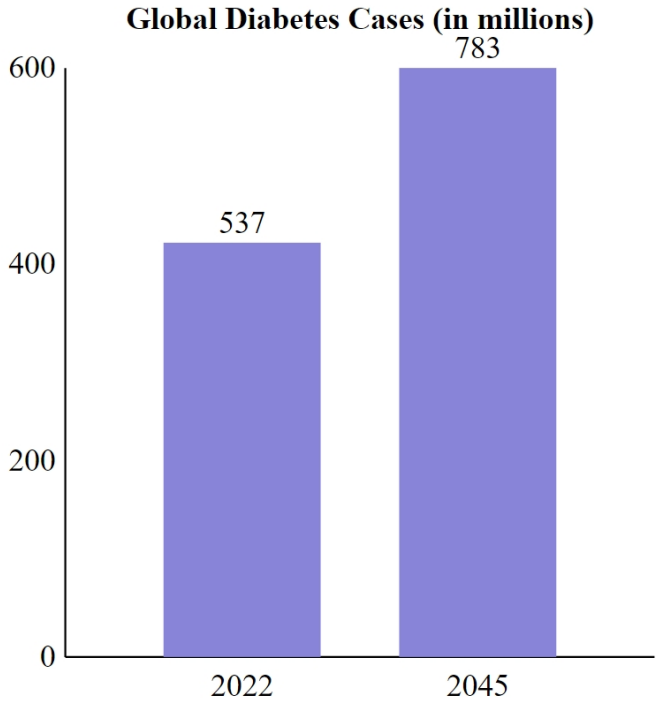
The Impact of TV on Diabetes Health Promotion

Introduction

Diabetes remains a critical global health concern. Television (TV) is also serving as an accessible digital technology for health information dissemination. This blog assesses TV's role in diabetes health promotion, considering target populations and specific intervention goals.

Diabetes as a Public Health Problem

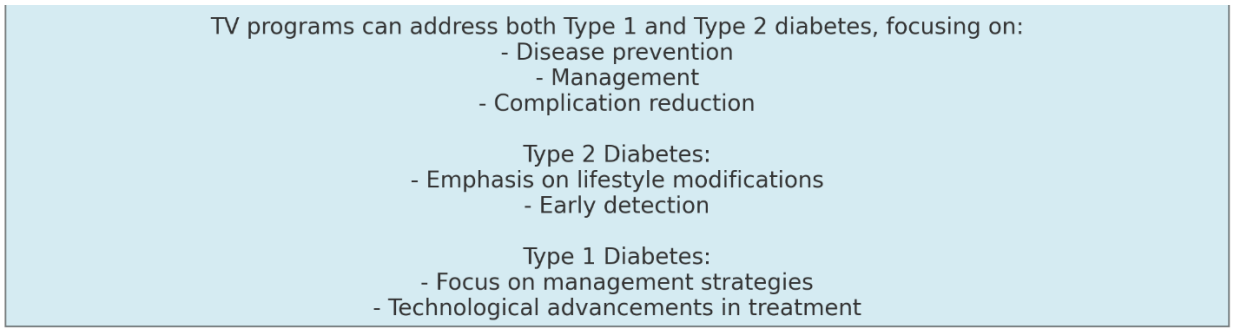
Diabetes affects approximately 537 million adults worldwide, with projections suggesting this number could rise to 783 million by 2045 (International Diabetes Federation, 2021). In the UK, about 4.9 million people have diabetes, with 90% of cases being Type 2 (Diabetes UK, 2022). These statistics call for the urgent need for effective health promotion strategies.



TV as a Digital Technology in Diabetes Health Promotion

TV-based interventions such as public service announcements (PSAs) and educational programs, can raise awareness of diabetes risk factors, prevention methods, and management techniques. Although TV viewership among the younger generation has dropped due to social media, it still remains a primary information source for older adults, who are at higher risk for Type 2 diabetes.

In the UK, people aged 55 and over watch an average of 5 hours and 40 minutes of TV daily (Ofcom, 2021), making TV an ideal medium for reaching this at-risk population. TV programs can address both Type 1 and Type 2 diabetes, focusing on disease prevention, management, and complication reduction. For Type 2 diabetes, TV interventions often emphasize lifestyle modifications and early detection. For Type 1, they may focus more on management strategies and technological advancements in treatment.



Evidence of TV's Impact on Diabetes Health Promotion

A study by Gollust et al. (2018) found that exposure to diabetes-related TV content was associated with a 14% increase in diabetes knowledge among viewers. Another study by Collins et al., (2023) reported that a TV-based diabetes prevention program resulted in

a 5.7% average weight loss among participants after one year, significantly reducing their Type 2 diabetes risk.

Advantages of Using TV as a Digital Technology in Diabetes Health Promotion

- Wide reach, especially among older populations
- Visual and auditory engagement enhancing information retention
- Cost-effective for mass communication

Disadvantages of using TV as a Digital Technology in Diabetes Health Promotion

- Limited personalization of information
- Passive nature of viewing may hinder active engagement
- Potential to exacerbate digital inequality for those without TV access

TV can help bridge digital inequality by reaching populations with limited internet access or digital literacy. However, it may also create new disparities for those without TV access.



Addressing the Shortfalls

To address improve the effectiveness of TV base interventions:

- TV interventions must be complemented with community-based programs for personalized support.
- Also, interactive TV features, like QR codes must be developed to link additional online resources.
- Combine TV campaigns with other media (radio, print) to reach diverse populations.
- Partner with healthcare providers to reinforce TV messages during patient consultations.

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Blog 2

MemoryCare+: Innovative Digital Health Promotion Intervention for Dementia

Introduction

Dementia is a serious global public health challenge that affects millions of people every year according to the World Head Organisation. This blog evaluates a newly designed smartphone application, "MemoryCare+," aimed to promote dementia health promotion.

Dementia as a Public Health Problem

According to WHO in 2021, over 55 million people worldwide live with dementia, with nearly 10 million new cases annually. In the UK, approximately 900,000 people have dementia, a number projected to reach 1.6 million by 2040 (Alzheimer's Society, 2021). Dementia profoundly impacts daily life, causing memory loss, communication difficulties, and behavioural changes. Caregivers also experience high levels of stress and depression (Cheng, 2017).

Description of MemoryCare+

MemoryCare+ is a comprehensive mobile application designed to support individuals with dementia and their caregivers. It introduces several innovative features:

1. **Adaptive Cognitive Exercises:** These exercises adjust difficulty based on user performance and time of day, considering cognitive fluctuations common in dementia.
2. **Gesture-Based Interface:** Recognizing potential motor skill challenges, the app incorporates simple gesture controls for easier navigation.
3. **Caregiver Dashboard:** This feature allows caregivers to monitor app usage, and cognitive exercise performance, and set reminders remotely.
4. **Augmented Reality (AR) Memory Prompts:** Users can place digital memory cues in their real environment, enhancing spatial awareness and daily task completion.



How MemoryCare+ Addresses Dementia

MemoryCare+ promotes dementia support through accessible and engaging tools. The adaptive cognitive exercises aim to maintain cognitive function, potentially improving quality of life (Brooker et al., 2020). The gesture-based interface and Caregiver Dashboard empower individuals with dementia to maintain independence while reducing caregiver stress. The AR Memory Prompts enhance daily functioning and reduce confusion by providing context-specific reminders.

The following are ways in which AR Prompt can help :

1. **Medication Reminders:** Virtual pill bottle appears near medication storage area, prompting timely intake.
2. **Daily Schedule:** A virtual calendar appears, showing day's activities and appointments.
3. **Family Recognition:** AR overlays on photos provide names and relationships of family members.
4. **Wayfinding:** Virtual arrows or footprints guide user to important locations in the home.
5. **Personal Care:** Virtual icons guide through daily hygiene routines in the bathroom.

Critical Discussion on MemoryCare+'s Impact

Advantages:

1. Personalized, adaptive approach to cognitive stimulation
2. Enhanced accessibility through gesture controls
3. Integration of caregiver support and monitoring
4. Innovative use of AR for daily living support

Disadvantages:

1. Potential technology barriers for older adults
2. Reliance on smartphone availability and capability
3. Privacy concerns related to data collection and sharing

Addressing the Shortfalls

To enhance user-friendliness and address potential shortfalls:

1. We will implement a simplified, high-contrast interface with large, clearly labelled interactive elements.
2. The app will provide step-by-step onboarding tutorials with options for audio guidance.
3. The team will develop a basic version compatible with older smartphone models.
4. The app will offer a privacy-focused mode with minimal data collection.
5. The team will create a helpline for technical support and guidance.
6. The team will collaborate with memory clinics and care homes to facilitate app introduction and ongoing support.

MemoryCare+ aims to provide an accessible, effective digital health promotion tool for individuals with dementia and their caregivers. The development will focus on rigorous user testing with the target population and continuous refinement based on feedback and emerging research in dementia care. As digital health interventions evolve, tools like MemoryCare+ have the potential to significantly impact dementia care and support, offering personalized, engaging, and accessible resources to those affected by this challenging condition.

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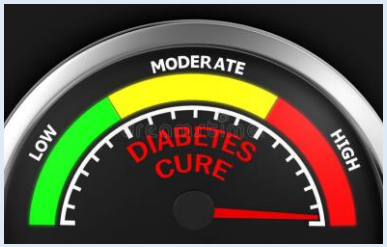
Promoting Diabetes Health through a TV-based Intervention: Applying Health Promotion Principles and Behavioral Change Theory

Background

Diabetes has become a global health concern, impacting millions of persons globally. According to the International Diabetes Federation (2019), over 463 million people today live with diabetes, and this figure is anticipated to climb to 700 million by 2045. In the United Kingdom (UK), the incidence of diabetes is as worrying, with a projected 4.8 million people diagnosed with the ailment and an additional 1 million persons going undiagnosed (Diabetes UK, 2021). Diabetes is connected with several health consequences, including cardiovascular disease, renal failure, and eyesight loss, which greatly damage the quality of life of afflicted persons (World Health Organization, 2021). Moreover, the economic impact of diabetes is enormous, with an anticipated worldwide cost of $760 billion in 2019 (International Diabetes Federation, 2019) and an annual cost of £10 billion to the National Health Service (NHS) in the UK (Diabetes UK, 2021).

Given the scope and significance of the diabetes epidemic, there is an urgent need for effective interventions to increase diabetes awareness, prevention, and treatment. Public health measures, both digital and non-digital, have been launched to address this problem. Digital technology treatments, such as smartphone applications, wearable devices, and telemedicine platforms, have showed potential in improving diabetic self-management and health outcomes (Kebede & Pischke, 2019). Non-digital interventions, such as community-based education programs and peer support groups, have also proved beneficial in raising diabetes awareness and self-care practices (Carey et al., 2018). This poster focuses on a TV-based digital health intervention meant to increase diabetic health among the community. Television, as a widely accessible and entertaining medium, has the ability to reach a huge audience and convey relevant health messages.

Diabetes TV Official



Health Promotion Values and Principles

Health promotion is governed by a set of basic beliefs and ideas that strive to enable people and communities to take responsibility of their health and well-being. These values and principles include empowerment, equality, engagement, and evidence-based practice (World Health Organization, 2021). Empowerment refers to the process of empowering people to obtain control over the elements that impact their health. Equity ensures that health promotion programs are accessible and customized to the needs of various populations, especially those who are most vulnerable or disadvantaged. Participation entails actively involving people and communities in the conception, implementation, and evaluation of health promotion programs.

The suggested TV-based digital health intervention for diabetes conforms with these basic health promotion ideals and concepts. The intervention will deliver accessible and practical information about diabetic self-care, helping viewers to make educated choices about their health. To achieve equality, the intervention will be tailored to address a varied audience, taking into consideration aspects such as language, culture, and socioeconomic level. The material will be presented in a straightforward and intelligible way, making it accessible to audiences with varied degrees of health literacy. Participation will be promoted via interactive features within the TV-based intervention, such as quizzes, surveys, and chances for viewers to contribute their experiences and ideas. This interactive method generates a feeling of ownership and participation within the target audience, boosting the chance of effective behavior modification. The intervention will also be founded in evidence-based practice, drawing upon the latest research on effective diabetes prevention and treatment measures. The material will be produced in consultation with healthcare providers, diabetes educators, and behavioral change specialists to ensure that the information offered is accurate, relevant, and successful in encouraging favorable health outcomes.

Behavior Change Theory

The intervention is grounded in Social Cognitive Theory (SCT). This theory emphasizes the interaction between personal factors, environmental influences, and behavior in shaping health outcomes. TV-based interventions as an aspect of SCT provides the following strengths:

Strengths:

Modeling and Observational Learning: TV excels at demonstrating behaviors through characters and real-life examples, allowing viewers to learn by observing.

Outcome Expectations: TV can effectively communicate the benefits of healthy behaviors and consequences of poor management.

Wide Reach: TV can disseminate consistent messages to a large audience, potentially influencing social norms.

Limitations:

Limited Social Connectivity: TV is a one-way medium, lacking direct interaction. It may not effectively facilitate local support groups or personalized community resources.

Self-Efficacy Challenges: While TV can demonstrate skills, it cannot provide hands-on practice or immediate feedback crucial for building self-efficacy.

Environmental Constraints: TV cannot directly modify a viewer's physical environment to support behavior change.



Utilizing the behavioral change theory to provide the TV-based intervention

Modeling and observational learning

The TV-based diabetic intervention will use the power of modeling and observational learning, important components of SCT. The intervention will include realistic characters or real-life persons with diabetes who exhibit successful self-management practices, such as good food, frequent exercise, and medication adherence. By viewing these models, viewers may acquire new skills and techniques for controlling their diabetes (Tougas et al., 2015). The intervention will also illustrate the good results associated with these habits, such as better glycemic control and higher quality of life, to urge viewers to adopt similar practices.

Self-efficacy and skill growth

SCT highlights the relevance of self-efficacy, or an individual's confidence in their capacity to do a certain activity, in encouraging behavior change (Bandura, 1997). The TV-based intervention will try to boost viewers' self-efficacy by offering clear, step-by-step instruction on diabetes self-management skills, such as blood glucose monitoring, healthy meal planning, and stress management. The intervention will also highlight success stories and testimonials from persons with diabetes who have overcome barriers and accomplished their health objectives, illustrating that positive change is feasible (Allegrante et al., 2019).

Reinforcement and motivation

Reinforcement, both internal and external, has a critical role in driving and sustaining behavior change (Bandura, 2001). The intervention will combine components of positive reinforcement by stressing the advantages of efficient diabetes self-management, such as higher energy levels, lower risk of complications, and enhanced self-confidence. The intervention will also inspire viewers to establish reasonable objectives and celebrate their achievement, offering a feeling of accomplishment and intrinsic drive. Additionally, the intervention may contain interactive aspects, such as quizzes or challenges, that give external incentives or acknowledgment for participating in favorable health habits.

Environmental and social factors

SCT acknowledges the importance of environmental and social variables on behavior change (Bandura, 1998). The TV-based intervention will address these impacts by establishing a supportive social environment for persons with diabetes. The intervention will urge viewers to seek help from family members, friends, and healthcare experts in their diabetic self-management efforts. It will also include information on community services, such as local diabetic support groups or educational programs, that may provide extra assistance and encouragement.

Expected Outcome

- Improved diabetes knowledge and awareness among viewers
- Enhanced capacity for diabetes self-care activities
- Empowerment of individuals to take charge of their health
- Increased participation in health-promoting behaviors
- Development of a supporting network for persons with diabetes
- Maintenance of good habits over time
- Reduction of health inequities
- Improved health outcomes for persons with diabetes
- Broader reach to benefit a large audience, including those facing barriers to traditional care
- Empowerment of individuals to lead healthier, more satisfying lives
- Reduced burden on individuals, families, and healthcare systems

Conclusion

The suggested TV-based digital health intervention for diabetes, built on the Social Cognitive Theory (SCT), has substantial implications for policy, education, and future research. The effectiveness of this intervention in boosting diabetes awareness, self-management skills, and healthy behaviors may inspire the creation of policies that enable the wider deployment of comparable digital health initiatives. This intervention may inspire policymakers to dedicate resources and financing towards the production and distribution of accessible, evidence-based health material via mass media channels (Wakefield et al., 2010). In terms of teaching, the intervention's emphasis on modeling, skill development, and self-efficacy corresponds with best practices in health education and promotion (Nutbeam, 2019). The effectiveness of this intervention may motivate the incorporation of SCT concepts and digital media into diabetes teaching initiatives, both in community settings and within the hospital system.



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