World Academy of Science, Engineering and Technology
International Journal of Educational and Pedagogical Sciences
Vol:16, No:01, 2022

# Active Learning through a Game Format: Implementation of a Nutrition Board Game in Diabetes Training for Healthcare Professionals

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**Abstract :** Background: Previous programme evaluations from the diabetes training programme conducted in Changi General Hospital revealed that healthcare professionals (HCPs) are keen to receive advance diabetes training and education, specifically in medical, nutritional therapy. HCPs also expressed a preference for interactive activities over didactic teaching methods to enhance their learning. Since the War on Diabetes was initiated by MOH in 2016, HCPs are challenged to be actively involved in continuous education to be better equipped to reduce the growing burden of diabetes. Hence, streamlining training to incorporate an element of fun is of utmost importance. Aim: The nutrition programme incorporates game play using an interactive board game that aims to provide a more conducive and less stressful environment for learning. The board game could be adapted for training of community HCPs, health ambassadors or caregivers to cope with the increasing demand of diabetes care in the hospital and community setting. Methodology: Stages for game's conception (Jaffe, 2001) were adopted in the development of the interactive board game 'Sweet Score™ ' Nutrition concepts and topics in diabetes self-management are embedded into the game elements of varying levels of difficulty ('Easy,' 'Medium,' 'Hard') including activities such as a) Drawing/ sculpting (Pictionary-like) b)Facts/ Knowledge (MCQs/ True or False) Word definition) c) Performing/ Charades To study the effects of game play on knowledge acquisition and perceived experiences, participants were randomised into two groups, i.e., lecture group (control) and game group (intervention), to test the difference. Results: Participants in both groups (control group, n= 14; intervention group, n= 13) attempted a pre and post workshop quiz to assess the effectiveness of knowledge acquisition. The scores were analysed using paired T-test. There was an improvement of quiz scores after attending the game play (mean difference: 4.3, SD: 2.0, P<0.001) and the lecture (mean difference: 3.4, SD: 2.1, P<0.001). However, there was no significance difference in the improvement of quiz scores between gameplay and lecture (mean difference: 0.9, 95%CI: -0.8 to 2.5, P=0.280). This suggests that gameplay may be as effective as a lecture in terms of knowledge transfer. All the13 HCPs who participated in the game rated 4 out of 5 on the likert scale for the favourable learning experience and relevance of learning to their job, whereas only 8 out of 14 HCPs in the lecture reported a high rating in both aspects. 16. Conclusion: There is no known board game currently designed for diabetes training for HCPs.Evaluative data from future training can provide insights and direction to improve the game format and cover other aspects of diabetes management such as self-care, exercise, medications and insulin management. Further testing of the board game to ensure learning objectives are met is important and can assist in the development of awell-designed digital game as an alternative training approach during the COVID-19 pandemic. Learning through gameplay increases opportunities for HCPs to bond, interact and learn through games in a relaxed social setting and potentially brings more joy to the workplace.

**Keywords :** active learning, game, diabetes, nutrition
**Conference Title :** ICHME 2022 : International Conference on Healthcare and Medical Education
**Conference Location :** Bali, Indonesia
**Conference Dates :** January 14-15, 2022