Summer Training Report

By

Rashmi Arya (0971)

MBA (Hospital and Health Management)

2019-2021

ACKNOWLEDGEMENT

The completion of this undertaking could not have been possible without the participation of so many people whose names may not all be enumerated. Their contributions are sincerely appreciated and gratefully acknowledged. However, i would like to express my deep appreciation and indebtedness particularly to the following:

Dr. Monika Chaudhary (Associate Professor, IIHMR University) for her endless support, encouraging guidance and kind supervision in the completion of my research project.

To all the friends, relatives and others who in one way or another shared their support. My parents are also an important inspiration for me. So, with due regards, I express my gratitude to them.

Above all, to the great almighty, the author of knowledge and wisdom, for his countless love and blessings. I thank you all.

PART 1-

REPORT ON WORK FROM HOME

ASSIGNMENT:

“CAFFEINE CONSUMPTION HABITS AND PERCEPTION AMONG COLLEGE STUDENTS”

CONTENTS

PAGE NO.

ABBREVIATIONS

ABBREVIATION	FULL FORM
1. BMR	Basal Metabolic Rate
2. Dr.	Doctor
3. Govt.	Government
4. GRAS	Generally Recognised As Safe
5. i.e,	....that is,
6. mg	milligrams
7. m.o.a.	....mechanism of action
8. NHFPC	National Health And Family Planning Commission
9. NHI	National Health Insurance
10. NVS	Newest Vital Sign
11. NZ	....New Zealand
12. PPTs	PowerPoint Presentations
13. REALM	....Rapid Estimate Of Adult Literacy In Medicine
14. rs/-	Rupees
15. TCU	Texas Christian University
16. TOFHLA	...Test Of Functional Health Literacy in Adults
17. US	United States
18. WHO	World Health Organization

ABSTRACT

College students in today's society have become dependent on caffeine in order to perform at their best in multiple facets of their lives, including classes and internships. This study focuses on the specific reasons why college students are consuming caffeine, what type of caffeinated beverages they are consuming and how much they are consuming on a daily basis and their perception towards caffeine consumption habits. The results from the study indicate that coffee is the most popular caffeinated beverage among college students. Major situations in which students consume caffeinated products include while studying for exams, at work, headache, when didn't get enough sleep, to help with focus and concentration, to stay up late. College students understand the health benefits and concerns of caffeine intake, are not influenced by their peers when making caffeine purchase decisions and are very price sensitive.

INTRODUCTION:

Caffeine also called as Guaranine/Methyltheobromine/1,3,7-Trimethylxanthine/Theine is a CNS stimulant. It is the world's most widely consumed (more than 80% population of the world) psychoactive drug which is legal and unregulated in nearly all parts of the world. It is produced by a process called infusion and is consumed to relieve or prevent drowsiness and to improve cognitive performance.

Talking about its physical properties, its Molar mass is 194.19 g/mol, Density is 1.23g/cm^3, and Melting point is 235 to 238 C. Routes of administration is by mouth, enema, rectal, or intravenous. The most prominent mechanism of action(m.o.a) is that it reversibly blocks the action of adenosine on its receptors and consequently prevents the onset of drowsiness induced by adenosine. It's Onset of action is 1 hour, and Duration of action is 3-4 hours. Elimination half-life in adults is 3-7 hours and in infants 65-130 hours and excretion is 100% by urine.

IMPACT ON HEALTH: Caffeine can have both positive and negative health effects.

Positive- **caffeine citrate** is on the World Health Oranization(WHO) Model List of Essential Medicines. It is also classified by the US Food and Drug Administration as **GRAS** (Generally Recognized As Safe). It reduces fatigue and drowsiness; improves wakefulness, alertness, attention, concentration, task performance, and motor coordination. It increases Basal Metabolic Rate(BMR) in adults, improves muscular strength and power. It can prevent and treat the premature infant breathing disorders (Bronchopulmonary Dysplasia of prematurity and Apnea of prematurity), Orthostatic hypotension treatment, improves airway function in people with asthma. It also has a modest protective effect against Parkinson's disease, Alzheimer's disease, and cancer(Brain et al., 2000)[1] Caffeine consumption is associated with good health effects including decreased risk of dementia and depression among women(Aubrey,2013)[2].

Negative: Higher caffeine intake (>100 milligrams(mg) in children,>400mg in adults, >300mg per day in pregnant women) can cause physiological, psychological and behavioural harm. It affects gastrointestinal motility and gastric acid secretion. In post-menopausal women, it accelerates bone loss. At higher doses (>400 mg), caffeine can cause and worsen anxiety. Mild physical dependence and withdrawal symptoms (headache, fatigue, depressed mood/irritability, flu-like symptoms) may occur if caffeine consumption exceeds 100 mg per day.

Caffeinism-consumption of 1-1.5 grams (1,000-1,500 mg) per day of caffeine. Symptoms includes nervousness, irritability, restlessness, insomnia, headaches, palpitations and caffeine dependency.

Caffeine overdose syndrome- A clinically significant temporary condition that develops during or shortly after the ingestion of large amounts of caffeine (more than 400-500 mg at a time). Symptoms includes restlessness, nervousness, excitement, insomnia, flushed face, diuresis, gastrointestinal disturbance, muscle twitching, tachycardia, cardiac, arrhythmia. Since there is no anti-dote nor reversal agent, treatment is directed toward symptom relief.

RATIONALE OF THE RESEARCH:

1. To determine the amount of caffeine consumed by a sample of college going students.
2. Beliefs regarding the caffeine consumption.
3. Perceived benefits and adverse effects of caffeine consumption.
4. Reasons for consuming caffeine.

OBJECTIVES OF THE RESEARCH:

1. To identify the different categories of caffeine intake by college going students.
2. To identify the circumstances of caffeine intake.
3. To identify any symptoms experienced due to caffeine intake.

RESEARCH QUESTION:

What are the caffeine intake habits and perception of the effects of caffeine use among college students?

LITERATURE REVIEW:

There is a knowledge gap in the perception of caffeine in college going students and the effects on the human body. More research is needed in this area. The reviewed studies

indicated the prevalence of energy drinks, especially among the younger generations. The consumption of energy drinks is increasing and there is a need for education among the younger population, as caffeine creates different effects on the human body. Although energy drinks may appear to have positive effects, the prior studies indicated that there is a need to question the negative results from excessive caffeine consumption.

METHODOLOGY:

1. Research method- Descriptive Quantitative research (Online survey)
2. Data collection- 26th -30th June, 2020
3. Sample size-195
4. Target- Male and female; over 17 years old

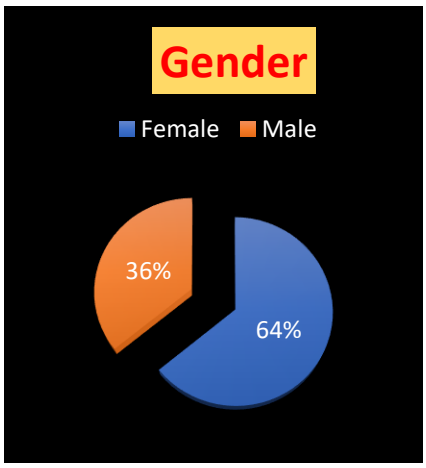
A 21- question Online survey was developed using google form and as sent to 200 participants of age above 17 years (college gong students) via internet (whats app, email, Instagram) living in different states and countries.

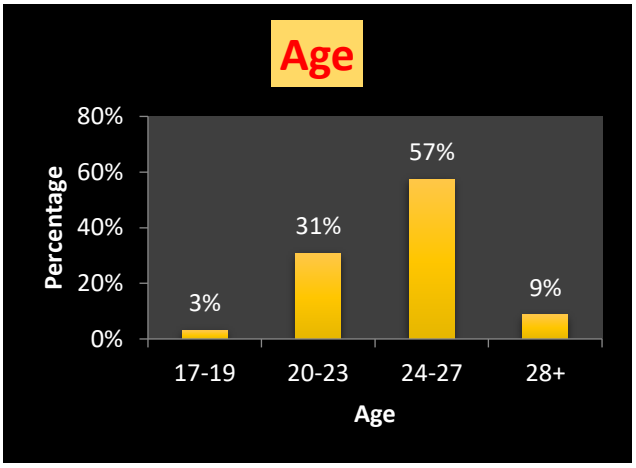
Participants were asked close ended, open ended, likert scale, demographic (age, sex) questions. Close-ended questions were regarding frequency, type, timing, spending, purpose of caffeine consumption, their beliefs while buying the caffeinated products. Open-ended questions were regarding the advantages, disadvantages, any adverse effect they have experienced, their belief about safe quantity of caffeine consumption. Likert scale questions included knowledge about quantity of caffeine consumed, dependency on caffeine.

Out of 200 participants, 195 responded.

DATA ANALYSIS:

1. **DEMOGRAPHIC DATA ANALYSIS:**



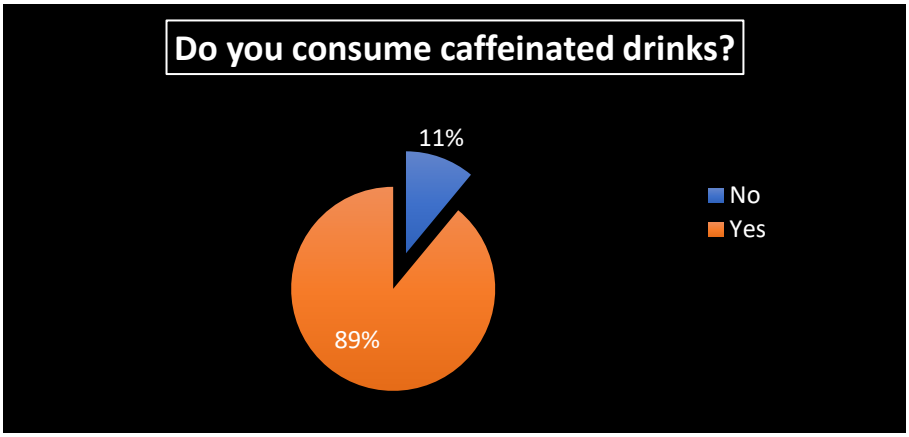


As the questionnaire was sent to 200 participants, only 195 responded. So, sample size for this study was 195.

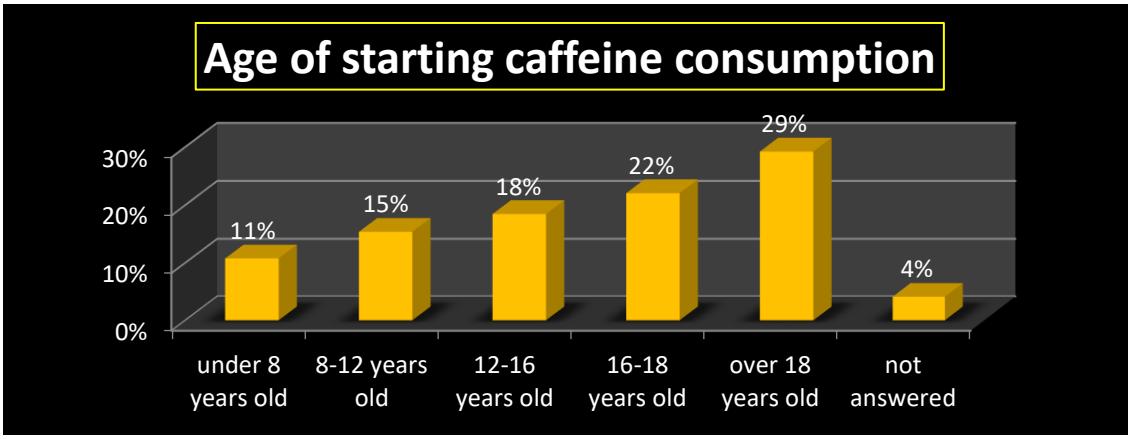
Graphs show that in our research majority of the respondents were females(64%) and are of age group 24-27

---

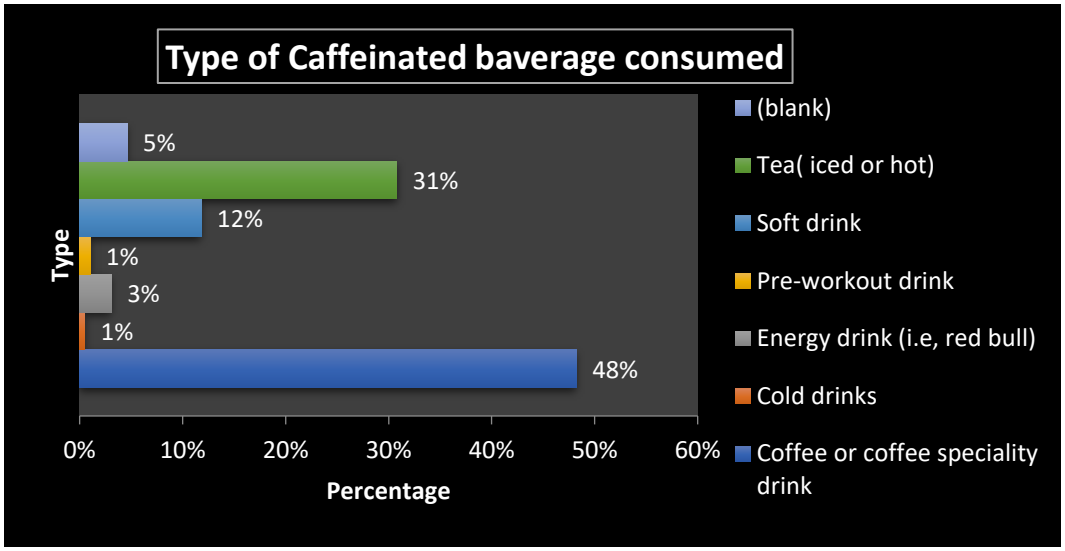
2. **CLOSE-ENDED QUESTIONS ANALYSIS:**



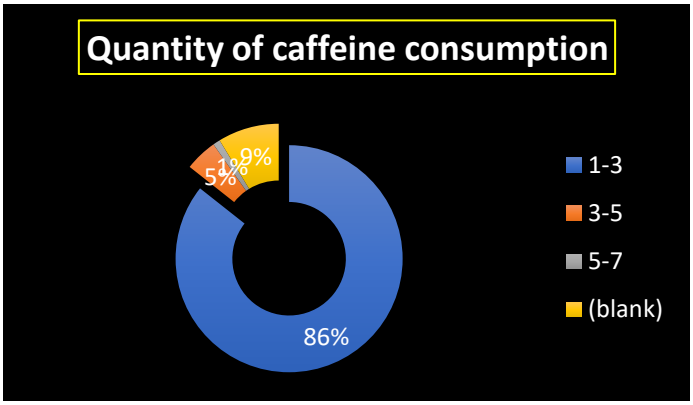
89% population consumes tea, coffee or any other caffeinated beverages.



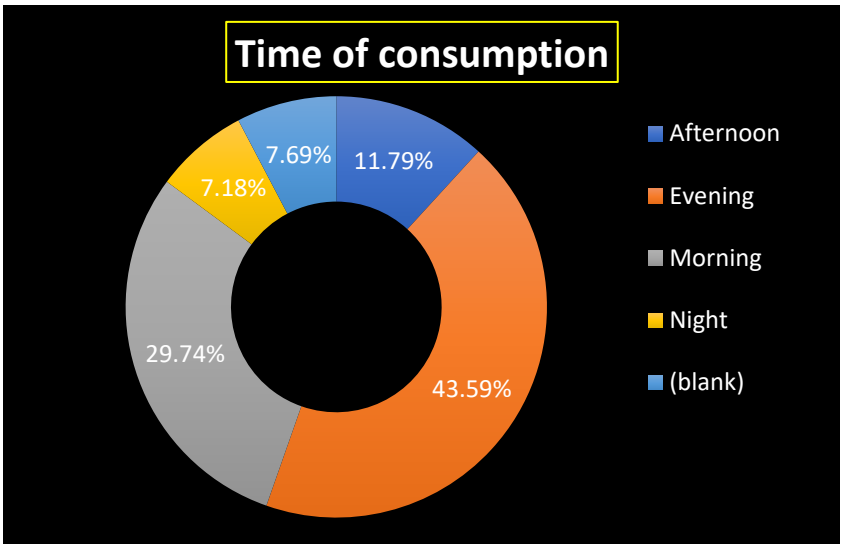
Out of people who consumed caffeine, around half of them started consuming it when they were 16 years or old.



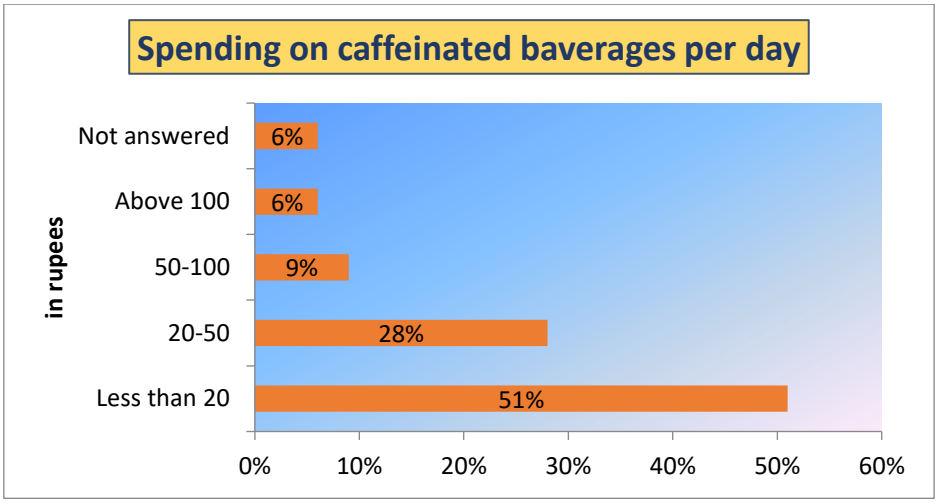
Most commonly used caffeinated beverages are Coffee and Tea respectively.



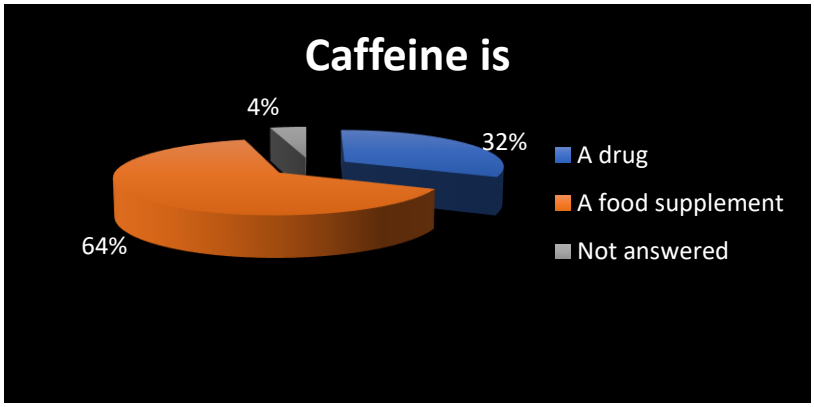
As we know upto 400mg (4 cups of brewed coffee) caffeine is safe, majority of them consumes caffeine in a safe quantity (1-3 beverages per day).



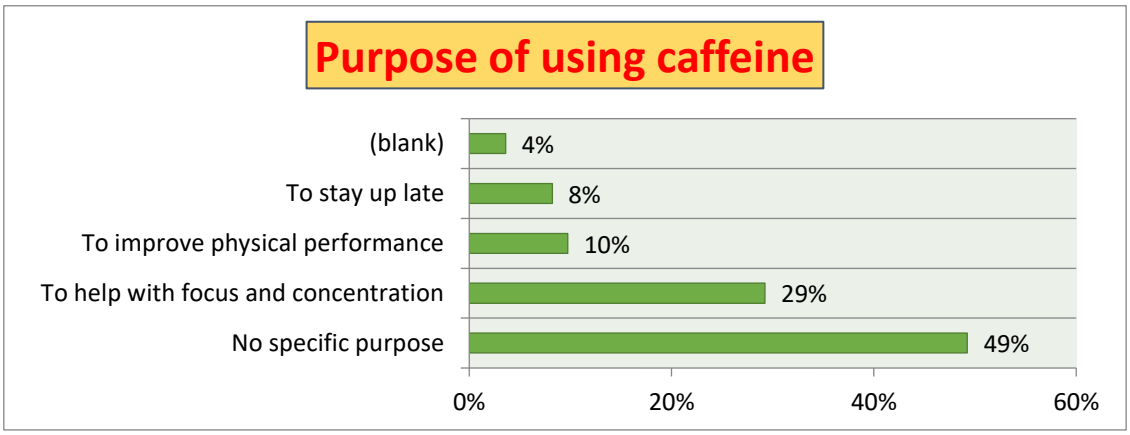
Caffeine is mainly consumed for awakening, alertness so is consumed mainly in mornings and evenings.



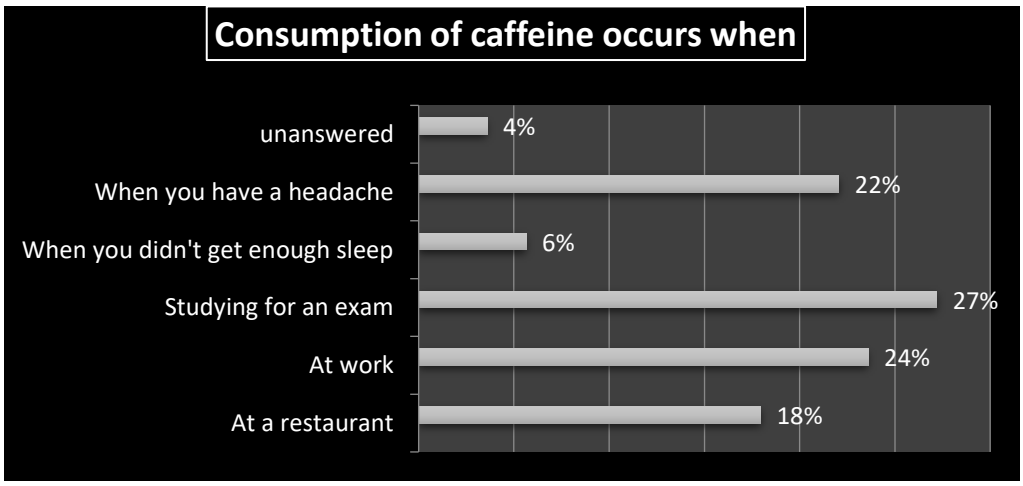
As the study was concerned with college students, and students get pocket money from parents so they have limited amount of money to spend. That's why spending on caffeinated beverages is also less(less than 20 rupees(rs/-)



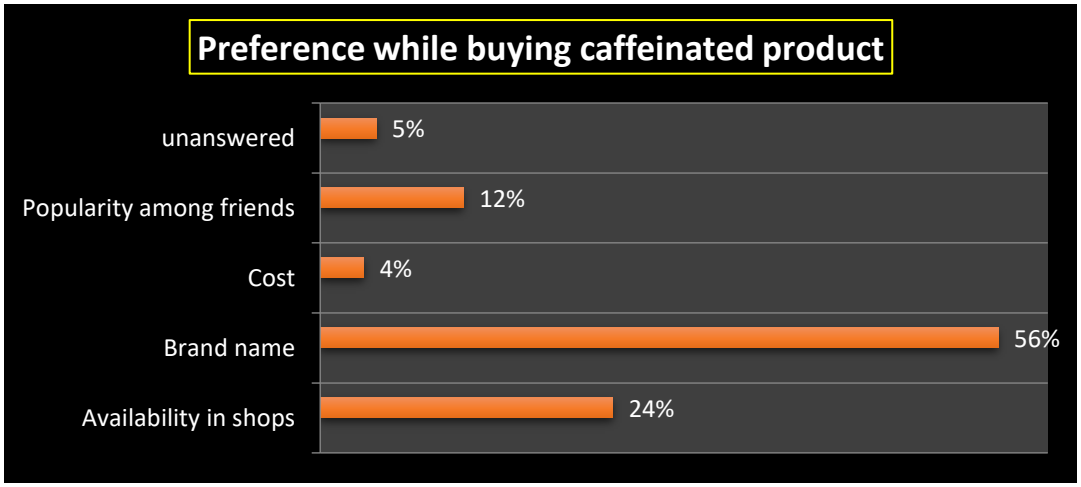
64% population thinks caffeine to be a food supplement, 32% thinks it is a drug. Rest 4% do not answered this.



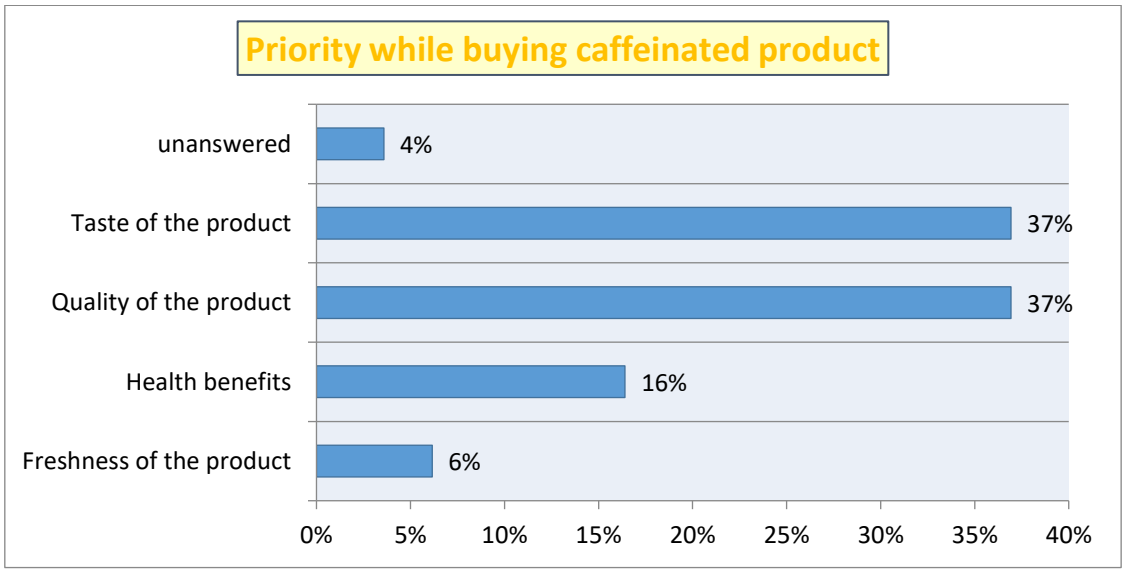
Previous studies showed that the main reason for consuming caffeine was for alertness, activeness and concentration but in my study approximately half of the participants consume caffeine for no specific purpose and only 29% consumes it to focus and concentrate.



When asked about a situation in which they will consume a caffeinated beverage, almost 3/4th population consumes it while working, studying, awakening or had headache. Only approximately 1/4th consumes it in restaurants when they are with someone.

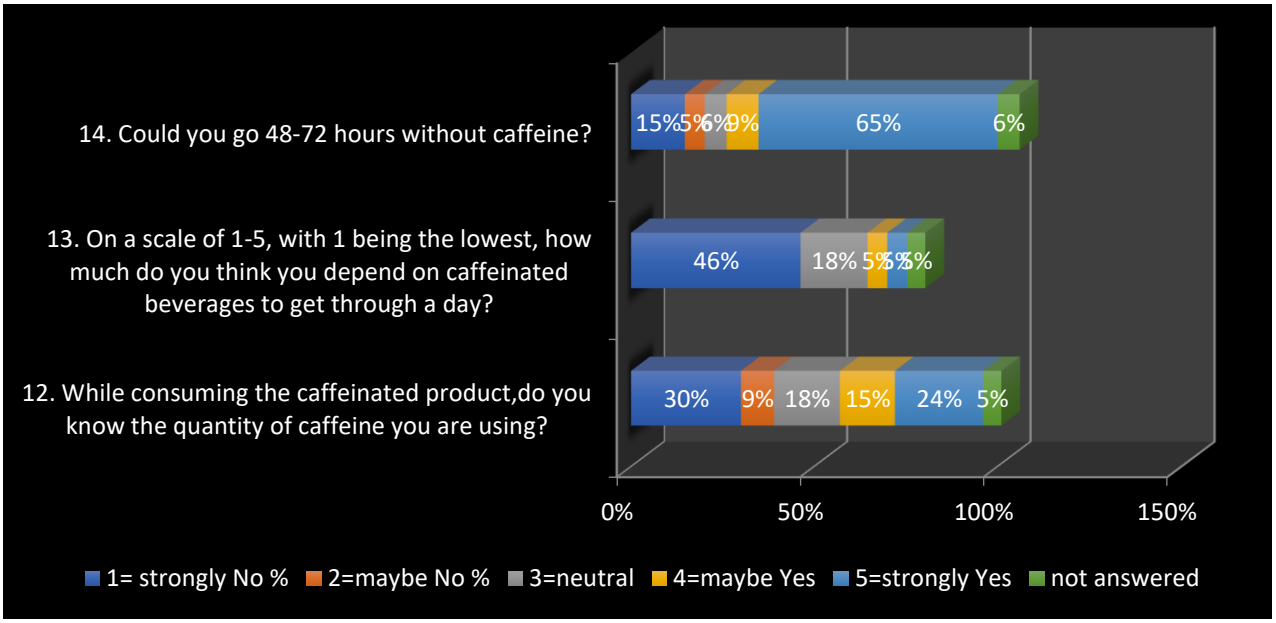


While buying caffeinated product, a large fraction of people go for brands (56%), some buys what is available in shops (24%), while cost matters very less(4%).



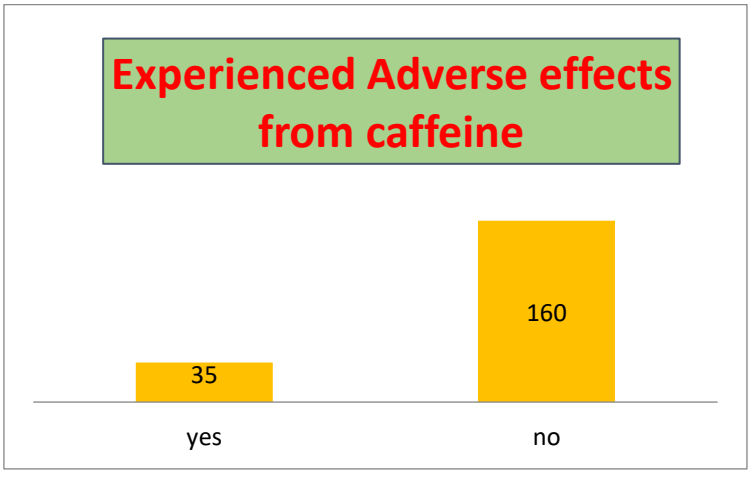
Also, taste and quality (37%) matters the most while buying caffeinated products, while health benefits (16%) and freshness of the product (6%) matters less.

3. LIKERT-SCALE QUESTIONS ANALYSIS:

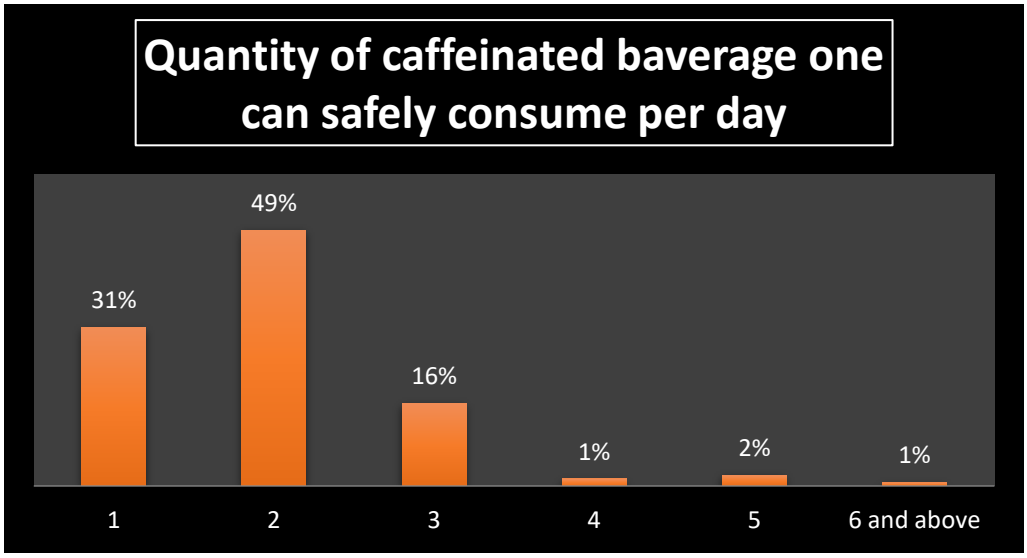


- While consuming caffeinated baverages,30% don't know the quantity of caffeine they are using, while 24% know the quantity they are consuming.
- 46% population were not at all dependent on caffeine, while only 5% were very much dependent on caffeine to get through a day.
- 15% of the population can't go 2-3 days without caffeine, while 65% can easily go without consuming caffeine for 2-3 days.

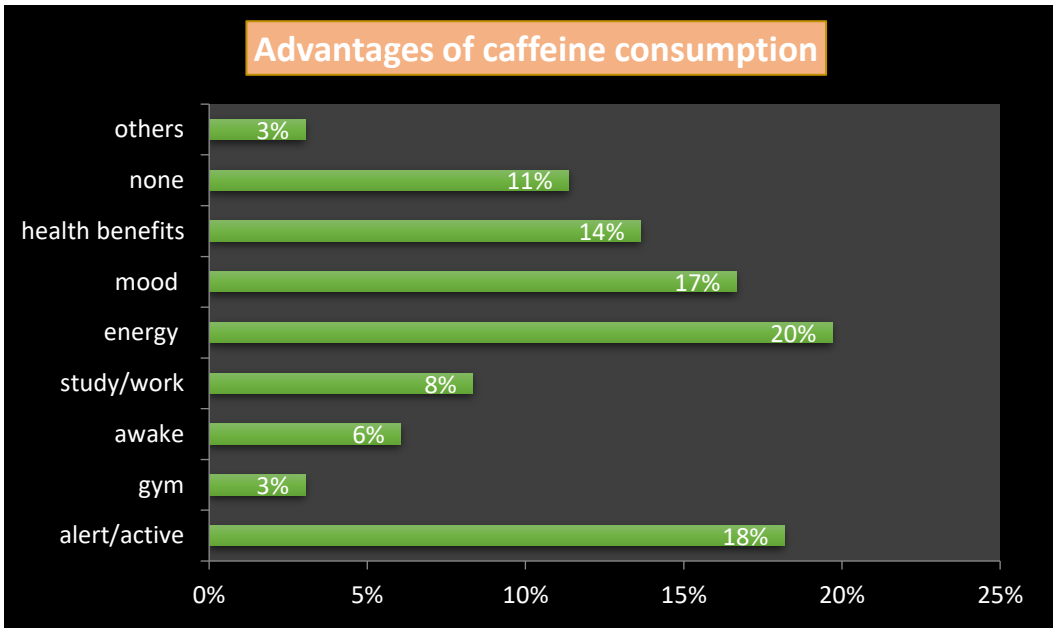
4.OPEN-ENDED QUESTIONS ANALYSIS:



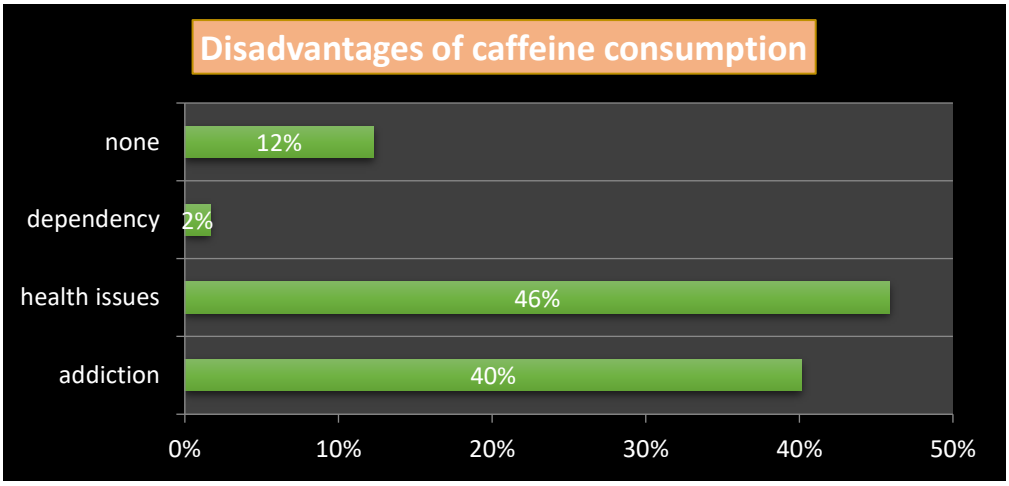
160 people out of 195 do not experienced any adverse effect after consuming caffeine while only 35 experienced some adverse effects like anxiety, insomnia, gastric problems, intestinal problems acne, addiction etc.



When asked about what they think of the quantity of caffeinated beverages one can safely consume per day,49% thinks 2 cups a day is safe, while 31% says only 1 cup a day is safe.



When asked about the advantages of caffeine consumption, most people think it provides energy (20%), alertness (18%), elevates mood (17%), health benefits (14%). 11% thinks there is no advantage of consuming caffeinated beverages.



When asked about their opinion on disadvantages of caffeine consumption,46% thinks it causes health problems, while 40% thinks it becomes an addiction. 12% thinks there is no disadvantages of consuming caffeine. Only 2% thinks we become dependent on caffeine if consumed regularly.

DISCUSSION:

College students seem to enjoy drinking caffeinated beverages because it is more of a social thing and is not too expensive. The phrase “Let’s have a cup of coffee’ is often synonymous with “Let’s have a conversation.” [3] Also, because college students consume more caffeinated products, we see many cafeterias or shops are opening up in college campuses.

The results indicated that 89% of our participants consume caffeinated beverages. This is consistent with the belief that caffeine is the most widely consumed psychoactive substance in the world.[4] . Females (64%) are the higher caffeine consumers than males(34%). Similar findings were also found in a study done in Texas Christian University(TCU) in 2012[5]. Also, coffee consumption was highest in TCU followed by soda ,tea and ultimately energy drinks as post graduates were included in the study. We also found in our study that coffee consumption was highest followed by tea, soft-drinks and energy drinks.

As majority of them are of age 24-27 years, they understand the health benefits and concerns of caffeine.They consume it in a safe quantity and around one fourth of them knows exactly how much caffeine they are consuming.

Media has a strong influence on young generation's lifestyle and perception regarding things. Drinking coffee or energy drinks is what makes them cool, this is what we see in our study as around 50% of them started consuming it for no specific reason and after 16 years of age. Caffeine purchase decision is also influenced by media.

They are very price sensitive; majority of them spends less than 20 rs/- per day on caffeinated beverages. Our findings suggest that the coffee and Tea are the most popular caffeinated beverages. And the most important attribute while buying caffeinate product are Brand name, Taste,Quality and health benefits.

Caffeine intake seems to be more closely correlated while studying for an exam. 86 percent caffeine drinkers consume 1-3 caffeinated products per day ,mainly in evening.

64% of the participants thinks caffeine is a food supplement ,only 32% thinks it to be a drug. Majority of them thinks one can consume 1-2 baverages per day safely(100-200 mg brewed coffee).

Also, majority of population were not at all dependent on caffeine and can go 2-3 days without caffeine and a very less population is dependent. Caffeine consumed in lower doses has a positive effect[6] Brice and Smith(2002) found that doses of caffeine either 65mg 4 times over a 5 hours period or 200mg taken all at once had a positive effect on alertness,improved performances, and target detection. Also, they found that both these doses increased anxiety[7]. Respondents think caffeine consumption provides energy, alertness, elevates mood, health benefits while consuming it in excess can cause health problems, addiction and dependence on caffeine. Caffeine has been associated with adverse health effects such as hypertension[8], neurostimulation[9], and insufficient sleep[10]. Only few of them experienced adverse effects like anxiety, gastric problems, intestinal problems, acne, addiction, insomnia etc.

In contrast to perceived disadvantages of consuming caffeine, there are also many advantages of caffeine,that is why many people consumes caffeine on a daily basis. For healthy adults,consuming caffeine in moderate doses(<400 mg) is not harmful. It increases alertness,activeness,reduces fatigue, therefore, improving task performance(Reid)[11].

As in previous studies, we saw youngsters drinking more energy drinks and are not aware of the bad effects caused by consuming excess caffeine. But, in this study we found out that only 3 percent of participants consume energy drinks that too in limited quantity. Also, they are aware of the benefits and problems caused by caffeine and are not dependent on caffeine.

Although caffeine does not produce life threatening harmful health effects as produced by classic drugs of addiction like heroin, cocaine or nicotine, but some respondents becomes addicted to it that they can't get through a day without it. More research is needed to determine the applicability of substance dependence criteria to caffeine. Also, assistance should be made available for those who feel that their caffeine use is problematic and have been unable to quit on their own.

CONCLUSION AND RECOMMENDATIONS:

From the research findings, we can conclude that majority of the population consumes caffeine and 64% of them are females and are of the age group 24-27. Almost half of them started consuming it when they were 16 years or old.The most common caffeinated baverages are coffee and tea that they consume in evenings mostly that too in limited quantity. Spending on caffeine is very less being the college students. Brand name,quality and taste matters the ost while buying caffeinated products.

We saw their perception on caffeine consumption as they think it to be a food supplement and is consumed mostly during exams preparations,to help with focus and concentration,provides energy,alertness and if consumed in excess, can cause health problems and addiction.

Majority of them feels 1-2 baverages of caffeine is safe to consume per day,but upto 400 mg of caffeine(roughly 4 cups of brewed coffee) is safe to consume(recommended). And, a very less population is dependent on caffeine.

REFERENCES

1. Brain M, BryantC, Cunningham M. How Caffeine Works;2000.

Available from: http://www.science.howstuffworks.com/caffeine1.htm.

2. Aubrey A. Young adults Swapping Soda for the Super Buzz of Coffee. In: The Salt. NPR. Writer ;2013. Available from: http://www.npr.org/blogs/thesalt/2013/01/14/169161207/young-adults-swapping-soda-for-the-super-buzz-of-coffee.

3. Stroebaek P.(2013) Let's Have a Cup of Coffee. Symbolic Interaction,36(4):381-39

4. Snyder, S., and Skylar, P.,1984, Behavioural and molecular actions of caffeine: focus on adenosine,J Psychiatry Res. 91-106

5. Traylor A, Summers S, Advisors: Dart L, Michael J. Caffeine Consumption among College Students. Poster: Texas Christian University, Fort Worth Tx.2012.

6. Story M,Neumark-Sztainer D,French S. Individual and environmental influences on adolescent eating behaviours. J Am Dietc Assoc 2002;102 3 Suppl:40-51

7. Brice CF, Smith AP. Effects of caffeine on mood and performance: A study of realistic consumption. Psychopharmacology(Berl) 2002;164:188-92

8. Uiterwaal, C., Verschuren, W., Buen-De-Mesquita, H., Ocke, M., Geleijnse, J., Boshuizen, H., Peeters,P., Feskens, E., and Grobbee,D.,2007,Coffee intae and incidence of hypertension,Am J Clin Nutr,85,718-723

9. Winston,A.P., Hardwick,E., and Jaberi,N.,2005, Neuropsychiatric effects of caffeine,Advances in Psychiatric Treatment,11,432-439

10. Anderson,B., and Juliano, L., 2012, behaviour,sleep,and problematic caffeine consumption in college-aged sample,J caff Res,2,38-44

11. Reid TR(n.d.). Caffeine---what's the buzz? National Geographic.

Available from: http://www.science.nationalgeographic.com/science/health-and-human-body/human-body/caffeine-buzz/.

ANNEXURE

Data collection method- Questionnaire.

*Required

1. Do you consume caffeinated drinks? *

- Yes
- No

2. At what age do you start consuming caffeinated beverages?

- Under 8 years old
- 8-12 years old
- 12-16 years old
- 16-18 years old
- Over 18 years old

3. What type of caffeinated beverages do you usually consume?

- Coffee or coffee speciality drink
- Tea(iced or hot)
- Soft drink
- Energy drink (i.e, red bull)
- Pre-workout drink
- Other:

4.About how many caffeinated beverages do you consume daily?

- 1-3
- 3-5
- 5-7
- 7 or above

5. When do you have the most consumption of caffeine?

- Morning
- Afternoon
- Evening
- Night

6. About how much a day do you spend on caffeinated beverages?(In rupees)

- Less than 20
- 20-50
- 50-100
- Above 100

7. In your opinion, do you consider caffeine to be a drug or a food supplement?

- A drug
- A food supplement

8.For what purpose would you consume a caffeinated beverage?

- To stay up late
- To help with focus and concentration
- To improve physical performance
- No specific purpose

9. Which of the following describes a situation in which you would consume caffeinated products?

- When you didn't get enough sleep
- Studying for an exam
- When you have a headache
- At work
- At a restaurant

10.While buying the caffeinated product,what do you consider?

- Brand name

- Popularity among friends
- Availability in shops
- Cost

11. What matters to you while buying caffeinated products?

- Taste of the product
- Health benefits
- Freshness of the product
- Quality of the product

12. While consuming the caffeinated product,do you know the quantity of caffeine you are using?

Yes Not any idea

1 2 3 4 5

13. On a scale of 1-5, with 1 being the lowest, how much do you think you depend on caffeinated beverages to get through a day?

Not at all dependant Very much dependent

1 2 3 4 5

14. Could you go 48-72 hours without caffeine?

Can't say Sure

1 2 3 4 5

15. Have you ever experienced any adverse effects from consuming caffeinated beverages? *

- Yes
- No

16. If Yes, what adverse effects have you experienced?

Your answer

17. In your opinion,how many caffeinated beverages a day can someone safely consume?

Your answer

18. In your opinion, what are some of the advantages of consuming caffeinated beverages?

Your answer

19. In your opinion, what are some of the disadvantages of consuming caffeinated beverages?

Your answer

20.How old are you? *

- 17-19
- 20-23
- 24-27
- 28+

21.Gender? *

- Male
- Female
- Others

PART-2

Report on Online Course:

“HEALTHCARE ORGANIZATION AND DELIVERY MODELS”

TABLE OF CONTENTS

PAGE NO.

COURSE NAME: Healthcare Organization & Delivery Models

COURSE DESCRIPTION:

In this course, I had examined how delivery system reform and disruptive innovation are the key leadership topics in healthcare. Understanding the structure of the organization and its current delivery systems help leaders understand why there are poor outcomes and the need to change. Exposure to other more efficient and cost effective systems in all parts of the world allow the opportunity for leaders to incorporate these ideas into the next iteration of their own healthcare delivery.

I analyzed the structures of the U.S. and other global healthcare systems and how healthcare is delivered worldwide, their impact on health outcomes, and comparative analysis of their strengths and weaknesses.

OBJECTIVES:

1. To analyze the U.S. and other global healthcare systems.
2. To compare the healthcare delivery systems across the globe.
3. To examine healthcare delivery systems role on patient health outcomes.
4. To formulate a plan to incorporate innovation into high performing healthcare delivery systems.

COURSE CONTENT:

This course “Healthcare Organization and Delivery Models” is provided by Doane University on edX e-learning platform. It is a 15 hour advanced, self-paced course. Course instructor is Dr. Kinberley Meisinger. All the course content is in English language.

SECTIONS	SUBSECTIONS
1. US and Global Health Comparison	1> Overview 2> Healthcare in the United States 3> Healthcare in the Switzerland 4> Healthcare in the Norway 5> Healthcare in the China 6> Knowledge Check and Discussion
2. The Role of Healthcare Leaders	1> Leaders Roles 2> Leaders Roles Discussion
3. Health Disparities and Health Literacies	1> Health Disparity Vs Health Literacy 2> Health Disparity Vs Health Literacy Discussion
4. Facets of Patient and Health Outcomes	1> Readings 2> Measured Outcomes 3> Case Study Peer Review
5. High Performing Health Systems in the US And Abroad	1> Readings 2> Discussion
6. Strategic Planning for Innovation	1> Readings 2> Key Developers 3> Strategic Planning Discussion
7. Course Assessment	Course Assessment

METHODOLOGY:

In this course, a combination of videos, PPTs, Case Studies, Reading Material and Discussion was done.

SECTION 1- US AND GLOBAL HEALTH COMPARISON

- In this section,'Multinational Comparisons Of Health Systems Data,2017 by The Commonwealth Fund. (PPT.) was done.

- Video lectures on Healthcare in US,Switzerland,Norway, and China was given.
- Research Paper was also given on Comparison of Health Care Systems in the US, Germany and Canada.

SECTION 2- THE ROLE OF HEALTHCARE LEADERS

- Research Papers were given regarding “Middle Managers’ role in healthcare innovation implementation” and “Leader roles for innovation and strategic thinking and planning.
- Article on Power of Positive deviance and case study based on Positive Deviance to improve patient safety was given.
- Article was also given on Leaders’ dual roles when managing innovation.

SECTION 3- HEALTH DISPARITIES AND HEALTH LITERACIES

- Concepts and Measures of Health disparities and health equity was given. And research paper on “An Examination of Changes in Social Disparities in Health Behaviors in the US” was also given.
- To understand the link between health literacy and physical health, a research paper was given.
- “No Equity,No Triple Aim: Strategic Proposals to Advance Health Equity in a Volatile Policy Environment” research paper was given on it.

SECTION 4- FACETS OF PATIENT AND HEALTH OUTCOMES

- Article on Healthcare Delivery Performance: Service, Outcomes, and Resource Stewardship was given.
- The Strategy to Transform Health Care and The Role of Outcomes was explained using a powerpoint presentation.
- Case study on “A Strategy for Health Care Reform- Toward a Value Based System” was also given.

SECTION 5- HIGH PERFORMING HEALTH SYSTEMS IN THE US AND ABROAD

- In this section, I learned how to create High-Reliability in health care organizations through research papers.
- Ten recommendations for policy makers on Designing a high performing healthcare system for patients with complex needs was given.
- A research paper on a comparative international analysis on Health system frameworks and performance indicators in eight countries (Australia, Canada, Denmark, England, Netherlands, New Zealand(NZ), Scotland, and Us) was given.

SECTION 6- STRATEGIC PLANNING FOR INNOVATION

- Research paper on Advancing the State of the Art in Healthcare Strategic Planning was given.
- Article explaining "Will Disruptive Innovations Cure Health Care?" was given.

KEY LEARNINGS:

1.When we did **US AND GLOBAL HEALTH COMPARISON,** we found that

In US-

- Healthcare system is complex and expensive.
- Healthcare spending per capita is highest($9892 in 2016).
- Medicare(provides health services to people above 65 years and individuals with documented disabilities), and Medicaid(provides health services to low income population) are present.
- Strengths include Advanced State of Technology, High Life Expectancy after 80, and World leader in Pharmaceutical Innovation.
- Major drawbacks of US healthcare system is that more than 42 million people are uninsured and cost of treatment is very high.

In Switzerland-

- Mandatory Medical Health Insurance is universal and residents are legally required to purchase insurance within 3 months of arrival in the country.
- Decentralized Health Care, so Health Care System governments exist mainly at the state level.
- Dental care is excluded from the insurance.

In Norway-

- Healthcare is provided to population with equal access to care regardless of age,race,gender,income or area of residency.
- Agencies like The Norwegian Institute for public health and others guide the health care process and policies.
- Dental care for children upto age 18 and some populations that have chronic medical diseases are covered by govt.

In China-

- The National Health and Family Planning Commission(NHFPC) is the main entity that provides oversight and executes the delivery of healthcare services to the people.
- Hospitals can be public or private, nonprofit or for profit and are paid through out of pocket payments,health insurance compensation,or Goverenment(govt.) subsidies.

In Canada-

- Healthcare system is called Medicare(different from US).
- Canada has NHI(National Health Insurance) Program i.e, govt. runs health insurance system for entire population.
- Health Insurance System is universal and single payer.
- In 1984, Canada Health Act was passed according to which Health coverage is available to all the residents with no out of pocket charges. For uncovered services such as prescription drugs and dental services,private insurance was done.

In Germany-

- In 1883,Sickness Insurance Act was passed representing the first social insurance program at national level.
- All individuals are required by the laws to have health insurance. Those earning less than $35000 must join one of the sickness funds for their health care coverage and those earning more than this limit may choose private insurance instead.
- Healthcare system is similar to US(No direct govt. intervention).
- Drawbacks includes Reliance on third party payment and tendency to use resources inefficiently.

When we compared healthcare system of US, Canada and Germany, we found that medical care spending in US is highest in the world,both in per capita terms and as a percentage of GDP.

And no. of physicians per 1000,no. of hospital beds per 1000, and average length of stay(Days) are largest in Germany and lowest in US.

Consumer satisfaction was highest in Canadians and lowest in US citizens.

Also, presence of a National Health Care Plan does not guarantee high level of consumer satisfaction. For example, in Germany 48% cosumers are not satisfied by the healthcare services provided to them.

2. **THE ROLE OF HEALTHCARE LEADERS-**

In this section, we learnt that Healthcare Leaders have dual roles when managing innovation. In a *bottom-up* role, they stimulate innovative results as they facilitate ideas and initiative coming from individuals and teams. In a *top-down* role,leaders are the primary means for the organization to realize its innovation goals and strategies. A fundamental challenge is to balance these two roles.

Also, Teamwork designs have become popular in healthcare organizations. Because middle managers oversee these team initiatives, their potential to influence innovation implementation has grown by diffusing information, synthesizing information, mediating between strategy and day-to-day activities, and selling innovation implementation.

We have also learnt about Positive Deviance(Uncommon practice that confers advantage to the people who practice it compared with rest of the community. Such behaviours are affordable,acceptable,and sustainable because they are already practiced by risk people,do not conflict with local culture and they work.) and how this approach is adopted to improve quality and safety within healthcare.

3.**HEALTH DISPARITIES AND HEALTH LITERACIES-**

In this section, we learnt concepts and measurements of Health Disparities and Health Equity.

Acc. To Margaret Whitehead in the early 1990s Health disparities/ inequalities are differences in health that are "avoidable," "unjust, and "unfair".

Equity in health means that all persons have fair opportunities to attain their full health potential, to the extent possible.

Apart from this,there are several other definitions of health disparities and health equity.

To measure Health disparity , we use "RATE RATIO"(the rate of a given health indicator in one group divided by the rate in another group) or "RATE DIFFERENCE"

More complex methods, such as the population attributable risk, the slope and relative indices of inequality, and the concentration curve and index also have been used.

We also learnt about Health Literacy and its association with physical health.

Health literacy,is defined as the "capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.

Health Literacy is measured by the Rapid Estimate of Adult Literacy in Medicine (**REALM**; Davis et al., 1993) , the Test of Functional Health Literacy in Adults (**TOFHLA**; Parker, Baker, Williams, & Nurss, 1995) and the Newest Vital Sign(**NVS**).

The REALM is a word recognition test which requires a person to pronounce a series of Health - related words. It is assumed that, if participants cannot pronounce the word correctly, they are unlikely to comprehend it.

TOFHLA asks people to fill word gaps in health-related passages, and perform numerical tasks commonly encountered in health management.

In NVS, participants are presented with a nutrition label from an ice cream package and asked six questions about it. Besides demonstrating comprehension and numeracy

abilities, participants must process and extract relevant information while ignoring distracters.

Lower REALM, S-TOFHLA and NVS scores were associated with worse scores on all health outcomes.

Low health literacy, or cognitive ability in general, would be associated with lower physical fitness, higher BMI, and lower number of natural teeth because they may indicate poor care of one's health.

4. FACETS OF PATIENT AND HEALTH OUTCOME-.

The three key players in the service triad are the health care organization, the clinician (team of physicians, nurses, medical assistants, and office staff), and the patient. Each of these three entities has a unique but interrelated perspective on the needs associated with health care performance.

Patient satisfaction, service quality, and efficient resource management are providing the evidentiary basis for measuring patient, clinician, and organizational outcomes.

Health Outcomes are the most important information for patients. Outcomes define success for every clinician and health care organization. Outcomes are essential components of any value-based payment model. Outcomes validate cost reduction that is truly value-enhancing. Outcomes validate the areas for service line growth and affiliation.

In US, to reform the Health care, central focus must be on increasing value for patients i.e, the health outcomes achieved per dollar spent. True reform will require both moving toward universal insurance coverage and restructuring the care delivery system.
For universal coverage,

- First, we must change the nature of health insurance competition. Insurers, whether private or public, should prosper only if they improve their subscribers' health. In addition, health plans should be required to measure and report their subscribers' health Outcomes.
- Second, we must keep employers in the insurance system.
- Third, we need to address the unfair burden on people who have no access to employer-based coverage, who therefore face higher premiums and greater difficulty securing coverage.
- Fourth, to make individual insurance affordable, we need large statewide or multistate insurance pools.
- Fifth, income-based subsidies will be needed to help lower income people buy insurance.
- Finally, once a value-based insurance market has been established, everyone must be required to purchase health insurance.

For restructuring the healthcare towards value based system,

- First, measurement and dissemination of health outcomes should become mandatory for every provider and every medical condition.
- Second, we need to radically reexamine how to organize the delivery of prevention, wellness, screening, and routine health maintenance services
- Third, we need to reorganize care delivery around medical conditions.
- Fourth, we need a reimbursement system that aligns everyone's interests around improving value for patients.

- Fifth, we must expect and require providers to compete for patients,based on value at the medical-condition level, both within and across state borders.
- Sixth, electronic medical records will enable value improvement,but only if they support integrated care and outcome measurement.

5.HIGH PERFORMING HEALTH SYSTEMS IN THE US AND ABROAD

High-reliability science is the study of organizations in industries like commercial aviation and nuclear power that operate under hazardous conditions while maintaining safety levels that are far better than those of health care. Adapting and applying the lessons of this science to health care offer the promise of enabling hospitals to reach levels of quality and safety that are comparable to those of the best high-reliability organizations.

Hospitals can make substantial progress toward high reliability by undertaking several specific organizational change initiatives in increments.

To improve reliability, which also includes interventions to improve culture, focuses on valid rate-based measures. This includes

(1) Identifying evidence-based interventions that improve the outcome.

(2) Selecting interventions with the most impact on outcomes and converting to behaviors.

(3) Developing measures to evaluate reliability.

(4) Measuring baseline performance.

(5) Ensuring patients receive the evidence-based interventions.

Also, we learnt 10 recommendations for Designing a High-Performing Health Care System for Patients with Complex Needs-

1. **Make care coordination a high priority.**
2. **Identify patients in greatest need of proactive, coordinated care.**
3. **Train more primary care physicians and geriatricians.**
4. **Facilitate communication between providers—for example, through clinical record integration.**
5. **Engage patients in decisions about their care.**
6. **Provide better support for caregivers.**
7. **Redesign funding mechanisms to meet patients' needs.**
8. **Integrate health and social services, and physical and mental health care.**

9. Engage clinicians in change and train and support clinical leaders.

10. Learn from experience and scale up successful projects.

A comparative international analysis of 8 different countries regarding Health system frameworks and performance indicators were also given in this course.

Countries involved are Australia,Canada,Denmark,England,Netherlands,NZ, Scotland and the US.

Method: Identification of comparable international indicators and analyses of their characteristics were done. Two dimensions of indicators- that they are nationally consistent and locally relevant were deemed important.

Results: The most commonly used domains in performance frameworks were safety, effectiveness and access. There were 401 indicators that fulfilled the 'nationally consistent and locally relevant' criteria. Of these, 45 indicators are reported in more than one country. Cardiovascular, surgery and mental health were the most frequently reported disease groups.

Conclusion: These comparative data inform researchers and policy makers internationally when designing health performance frameworks and indicator sets.

6.STRATEGIC PLANNING FOR INNOVATION

Strategic planning has become an accepted and common management discipline, both inside and outside of healthcare.

A recent survey of the state of strategic planning among healthcare organizations indicates that planners and executives believe that healthcare strategic planning practices are effective and provide the appropriate focus and direction for their organizations.

Based on research, analysis, and field experience,ten best practices in healthcare strategic planning are

1. Establish a Unique, Far-Reaching Vision.
2. Attack critical issues.
3. Develop focused, clear strategies.
4. Differentiate from competition.
5. Achieve real benefits.
6. Organize preplanning.
7. Structure effective participation.
8. Think strategically.
9. Manage implementation.
10. Manage strategically.