

UNIVERSITI TEKNOLOGI MARA

**DIGITAL NUTRITION EDUCATION GAME: PROMOTING
HEALTHY EATING, WATER INTAKE, AND PHYSICAL
ACTIVITY AMONG SCHOOLCHILDREN AGED 7 TO 9 YEARS
OLD**

NOOR SYUHADA BINTI SAFAIN

Bachelor (Hons.) of Dietetics

Faculty of Health Sciences

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ABSTRACT

Proper nutrition and physical activity are essential for schoolchildren's psychological and cognitive development. Ensuring optimal growth requires providing the body with the necessary energy and nutrients. Hence, developing educational tools for childhood is crucial for fostering healthy eating habits and lifestyles. This study aims to develop and validate nutrition education mobile game application for children aged 7 to 9 years which focused on nutrition, water intake, and physical activity. The study was conducted in two phases: Phase 1: development of content and game based on literature reviews and Phase 2: content and face validation of the module and game. Validation was performed encompassing six aspects: two aspects related to content validity and another four to face validity. The game achieved I-CVI and S-CVI scores exceeding 0.78 and 0.80, respectively, indicating good content validity. Although one aspect of face validity did not reach the 75% agreement threshold from expert panels, the others did. Overall, the developed mobile game application demonstrates good content validity and are suitable for use by schoolchildren.

Keywords: Nutrition; Physical Activity; Schoolchildren; Nutrition Education Mobile Game Application; Content Validity; Face Validity.

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CHAPTER 1: INTRODUCTION

1.1 Background of Study

Adopting a diet that is both nutritious and well-balanced can provide the body with the necessary energy and essential nutrients it needs. According to Taylor and colleagues (2005), healthy eating is adopting practices and behaviors that align to improve, maintain, and enhance one's health. Eating healthily is also linked to staying hydrated by drinking water. Research on the US population revealed that increased drinking water, including tap water and bottled water, was linked to better nutritional quality. Water is the main element found in cells, tissues, and organs. It serves essential functions such as facilitating the hydrolysis of macronutrients and regulating overall cell function (Suh & Kavouras, 2018). Hydration is vital for optimal bodily function and overall health. Increased intake of drinking water was also found to be correlated with greater levels of physical activity (Gazan et al., 2016). Physical activity is defined as any movement of the body that requires the use of energy and is generated by the skeletal muscles (Caspersen et al., 1985).

It is important to note that the enhancement of overall health, growth, and cognitive development commences during childhood and adolescence. This process has the potential to result in positive outcomes and play a role in preventing future health problems and chronic disorders in the long term (Berenson et al., 1998; Evans et al., 1996). Based on the Malaysian Dietary Guidelines 2020, individuals are advised to adhere to three fundamental principles when it comes to their eating habits. These principles include maintaining a balanced diet, incorporating a variety of foods into their meals, and consuming foods in moderation (NCCFN, 2021). However, based on the report, Story et al., (2002) highlight a concerning trend observed in their study, the consumption patterns of food groups have already shifted from childhood to young adulthood, resulting in a decline in the overall quality of the diet. Also, a report by Kaur and colleagues (2017) indicates that schoolchildren between the ages of 7 and 13 years old suffer from inadequate hydration. A lack of water intake can result in a deficit of body fluids, leading to a condition known as hypertonic hypovolemia and dehydration. This condition has been linked to chronic diseases and can also negatively