

# Serious Games and Preventive Self-Care for Diabetes: A Conceptual Framework

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## Abstract:

Diabetes is associated with many chronic diseases and disabilities such as ischemic heart disease, renal disease, visual impairment, peripheral arterial disease, peripheral neuropathy, and cognitive impairment among society. World Health Organization (WHO) statistics shows that 422 Million adults suffer from diabetes. 3.7 million of people's death due to diabetes and high blood glucose while 1.5 million people's deaths caused by diabetes. The risk factors for diabetes can be attacked by genetics, age, family history and some behaviours such as unhealthy diet and physical inactivity. However, some behaviours can be preventing in early stage such as educate people with knowledge or information about balance diet and nutrition food which is good or bad for diabetic patient. To overcome this problem, it requires an interesting approach to educate and keep in people mind the suitable food that help to avoid from diabetes diseases. This prototype applications namely as Grab2BeHealthy can be used by public to increase awareness, teaching tool and prevention while the professional healthcare can use it as a consultation tools. This game gives an information related to the healthy and unhealthy food that cause diabetes. The development of this prototype application is based on proposed conceptual framework of serious games for preventive self-care games. Players must grab a healthy food with a challenge and information related to the diabetes while playing the games. An evaluation study by 50 peoples from various gender and age range with basic computer knowledge has been conducted to get learners feedback on the game engine and motivation of playing the games. Thus, in this study, we map the characteristics of the prototype games with the conceptual framework for improving healthcare awareness in preventing diabetes to increase the understanding on healthy food for diabetic patient.

**Keywords:** Serious Games; Framework; Diabetes; Healthcare

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