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**MODULE DEVELOPMENT ON CAFFEINE CONSUMPTION EDUCATION FOR
YOUNG ADULTS IN MALAYSIA**

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ABSTRACT

Background: Modules are informational compositions of scholastic handiwork often used to educate a certain group regarding a particular topic. Caffeine has been the most popular psychoactive drug consumed worldwide. Roughly 85% of young adults aged 19 to 24 consumed caffeine from multiple sources daily. Overconsumption of this substance may cause trouble falling or staying asleep, anxiety, irregular heartbeat, and stomach problems.

Aim: This study aims to develop and evaluate educational modules, considering their understandability, suitability, and ability to educate young adults about caffeine consumption.

Method: This research utilized descriptive analysis, comprising three separate stages: (I) needs assessment, (II) designing and creating an educational module, and (III) evaluating the module. A group of six healthcare experts focused on pharmaceuticals, dietetics, nutrition, and linguistics assessed the visual aspect of the educational module by utilizing the Patient Education Materials Assessment Tool for print materials (PEMAT-P), Suitability Assessment of Materials (SAM), and Educational DISCERN Tool. The assessment of the educational module centered on understandability, actionability, and suitability.

Result: The educational module comprised 19 pages, including fundamental aspects of caffeine consumption education for young adults. The material was developed using the current articles and Food and Drug Administration (FDA) Guidelines. The infographic was created using the Canva Tool. The use of the English language was chosen to ensure convenience for the intended demographic as a more universally recognized language. The educational module obtained an 84.6% score for understandability, 91.7% for actionability, and 81.1% for suitability. The overall score for content validity index rating is 100.0%.

Conclusion: The developed educational module received excellent scores for understandability, actionability, and suitability, showing that healthcare professionals reacted favourably to the visual infographics. The outcome advocates that educational material is an effective intervention and suggests that using visual infographics may significantly improve education regarding caffeine consumption in young adults and promote improvement of knowledge, which will significantly lead to behavioral changes towards a healthier lifestyle.

Key words: Caffeine, caffeine consumption, young adults, educational module.

CHAPTER ONE: INTRODUCTION

1.1 Research background

Caffeine is the most commonly consumed psychoactive drug worldwide. Nearly 80% of the population consumed caffeine daily, with their daily intake around 200 milligrams (Fredholm, 2010). The recommended safe amount for daily caffeine intake is not more than 400 milligrams per day. This is roughly equivalent to four cups of coffee based on the U.S. Food and Drug Administration (FDA). According to Ching (2021), the most commonly consumed caffeinated product is coffee (58%), followed by chocolate (49%) and caffeinated teas (44%). The majority of the youths who consumed caffeinated products declared that the main reason for their consumption was to stay awake and operate. Others included that they prefer the taste and/or its health benefits. According to de Mejia et al (2014), some popular caffeine sources include plants and products such as coffee, tea, energy drinks, soft drinks, cola nuts, cacao beans, guarana berries, gums, and medications.

Caffeine intake not only impacts adults, but also children and teenagers. A study by Watson et al. found that adolescents (8-12 years old) consume caffeine – typically from coffees, sodas and teas – from 0 to 150 milligrams a day. This demonstrates that increased age and higher puberty scores will cause higher morning tiredness values, leading to higher caffeine consumption. On the other hand, lower total caffeine intake is associated with better internalization and decreased total behavioral problems. This causes early problems like restlessness, a poor sleeping routine, and morning tiredness. A study was conducted by Richard and Smith (2015) to examine the connection between caffeine consumption and stress, anxiety, and depression in 3071 participants by answering a questionnaire to record their caffeine intake separately and in total to associate and compare with their overall well-being. It has been discovered that there is a slight difference in the effects between men and women. Additionally, the effects associated with depression are found to be strongest in females. The author also reported that high consumption of caffeine, more than 2000 milligrams a week, increases the risk of developing anxiety and depression in both men and women.

In Malaysia, a study by Sulaiman et al. (2024) reveals that a significant number of young adults (78%) consume at least one caffeinated product daily. This is suspected due to the easy accessibility of caffeinated products everywhere today, like the growing number of cafes and various brands for instant coffees or teas. These easy-on-the-go beverages are also naturally