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Assessment of knowledge and Pattern Regarding Caffeine Consumption among Females Nursing Students in Namas at Saudi Arabia

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Abstract: **Caffeine is the most widely consumed central-nervous-system stimulant. Three main mechanisms of action of caffeine on the central nervous system. *Aim*; assess knowledge and pattern regarding caffeine for consumption among females nursing students in Namas. *Subject and methods*; Descriptive cross section study design, tools for data collection, self-administrated questionnaire about sociodemographic characteristics, caffeine knowledge and caffeine pattern consumption. *Results*; study results shows that 64% of studied students have unsatisfied knowledge regarding caffeine knowledge, most of drinking coffee, and suffering from insomnia. Conclusion: Knowledge of caffeine among studied students regarding their adverse effect on health not satisfied and component of caffeine. Drinking caffeine consumption by the students are variable from different sources. Consumption of caffeine g drinks pattern in higher doses, so self-control and monitoring is necessary for the daily intake. *Recommendations* ; This can be achieved through awareness programs and there is need for educational programs about the health effects related to high consumption of caffeine.**

Keywords: **Caffeine, adverse effect of caffeine, issues of university students.**

1. INTRODUCTION

Caffeine plants was first cultivated in Yemen, whilst Turkey was the first country to roast the green coffee beans. Therefore, its fact that "coffee" finds its origins in Arab, where it is called "Qahwah". Persian physician Avicenna was mentioned coffee as a medication in his book "The Canon of Medicine". Initially coffee used as cosmetic to clean the skin, dry up and give a better odor to the body ***(Schenck, 2019).***

Caffeine is the most widely consumed central-nervous-system stimulant. Three main mechanisms of action of caffeine on the central nervous system have been described. Mobilization of intracellular calcium and inhibition of specific phosphodiesterases only occur at high non-physiological concentrations of caffeine ***(Fiani et al., 2021)***.

The scientific name of caffeine is trimethyxanthine (C8H10N4O2), consisting of specific A1 and A2 receptor subtypes on its adenosine component **(Gabrish, 2017).** Respectively, one receptor is responsible of providing the body with protective features allowing tissues to maintain stability, whereas the other subtype shows the major effect in developing the effects seen after caffeine consumption ***(M Al Ghali et al., 2017).*** Caffeine is readily available in coffee, tea, fizzy drinks, energy drinks, chocolate, and cola nuts. Caffeinated beverages have the highest contribution to the total caffeine intake per day amongst all sources of caffeine ***(Reyes& Cornelis, 2018)***.

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Caffeine has some benefits when consumed in moderate amounts, in 2014, more than fifteen millions of sixty- gram coffee bag was consumed by individuals globally. Compared to data obtained in 2011, the global coffee consumption showed an average annual growth rate of 2.5% increase in coffee intake ***(Timsina, 2020).***

Several studies showed the same trend in the consumption of caffeinated drinks, mainly energy drinks, among university students in the Gulf and Middle East. In the KSA, the limited studies showed that the high tendency of university students towards the consumption of caffeinated drinks, mainly energy drinks. Gender was a determinantfor caffeine consumption in many studies, where males tended to consume more caffeinated drinks that females ***(Alabbad et al., 2019).***

According to the Saudi ministry of health and Canadian ministry of health, daily caffeine consumption should not exceed 400mg that equals to 4 cups of coffee. AlthoughCoffee drinking has been associated with a lower risk of certain chronic diseases and overall mortality, it has been associated with a higher risk of fracture in females and some adverse effects in pregnancy ***(Reyes& Cornelis 2018).***

Moreover, women who are planning to get pregnant and lactating women are also at high risk, and their upper limit of daily caffeine intake is less than the general population. Caffeine has a huge impact on the cardiovascular system especially in toxic dosage. A study revealed that drinking more than 3 cups per day could increase the risk of myocardial infarction in males significantly. In addition, heavy caffeine consumptionas much as teacups ***(Temple et al,.2017).***

University students who are in high education levels use caffeine in order to be awakemost of the day by lessening their sleeping hours to maintain the balance between their academic and social life. In addition, they have to consume more caffeine so that they keep themselves concentrated Moreover, the more academic stress, the more sleep gets disturbed and this seen particularly in medical students since they spend more time in studying than other specialties ***(ALmuzayrie et al,. 2019).***

Unfortunately, many medical students believe that consuming caffeine will boost their academic execution. Scientifically proven that there is no relation between caffeine consumption and academic performance. Moreover, there are some studies concluded that students who shorten their sleeping hours have poor academic performance. In addition, a study found that caffeine intake among medical students is associated with late phonotype and obesity ***(Alsunni & Badar, 2011).***

The important roles of the nursing profession is health education, especially for sensitive groups in society, including young people in university education, in order to correct false beliefs and avoid health problems such as chronic diseases***(Temple et al,.2017).***

Significance of the study:

More than 100 million persons in youth stage around the world daily staple drink ***(WHO, 2018).*** Most of the Saudi population drink coffee. In 2019, a study among adolescent students in Pakistan reported 59.56% have no awareness of caffeine drink ***(Kabbash & Saied, 2020).*** University life is a critical transition stage through which young adults set out to discover others types of caffeine drink use. In addition, university students are at risk population regarding unhealthy habits and its effects on health-related quality of life ***(Fouad et al., 2020).***

Aim of the study

The aim of this study was to assess pattern for consumption and awareness regarding caffeine among females nursing students in Namas **through:**

1. Assess knowledge regarding caffeine among females studied students
2. Assess of caffeine drinking pattern among females studied students

Research questions

1. Is females nursing students have satisfied knowledge about benefits and sides effects of caffeineconsumption?
2. What are pattern for consumption regarding caffeine among females nursing students?

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2. SUBJECT AND METHODS

The subjects and method of the current study discussed under the following four (4) designs:

I. Technical Design

II. Operational Design

III. Statistical Design

IV. Administrative Design

I. Technical Design:

Study design:

Descriptive cross section study design was used in this study to achieved sated objectives.

Setting:

The study was conducted at Faculty of Applied Medical Sciences in Al-Namas, Girls Branch, and General Nursing Department, which is affiliated with the University of Bisha. The total number of female students is 196. **Subjects:**

Students enrolled in academic year 1443 in four levels (1st, 3rd, 5th and 7th) at First semester

Sampling:

Random sampling technique was used complete the sample size 80 females students from (1st, 3rd, 5th and 7th) and taken 20 students from each level.

Tools for Data collection:

The following one tool was used for data collection through self-administrated questionnaire was developed by the researcher in Arabic language after reviewing the literature and experts' opinion; it comprised the following parts;

Part I: Socio demographic data: students' socio-demographic characteristics including age, gender, marital status, residence, parents educational level and family income (Appendix I).

Part II: caffeine knowledge questionnaire to assess knowledge level around adverse effect of confine consumption and their effects on health.

Scoring system for knowledge: A correct answer was scored "one" and the incorrect "zero". The knowledge score was calculated by adding the scores for the correct answers. The total score of each section was calculated by summation of the scores of its items. The total score for the knowledge of a participant was calculated by the addition of the total score of all sections. As well As women total knowledge score was classified as the following:

- Satisfied ≥ 60 % of total knowledge score.
- Unsatisfied < 60 % of total knowledge score.

Part III: It was adopted from (Fagerström, 2011, Ali, 2015) to assess caffeine, type of caffeine drinking, time, daily number of caffeine and previous quitting trials and health conditions related to caffeine withdrawal.

II-Operational Design:

The design included preparatory phase, content validity, pilot study and fieldwork

Preparatory phase:

This phase started by reviewing of literature different studies and theoretical knowledge of various aspects of the problem using books, articles, periodicals, magazines, and internet. Tools of data collocation were prepared by the investigator based on a review of relevant literatures.

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Validity:

These tools were reviewed by jury committee from nursing field of faculty. Applied Medical Sciences in Bisha University to test its content and face validity then accordingly some questions were modified and other canceled.

Reliability: Test then retest after two weeks for the same sample 10%.

A pilot study:

A pilot study was carried out on 10% (8) of students to test the study tools for clarity, feasibility, applicability, and time required to fill out the questionnaires. The necessary modifications were done through omission of unneeded or repeated questions and improvements were made prior to data collection according to the pilot study results. The sample of the students who participated in the pilot study was involved from the main sample.

III: Administrative design:

Ethical consideration:

The aim of the study was explained to each student before applying the tools to gain her confidence and trust an oral consent was obtained from each women to participating in the study, after ensuring that data collected will be treated confidentially.

Felid of work:

- Data were collected over a three-month period that began in September 2021 and ended in November 2021.
- The students researchers were present at the College of Applied Medical Sciences for one day a week to collect data and choose the topic according to the previous criteria.
- The student's researchers met the students from 12 am to 3 pm.
- The student's researchers interviewed a group of female students for a period ranging from 2 to 3 hours per day.
- The questionnaire was presented to the college coordinator for approval to be distributed to the students during the school day
- I used the interview questionnaire, starting with introducing herself to each student and then explaining the purpose of the study to obtain the student's consent to participate in the study
- A self-questionnaire was distributed to the students to fill out, and the researcher was present to clarify any question.
- The students researchers asked the students after filling out a questionnaire to participate in the study, and then contacted them via phone (social networking sites) to ask any question

Statistical design:

- The data was entered into the SPSS statistics program to analyze the data by number and percent in table and graph and interpretation the results and dissemination.

3. RESULTS

Table (1) Distribution of scoiodemographic characteristics among female students under study sample (n=80).

Item		Number	Percent
Age	Less than 20	22	27.5%
	Greater than 20	58	72.5%
	Age Range	18-22	
	Mean age (years)	21±.81	

Level of study	Level one	14	17.5%
	Level three	24	30%
	Level five	16	20%
	Level seven	26	32.5%
Residence	Residence with family	76	95%
	Away from the family	4	5%
Mother's education level	illiteracy	6	7.5%
	Primary stage	14	17.5%
	Intermediate or high school	24	30%
	University stage	36	45%
Father's education level	illiteracy	2	2.5%
	Primary stage	2	2.5%
	Intermediate or high school	36	45%
	University stage	40	50%
:Social status	single	72	90%
	linked	8	10%
Is your monthly expenditure enough to drink coffee ?daily	yes	26	32.5%
	Approximately	30	37.5%
	No	24	30%

Table 1; Table 1; shows that the mean age of the studied students was 12.07±.81 years old with a range of 18-22 years, (32.5%) were students in seven level. Furthermore, more than half of those students (95%) stay from their family during the study period and (90%) of students were single. As regard to their monthly expenditure enough to drink coffee more than one third of them (32.5%) had adequate income.

Table 2: Distribution of correct caffeine knowledge among the studied students (n=80)

Item		Number	Percent
Caffeine component	Correct answer	12	15%
	Wrong answer	68	85%
Definition of caffeine	Right answer	76	95%
	Wrong answer	4	5%
Sources of caffeine	Right answer	58	72.5%
	Wrong answer	22	27.5%
Benefits of caffeine drink	Right answer	68	85%
	Wrong answer	12	15%
Caffeine side effects	Right answer	40	50%
	Wrong answer	40	50%
Symptoms of caffeine Withdrawal	Right answer	50	62.5%
	Wrong answer	30	37.5%

Table 2; regarding knowledge of proper definition of caffeine, (95%). Knew the exact definition of caffeine, while majority (15%) of students did not know the exact Caffeine component. Most students reported that did not know the exact Caffeine sources. The table also found that the correct knowledge of the benefits of caffeine was 85%, 50% of the studied students were correct knowledge of the sided effect of drinking caffeine, and 62.5% of their knowledge of the symptoms of caffeine withdrawal from the body.

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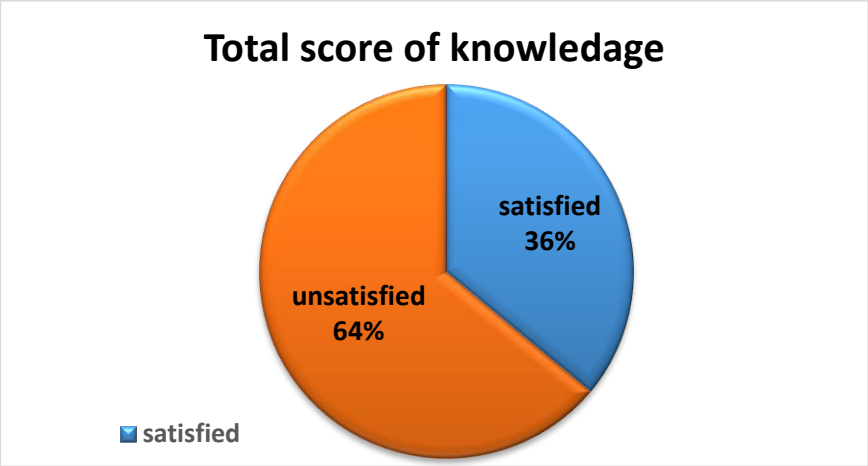

Figure (1) total soccer of caffeine knowledge among studied students (n=80)

Figure shows that 64% of studied students have unsatisfied knowledge regarding caffeine knowledge.

Table (3) Distribution of Caffeine consumption pattern as reported among Studied Student's (n=80).

Items	Number	Percent
How many times of caffeine drink daily		
▪ 1-2 times a day	66	82.5%
▪ 2-3 times a day	14	17.5%
Favorite time to drink caffeine:		
▪ Morning	42	52.5%
▪ Mid-day period	28	35%
▪ In the evening	10	12.5%
Feeling headache when you quit caffeine:		
▪ Always	0	0%
▪ Sometimes	40	50%
▪ Never	40	50%
Suffering from palpation after drinking caffeine		
▪ Always	16	20%
▪ Sometimes	40	50%
▪ Never	24	30%
Suffering from insomnia after drinking caffeine at night		
▪ Always	24	30%
▪ Sometimes	40	50%
▪ Never	16	20%
Drinking more caffeine during studying days :		
▪ Always	4	5%
▪ Sometimes	46	57.5%
▪ Never	30	37.5%
What's your favorite daily drink?		
▪ Tea	12	15%
▪ coffee	50	62.5%
▪ Cocoa or hot chocolate	2	2.5%
▪ All of above	16	20%

Table (3): Shows that (82.5%) They drink coffee 1-2 times a day and (17.5%) 2-3 times a day, (52.5%) They like to have coffee in the morning and (35%) They prefer to eat it in the middle of the day, Half get headaches when they drink coffee(50%) and the other half never(50%), (50%) Sometimes they feel a high heartbeat (30%) Never, (50%) sometimes When they drink coffee, they get sleep disturbances,(12%)always, (57.5%) Sometimes they just drink coffee and (37.5%) They never just drink coffee, (62.5%) They prefer coffee to tea and hot chocolate and (20%) They prefer all of the above.

4. DISCUSSION

Caffeine is the most popular beverage after water and is consumed daily worldwide in impressive quantities of nearly 1.6 billion cups. Caffeine increases alertness, improves memory, and improves mood. Although caffeine can have harmful physical consequences. Caffeine improves performance by reducing reaction times and improving attention performance, if taken in a specific dose. Improvements are seen in motor tasks and alertness, particularly when responses persist over time. Using caffeine to stay awake and alert is a long-term habit. A study showed that caffeine more than one third of studied students have satisfied knowledge. This finding similarly with, Korean study when studying caffeine consumption and academic performance among medical students ***(Kim et al 2015).***

The present study demonstrates, consumption of caffeinated beverages is a popular practice among the students, particularly during studies was cafe. Similar survey was done in University of Life sciences, Poland comparing between middle school pupils and university students. They found that cola drinks were popularly consumed by both the groups (97% school pupils and 93% university students) to improve well-being and to enhance intellectual or physical performance ***(Górnicka et al 2014).***

Another research was conducted by the authors in Jeddah, Saudi Arabia related to consumption of energy drinks among adolescents. About 55% of adolescents consumed energy drinks once or more each week, and 43% believed that these drinks provide immediate energy. Furthermore, about half of adolescents had no knowledge of the ingredients in energy drinks, and they did not know that these drinks contain caffeine ***(Abdulrahman et al.,2014).***

Our study demonstrated that the half of students suffering from insomnia after drink caffeine at night. A study was done among college students of a Medical University in Thailand on sleeping quality and sleeping pattern in relation to consumption of energy drinks, caffeinated beverages and other stimulants. It was reported in the study that prevalence of poor sleep quality was found to be 48.1%. A significant percent of students used stimulant beverages (58%). Stimulant use was found to be statistically significant and positively associated with poor sleep quality ***(Bhojaraja et al., 2016)***.

5. CONCLUSION

Knowledge of caffeine among studied students regarding their adverse effect on health not satisfied and component of caffeine. Drinking caffeine consumption by the students are variable from different sources. Consumption of caffeine g drinks pattern in higher doses, so self-control and monitoring is necessary for the daily intake.

6. RECOMMENDATIONS

This can be achieved through awareness programs and there is need for educational programs about the health effects related to high consumption of caffeine.

REFERENCES

[1] Abdulrahman O, Musaiger, Zagzoog N. Knowledge, Attitudes and Practices toward Energy Drinks among Adolescents in Saudi Arabia. Global Journal of Health Science. 2014;6(2):42-6.

[2] Alabbad, M.H., et al., Determinants of energy drinks consumption among the students of a Saudi University. Journalof family & community medicine, 2019. 26(1): p. 36-44.

[3] ALMUZAYRIE, A. F., ALOTAIBI, A. D., ALSABBAGH, M. O., ALMUGHAISEEB,

[4] Alsunni, A. A., & Badar, A. (2011). Energy drinks consumption pattern, perceived benefits and associated adverse effects amongst students of University of Dammam, Saudi Arabia. Journal of Ayub Medical College Abbottabad, 23(3), 3-9.

[5] Bhojaraja, V. S., Janardhan, H., Hameed, N. A., Fahmidha Gulsoom, A. R., & Ali, M. Z. (2016). Knowledge, attitude and practices towards consumption of caffeine containing drinks among the student population of Ras al-Khaimah medical and health sciences university, UAE. Int J Res Med Sci, 4, 3537-3541.

[6] F. A., & ANWER, R. EXPERIENCE AND HABIT OF CONSUMING CAFFEINE: A STUDY FROM COLLEGE OF MEDICINE, IMAM MOHAMMAD IBN SAUD

[7] Fiani, B., Zhu, L., Musch, B. L., Briceno, S., Andel, R., Sadeq, N., & Ansari, A. Z. (2021). The Neurophysiology of Caffeine as a Central Nervous System Stimulant and the Resultant Effects on Cognitive Function. Cureus, 13(5).

[8] Gabrish, D. L. (2017). Caffeine Use, Hours of Sleep, and Academic Performance of Undergraduate College Students (Doctoral dissertation, Kent State University).

[9] Górnicka M, Pierzynowska J, Kaniewska E, Kossakowska K, Wo niak A. School pupils and university students surveyed for drinking beverages containing caffeine. Rocz Panstw Zakl Hig. 2014;65(2):113-7

[10] ISLAMIC UNIVERSITY (IMSIU), RIYADH, KINGDOM OF SAUDI ARABIA ABDULLAH ATTULLAH ALSHAMMARI, WALEED MOHAMMED ALZAHRANI.

[11] Kim, Y. J., Jeon, E. M., Shim, S. B., & Seo, H. J. (2015). Effects of awareness and knowledge of energy drinks on consumption patterns among college students. Korean Journal of Health Promotion, 15(1), 31-38.

[12] M Al Ghali, R., Al Shaibi, H., Al Majed, H., & Haroun, D. (2017). Caffeine consumption among Zayed University students in Dubai, United Arab Emirates: a cross-sectional study. Arab Journal of Nutrition and Exercise (AJNE), 131.

[13] MARKET OF DHARAN, NEPAL (Doctoral dissertation, Department of Chemistry Central Campus of Technology Institute of Science and Technology Tribhuvan University, Nepal 2019).

[14] Reyes, C. M., & Cornelis, M. C. (2018). Caffeine in the diet: country-level consumption and guidelines. Nutrients, 10(11), 1772.

[15] Schenck, T. (2019). Holy grounds: The surprising connection between coffee and faith from dancing goats to Satan's drink. Fortress Press.

[16] Temple, J. L., Bernard, C., Lipshultz, S. E., Czachor, J. D., Westphal, J. A., & Mestre, M.

[17] Timsina, D. (2020). ESTIMATION OF CAFFEINE IN PACKAGED TEA OF LOCAL