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Caffeine Consumption among Indonesian Population

Miftahul Jannah, Sharifah Rauzatul Jannah, Marthoenis

Faculty of Nursing, Syiah Kuala University, Indonesia

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Abstract:

Background: Caffeine is the most commonly used central nervous system stimulant in all age groups. High daily caffeine consumption can affect health. Most caffeine users are unaware of the amount of daily caffeine consumption or the effect of caffeine on the physical and psychological health of its users. This study aimed to determine the prevalence of caffeine addiction in Indonesian society.

Materials and Methods: This study used a Cross-Sectional Study design using an online questionnaire of 345 Indonesians. Data were collected using caffeine consumption questionnaires. The data is analyzed descriptively.

Results: More than half of the study's respondents were female (53%), had a higher level of higher education (71%), and were employed (71%). The average total caffeine consumption in the community is 234 ±191 mg daily.

Conclusion: Caffeine use in adults is quite high compared to that reported in other countries. The public should be better informed regarding the possible side effects that arise from the use of caffeine.

Key Words: Caffeine Usage, adult, Indonesian

I. Introduction

Caffeine is a psychoactive substance the most consumed in the world. Caffeine can be found in various beverages such as coffee, tea, cola, and energy drinks, and some supplements, medications, and foods such as chocolate and other foods containing cocoa [1]. Caffeine consumption up to 400 mg daily for healthy adults is not harmful to health [2]. The reasons users consume caffeine-containing products are usually related to caffeine's stimulant effects, including reducing fatigue, increasing physical energy, feeling more awake, enjoying flavors, socializing, improving mood, and reducing stress [3]. However, most individuals who consume caffeine-containing foods and beverages are unaware of The amount of daily caffeine consumption and the effect of caffeine on the physical and psychological health of users.

Caffeine intake varies across different types of beverages and within different population groups, especially in adults, with it estimated that more than 80% of the adult population in Western countries consume an average of 122-226 mg of caffeine per day [4]. Most adults consume caffeinated beverages derived from coffee, tea, soft drinks, and energy drinks [5]. However, coffee is the main source of caffeine in adult drinks in many countries and Indonesia. The International Coffee Organization (ICO) in 2020 shows that coffee consumption in Indonesia is still relatively low, at 3% of the world's coffee consumption level, or 294 thousand tons out of 10.16 million tons [6]. However, the Indonesian Individual Food Consumption Survey (SKMII) in 2014, ground coffee is the second most powdered drink consumed after tea (25.1%), with the largest amount of consumption, which is 6.0 grams per person per day (from the total powder drinks consumed as much as 8.7 grams per person per day) [7]. This study aims to determine the level of caffeine use in the form of coffee and others in the people of Indonesia.

II. Material and Methods

This cross-sectional study was conducted in early 2023 in Aceh province, Indonesia. The sample was selected conveniently through social media. A total of 345 respondents filled out the questionnaire that we were referring to. The initial questionnaire of the study contained demographic data from respondents, which included: age, gender, education, and employment status. The questionnaire to measure respondents' caffeine consumption based on caffeine-containing products was assessed using a questionnaire developed by Ágoston et al. (2018), and this questionnaire was also used by Booth et al. (2020). Respondents indicated how much they typically consumed each product per day on an 8-point scale (0 = never, 1 = less than once a week, 2 = several times a week, 3 = one serving per day, 4 = two servings per day, 5 = three servings per day, 6 = four servings per day, 7 = five or more servings per day). Furthermore, the value of caffeine in foods and beverages containing caffeine is based on sources from Mitchell et al. (2014), and the source of this caffeine value is also used by AlAteeq et al. (2021).

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III. Result

The results showed that the number of respondents in this study was 345, and the average age was 31±10 years. More than half are female (51%), and most have a higher level of education (71%) and are employed (71%). The average total caffeine consumption per day was 234±191 mg; respondents consumed one or two caffeinated drinks daily, and caffeine use in the low category < 200 mg daily (56.8%).

IV. Discussion

The results showed that the average total caffeine consumption per day in the community was 234 mg, and people consumed at least one or two caffeinated drinks daily. Community caffeine use is within levels considered moderate and safe recommended by drug and food control. The results align with research in New Zealand, which found that the overall average amount of caffeine consumption was 221 mg per day [1]. The moderate level of caffeine consumption in the community may be due to their awareness of the side effects of caffeine. Besides that, many factors affect caffeine use in the community, one of which is gender. The results showed that most respondents were female (51.0%). Women are synonymous with lower caffeine consumption preferences; for example, in coffee drinks, women tend to prefer coffee drinks with mixtures rather than pure coffee drinks. This indirectly lowers the amount of caffeine consumed. Overall estimates of average caffeine consumption in the population are presented as mg per day or mg per kg per day for all caffeinated beverage users by age and category. A Polish survey of 433 respondents showed that age had a significant relationship with the amount of caffeine it had ($p = 0.001$). Caffeine consumption was highest among respondents aged between 31 and 50 years (4.62 mg per kg per day) and lowest among respondents aged under 18 years (1.61 mg per kg per day) [11]. Some of the studies above state that caffeine consumption in adults increases with age and then tends to decrease in older adulthood. The consumption of caffein has both positive and negative effects. Since drinking coffee is a social activity among the study population, it helps improving the social interaction between them. However, uncontrolled use of caffein could lead to addiction, which could alter their daily activity. This statement however requires further investigations. The studies in future should consider the positive effect of caffein consumption in the population, while trying to prevent its negative consequences.

V. Conclusion

Adult age is the most dominant factor associated with caffeine use, where caffeine use in adults increases with age and then decreases in older adulthood. Public health professionals should provide psychoeducation interventions about the caffeine content of caffeinated products and limits on the amount of safe daily caffeine consumption and health risks resulting from excessive caffeine consumption. More study should be conducted to investigate the positive effects of social coffee drinking behavior.

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