

**DEPARTMENT OF PUBLIC HEALTH DENTISTRY**  
**Post Graduate Session Reports**  
**Reports for Week 3 (15.06.2020 to 20.06.2020)**

<b>S.NO</b>	<b>Date</b>	<b>Lecture Topic</b>	<b>Faculty</b>	<b>PG's</b>
1.	15.06.2020	S1-Measures of Central Tendency	Dr. Jagannath G V	DrNiveditha DrSujatha
		S2 – Measures of Dispersion	Dr.Jagannath G V	Dr.Sujatha
2.	16.06.2020	S1- Data Distribution	Dr. Jagannath.G.V	DrSujatha
		S2- Sampling	Dr. Jagannath.G.V	DrSujatha
3.	17.06.2020	S1-Probablity Sampling	Dr. Jagannath.G.V	DrSujatha
		S2-Non Probablity Sampling	Dr. Jagannath.G.V	DrSujatha
4.	18.06.2020	S1- Revision of Biostatistics	DrJagannath .G.V	DrSujatha
		S2-Critical appraisal of scientific research	DrJagannath G.V	DrSujatha
5.	19.06.2020	S1- Seminar on Pain	DrJagannath G.V	DrSujatha
6.	20.06.2020	S1-Study designs	Dr.Jagannath GV.	DrSujatha

## DEPARTMENT OF PUBLIC HEALTH DENTISTRY

### e-DISCUSSION FOR POSTGRADUATES

Date: 15-06-2020

Session I: 10.45 am – 11.30 am

Faculty: Dr. Jagannatha G.V

PG Students: Dr. Sujatha Devi  
Dr. Niveditha

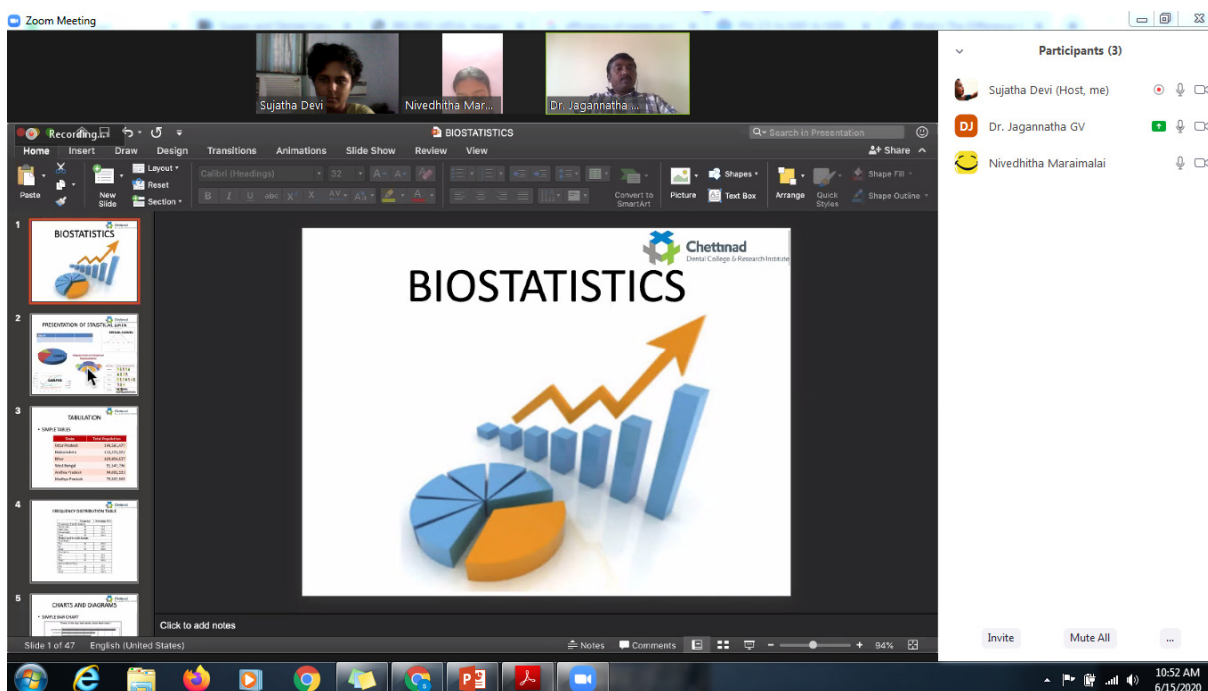
Total No of PG Students: 2/2

**Discussion topic:** Biostatistics

**Sub Topic** : Measures of central tendency

**Summary** :

A brief introduction about the various measures of tendency Mean, Median and Mode were explained. What is central tendency, its importance in measurements were briefed about. Mean, Median, Mode its differences, explanation, how they are calculated were explained with suitable examples. The advantages and disadvantages, its formula for calculation were also explained. The difference between sample mean and population mean, its difference, use, ways of measurement and expression were also explained.



Zoom Meeting

Recording...

Remaining Meeting Time: 08:12 | Upgrade to Pro

## Statistical averages

### Mean

- The arithmetic mean is widely used in statistical calculation.
- The individual observations are first added together then divided by the number of observations.
- In most dental indices calculation, we use the principle of mean.
- Eg. In OHI-S
- Calculation of DI-S
- Debris score simplified =  $\frac{\sum \text{score of individual teeth}}{\text{no of surfaces examined}}$

16	11	26
2	2	3
2	2	3
46	31	36

$= 14/6 = 2.3$

This is the simplest example of mean.

Chettinad Dental College & Research Institute

11:19 AM 6/15/2020

Zoom Meeting 40-Minutes

You are viewing Dr. Jagannatha GV's screen

View Options

Recording...

## STATISTICAL AVERAGES

mode

median

mean

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Mute Stop Video Security Participants Chat Share Screen Pause/Stop Recording Reactions

End

11:11 AM 6/15/2020

## DEPARTMENT OF PUBLIC HEALTH DENTISTRY

### e-DISCUSSION FOR POSTGRADUATES

Date: 15-06-2020

Session II: 5.30pm- 6.30 pm

Faculty: Dr. Jagannatha G.V

PG Students: Dr. Sujatha Devi

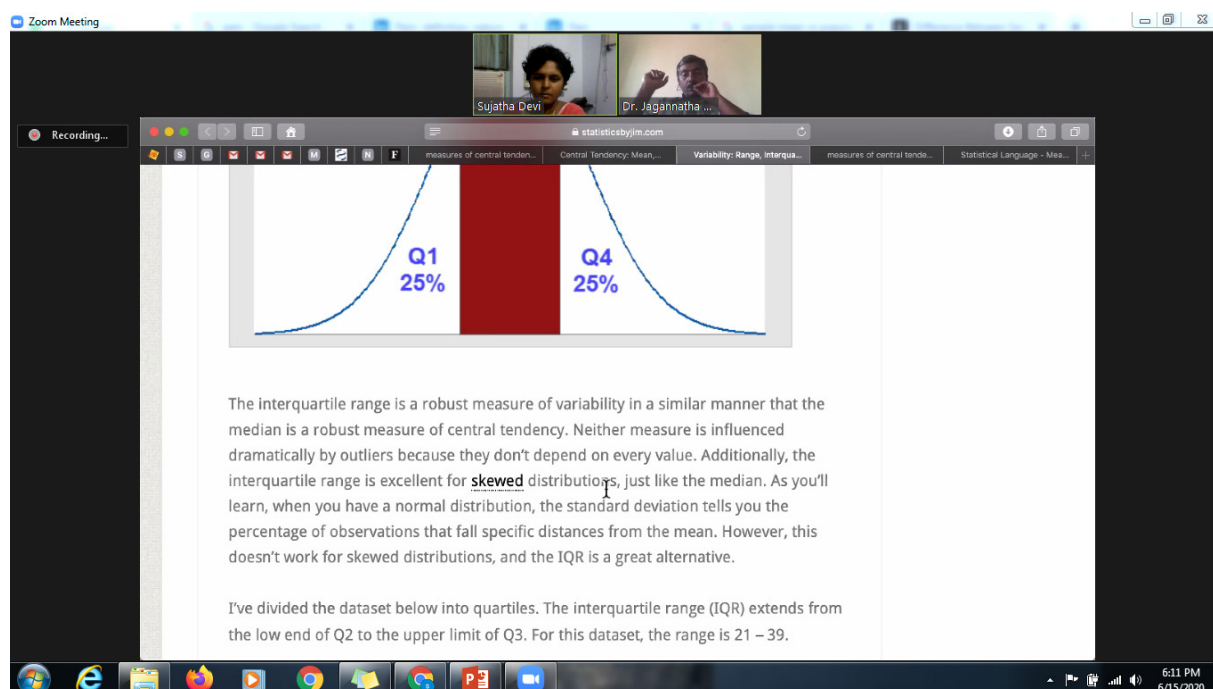
Total No of PG Students: 1/2

**Discussion topic: Biostatistics**

**Sub Topic : Measures of Dispersion**

**Summary :**

The difference between central tendency and measures of dispersion was explained. the different types of measures of tendency like standard deviation, variance and mean deviation and range were explained in brief. The definition of standard deviation, mean deviation, variance, how to measure them, their use in analysis were explained with examples. the formulae for calculation, its advantages and disadvantages were also briefed about. the sample variance and population variance and its method of calculation and uses were briefed about.



Zoom Meeting

Recording...

Sujatha Devi Dr. Jagannatha ...

**Advantages:**

- Can be used for both numerical and categorical data

**Disadvantages:**

- In some distributions it may not represent the central value (eg. Retirement age: 54, 54, 54, 55, 56, 57, 57, 58, 58)
- There may be more than one mode (bimodal, multimodal) that leading to no meaningful central value
- In some continuous data, there may be no mode at all

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5:48 PM 6/15/2020

Zoom Meeting

Recording...

Sujatha Devi Dr. Jagannatha ...

**range**

The range is the difference between the lowest and highest value.

- Find the highest and lowest values.
- Subtract the lowest value from the highest.

2, 2, 3, 5, 5, 7, 8

Lowest Highest

$8 - 2 = 6$

The range is 6

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6:08 PM 6/15/2020

Zoom Meeting

Recording...

Sujatha Devi Dr. Jagannatha...

**STANDARD DEVIATION**

- Sample size less than 30

$$s = \sqrt{\frac{\sum (x - \bar{x})^2}{n - 1}}$$

6:28 PM 6/15/2020

Zoom Meeting

Recording...

Sujatha Devi Dr. Jagannatha...

statisticbyjim.com

measures of central tendency: Central Tendency: Mean... Variability: Range, Interquartile... measures of central tendency: Statistical Language: Menu...

0.1587

20 30

Delivery Time Minutes

Low Variability Delivery Times  
Normal, Mean=20, StDev=5

0.02275

20 30

Delivery Time Minutes

5:00 PM 6/15/2020

## DEPARTMENT OF PUBLIC HEALTH DENTISTRY

### e-DISCUSSION FOR POSTGRADUATES

Date: 16-06-2020

Session I: 10.45 am – 11.30 am

Faculty: Dr. Jagannatha G.V

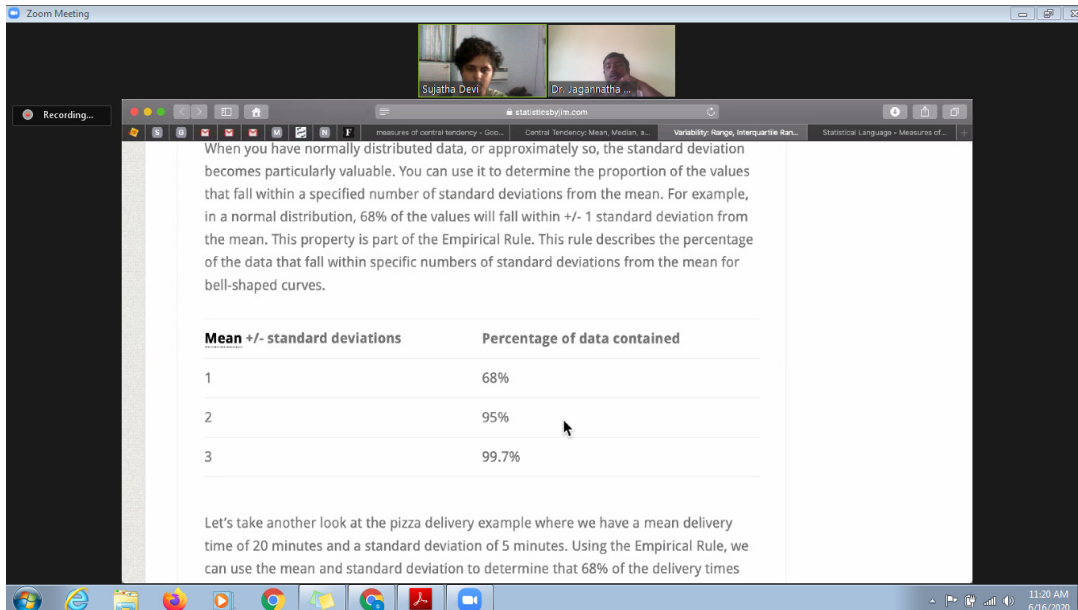
PG Students: Dr. Sujatha Devi

Total No of PG Students: 1/2

**Discussion topic: Data distribution types – Normal and Skewed**

**Summary :**

A brief recap about the measures of central tendency and measures of dispersion was given. The different types of data distribution normal type and skewed type were explained in brief. The normal distribution, the chances of getting a normal distribution high in biological variables and in large population was explained. The various parameters used to measure normal, skewed, continuous and discrete data were explained in brief. The concept of inflection point was explained in brief with suitable examples.



The screenshot shows a Zoom meeting window with two participants: Sujatha Devi and Dr. Jagannatha G.V. The main content is a presentation slide titled "measures of central tendency - Geo...". The slide explains the Empirical Rule for normally distributed data, stating that 68% of values fall within  $\pm 1$  standard deviation, 95% within  $\pm 2$ , and 99.7% within  $\pm 3$ . A table summarizes this data.

Mean $\pm$ standard deviations	Percentage of data contained
1	68%
2	95%
3	99.7%

The slide also includes an example about pizza delivery times, where a mean of 20 minutes and a standard deviation of 5 minutes are used to determine that 68% of delivery times fall within a specific range.



Zoom Meeting

Recording...

statisticsbyjim.com

measures of central tenden... Central Tendency: Mean, Variability: Range, Interqua... measures of central tende... Statistical Language - Mea...

the low end of Q2 to the upper limit of Q3. For this dataset, the range is 21 – 39.

Save

16 Q1

19

20

21 Q2

22

25

26

29 Median

33

34 Q3

38

39

46 Q4

52

55

58

Using other percentiles

6:12 PM 6/15/2020

Recording...

BIOSTATISTICS

Search in Presentation

Home Insert Draw Design Transitions Animations Slide Show Review View

Paste New Slide Layout Reset Section

Convert to SmartArt Picture Text Box Arrange Quick Styles Shape Outline

33

34

35

36

37

SAMPLING

Click to add notes

Slide 33 of 53 English (United States) Notes Comments 94%

$$s^2 = \frac{\sum(x - \bar{x})^2}{n - 1}$$

x	$\bar{x}$	$x - \bar{x}$	$(x - \bar{x})^2$
1	2.83	1 - 2.83 = (-1.83)	(-1.83) <sup>2</sup> = 3.35
2	2.83	2 - 2.83 = (-0.83)	(-0.83) <sup>2</sup> = 0.69
2	2.83	2 - 2.83 = (-0.83)	(-0.83) <sup>2</sup> = 0.69
3	2.83	3 - 2.83 = (0.17)	(0.17) <sup>2</sup> = 0.03
4	2.83	4 - 2.83 = (1.17)	(1.17) <sup>2</sup> = 1.37
5	2.83	5 - 2.83 = (2.17)	(2.17) <sup>2</sup> = 4.71

$3.35 + 0.69 + 0.69 + 0.03 + 1.37 + 4.71 = 10.84$

$s^2 = \frac{10.84}{6 - 1} = 2.17$

Chettinad Dental College & Research Institute

Sujatha Devi

Dr. Jagannatha GV



## DEPARTMENT OF PUBLIC HEALTH DENTISTRY

### e-DISCUSSION FOR POSTGRADUATES

Date: 16-06-2020

Session II: 1.15 pm – 2pm

Faculty: Dr. Jagannatha G.V

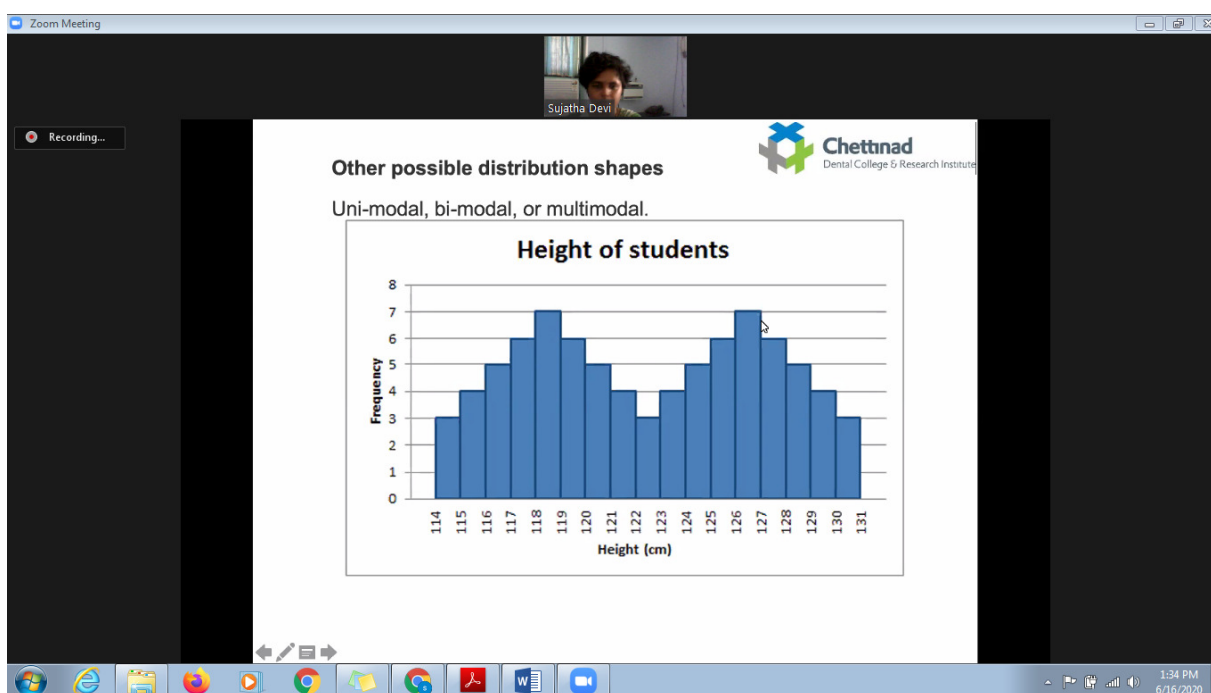
PG Students: Dr. Sujatha Devi

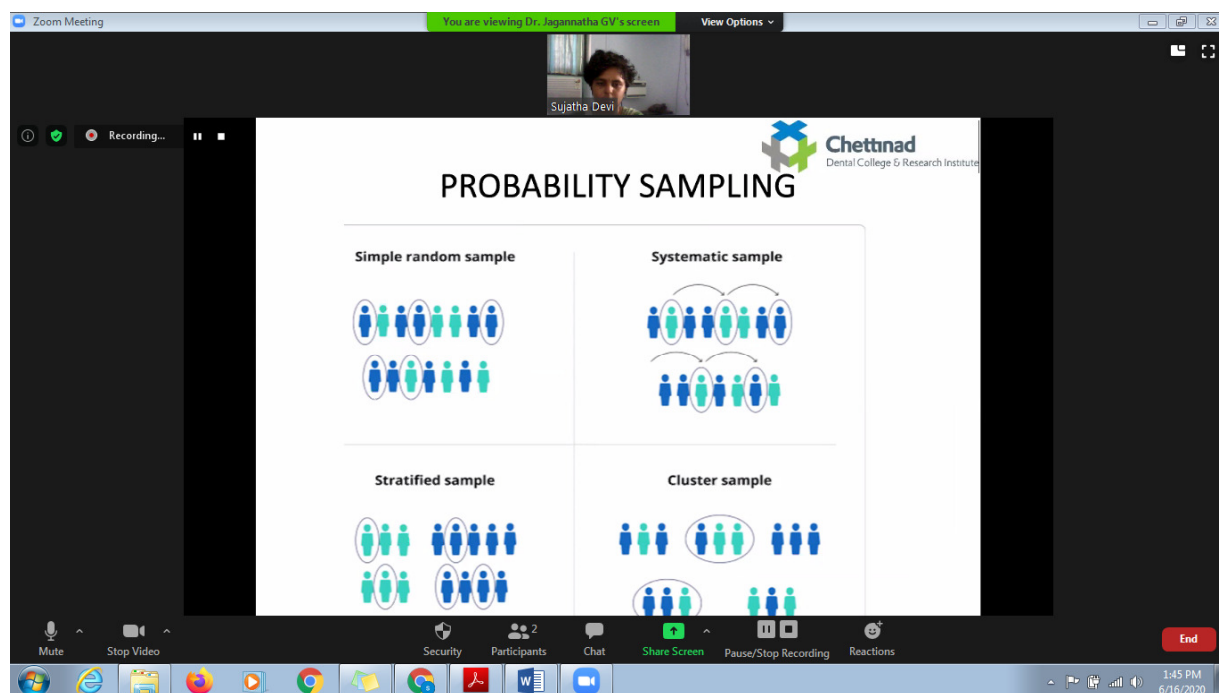
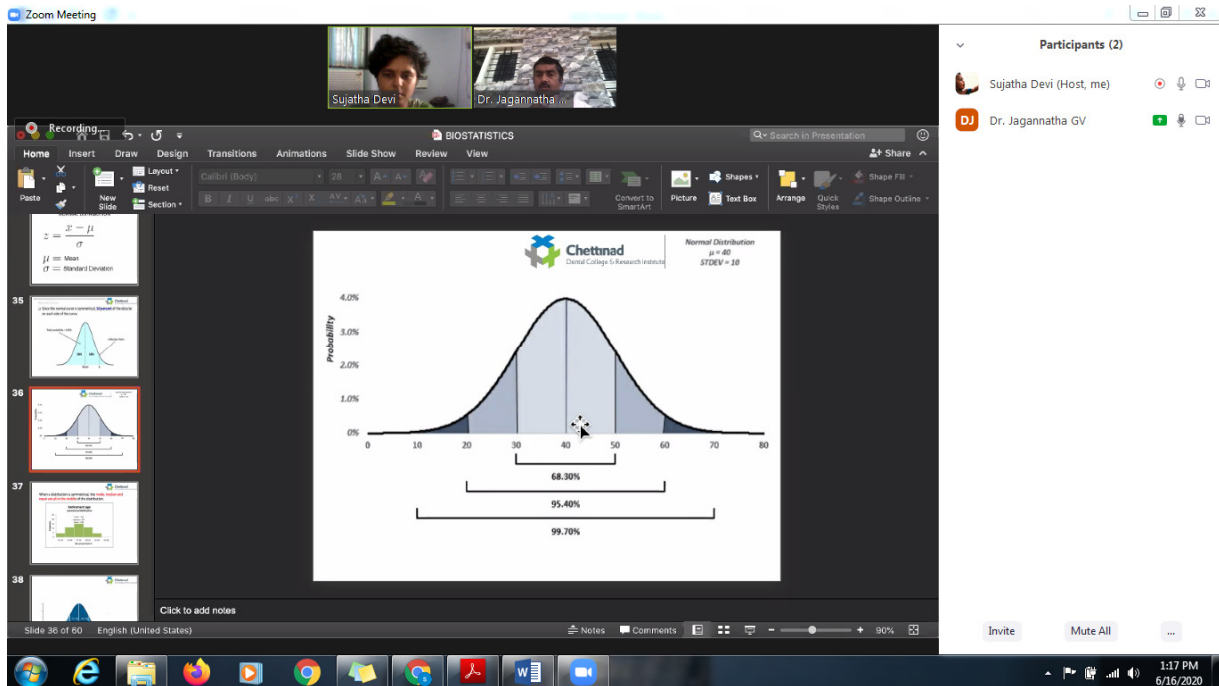
Total No of PG Students: 1/2

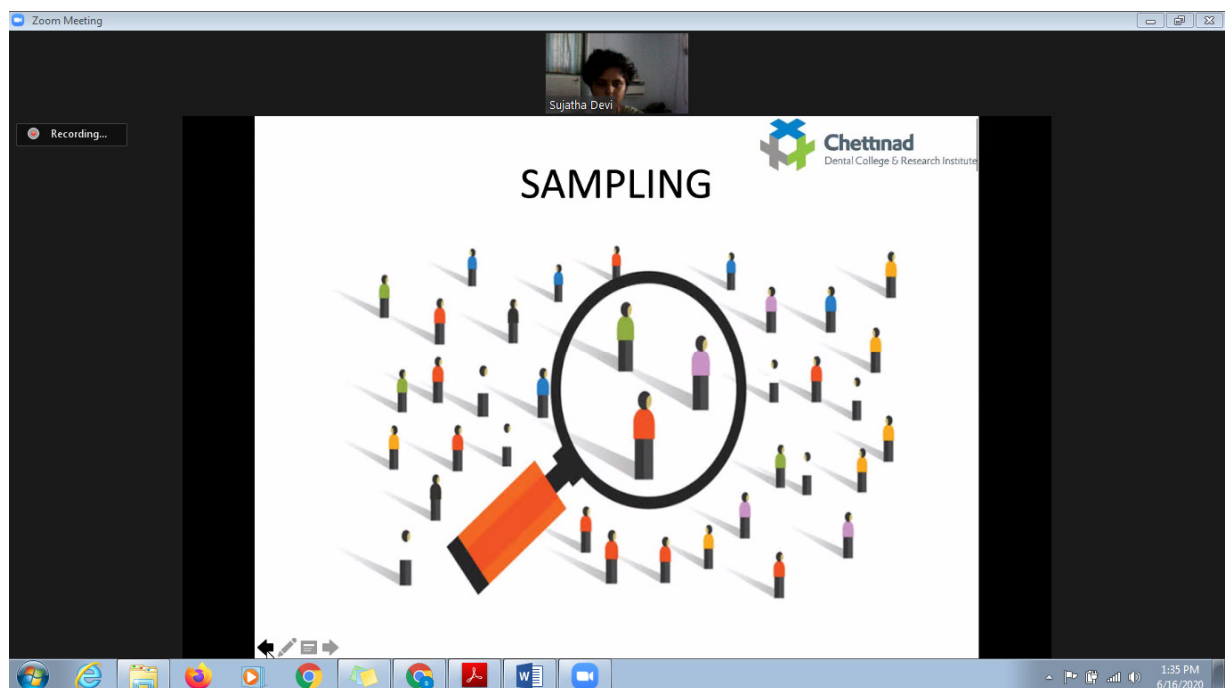
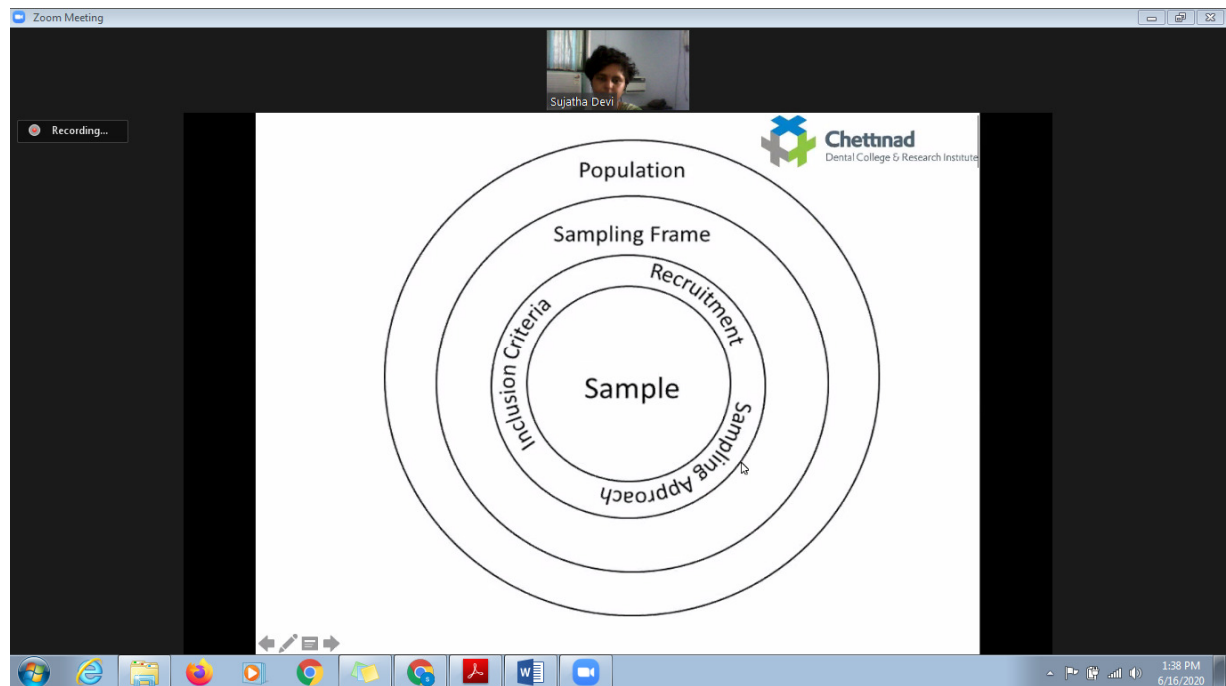
#### Discussion topic: Sampling

##### Summary :

A brief explanation about the characteristics of normal curve and skewed curve were explained. The concept of three sigma or empirical rule, its practical implications were explained with suitable examples. What is a sample, the necessity of obtaining a sample was explained. The characteristics of a sample and the basic steps in obtaining a sample like selecting a population, selecting sample frame and then selecting a sample was explained with suitable examples. The different types of sampling methods of probability and non probability sampling were explained. Simple random sampling was explained in brief with suitable examples.







## DEPARTMENT OF PUBLIC HEALTH DENTISTRY

### e-DISCUSSION FOR POSTGRADUATES

Date: 17-06-2020

**Session I: 10.45 am – 11.30 am**

**Faculty:** Dr. Jagannatha G.V

**PG Students:** Dr. Sujatha Devi

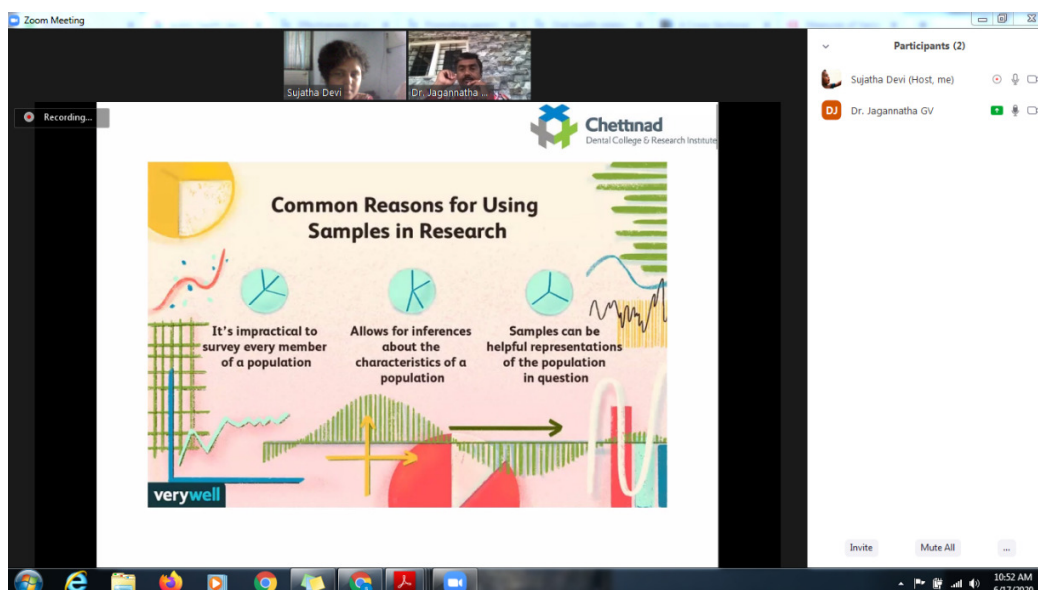
**Total No of PG Students:** 1/2

**Discussion topic:** Sampling

**Sub topic : Probability sampling – Systemic, Stratified And Cluster methods**

**Summary :**

A brief recap of sampling was given. The main reasons why a sample is necessary was explained. The implications of over estimation and under estimation was briefed about. The table of random numbers was explained with suitable examples. The systemic sampling, stratified sampling and cluster sampling were explained in brief. The method by which the data is obtained in these methods, the advantages and disadvantages of the obtained data were explained with suitable examples.



The screenshot shows a Zoom meeting interface. At the top, there are two video thumbnails: one for 'Sujatha Devi' and one for 'Dr. Jagannatha G.V'. Below them is a presentation slide titled 'Common Reasons for Using Samples in Research' with the Chettinad Dental College & Research Institute logo. The slide lists three reasons: 'It's impractical to survey every member of a population', 'Allows for inferences about the characteristics of a population', and 'Samples can be helpful representations of the population in question'. The slide also features various charts and graphs. On the right side of the Zoom window, there is a 'Participants (2)' list showing 'Sujatha Devi (Host, me)' and 'Dr. Jagannatha G.V'. At the bottom of the Zoom window, there are buttons for 'Invite' and 'Mute All'. The Windows taskbar is visible at the very bottom, showing the time as 10:52 AM on 6/17/2020.

Zoom Meeting You are viewing Dr. Jagannatha GV's screen View Options

Recording Paused

Image may be subject to copyright.

**Table 6.2**  
*Random Number Table*

20	17	42	01	72	33	94	55	89	65	58	60
74	49	04	27	56	49	11	63	77	79	90	31
94	70	49	49	65	74	64	00	26	07	23	00
22	15	78	49	74	37	50	94	13	90	08	14
93	29	12	20	26	22	66	98	37	53	82	62
45	04	77	48	87	77	66	91	42	98	17	26
44	91	99	08	72	87	33	58	12	08	91	12
16	23	91	95	97	98	52	49	40	37	21	46
04	50	65	37	99	57	74	98	93	99	78	30
32	70	17	05	79	58	50	26	54	30	01	88
03	64	59	55	85	63	49	46	61	89	33	79
62	49	00	67	28	96	19	65	13	44	78	39
61	00	95	85	86	94	64	17	47	67	87	59
89	03	90	40	10	60	18	43	97	37	68	97

Mute Stop Video Security Participants Chat Share Screen Resume/Stop Recording Reactions End

11:05 AM 6/17/2020

Zoom Meeting

Recording...

**PROBABILITY SAMPLING**

Chettinad Dental College & Research Institute

**Simple random sample**

**Systematic sample**

**Stratified sample**

**Cluster sample**

11:03 AM 6/17/2020

**DEPARTMENT OF PUBLIC HEALTH DENTISTRY**

**e-DISCUSSION FOR POSTGRADUATES**

Date:17-06-2020

**Session II: 1.15pm- 2pm**

**Faculty:** Dr. Jagannatha G.V

**PG Students:** Dr.Sujatha Devi

**Total No of PG Students:** 1/2

**Discussion topic:** Sampling

**Sub topic** :Non Probability sampling – Convenience,Purposive , Quota, Judgement, Snow ball sampling

**Summary** :

The various methods of non probability sampling like convenience sampling, purposive, quota, judgement , multi phase , multi stage and snow ball sampling was briefed about. The different names of non probability sampling like accidental, opportunity and grab sampling was explained. The different types of purposive sampling like expert, extreme case, homogenous, maximum variation, total population, typical cases were explained with suitable examples. The methods of collecting data., advantages and disadvantages were explained in brief . The Articles using various methods of sampling were discussed.

Zoom Meeting

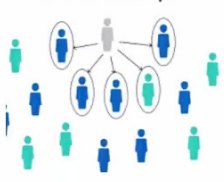
Recording...

Participants (2)

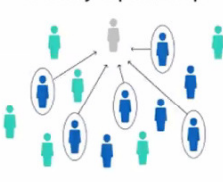
- Sujatha Devi (Host, me)
- Dr. Jagannatha GV

**NON PROBABILITY SAMPLING**

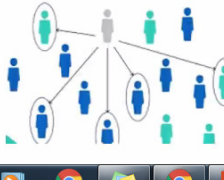
**Convenience sample**



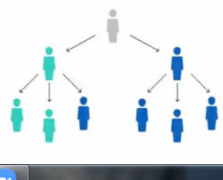
**Voluntary response sample**



**Purposive sample**



**Snowball sample**



1:17 PM 6/17/2020

Zoom Meeting

Recording...

critical view on sampling in - x non probability sampling - x Purposive Sampling (Delib... x Non-Probability Sampling x Sampling Methods (Probab... x +

<https://www.statisticshowto.com/purposive-sampling/>

A purposive sample is where a researcher selects a **sample** based on their knowledge about the study and **population**. The participants are selected based on the purpose of the **sample**, hence the name.

Participants are selected according to the needs of the study (hence the alternate name, *deliberate* sampling); applicants who do not meet the profile are rejected. For example, you may be conducting a study on why high school students choose community college over university. You might canvas high school students and your first question would be "Are you planning to attend college?" People who answer "No," would be excluded from the study.

## Types of Purposive Sampling

Several subtypes of purposive sampling exist:

- Critical Case Sampling: collecting cases that are likely to give you the most information about the

1:20 PM 6/17/2020



Zoom Meeting

Recording...

Sujatha Devi Dr. Jagannatha...

critical view on sampling in... non probability sampling - 1... Purposive Sampling (Delb... Non-Probability Sampling Sampling Methods (Probab...

https://www.statisticshowto.com/purposive-sampling/

- Critical Case Sampling: collecting cases that are likely to give you the most information about the phenomenon you are studying.
- Expert Sampling: Sampling to include only those with expertise in a certain area.
- Extreme Case Sampling: this technique focuses on participants with unique or special characteristics.
- Homogeneous Sampling: collecting a very specific set of participants. For example, age 20-24, college educated, male.
- Maximum Variation Sampling: collecting a wide range of participants with different viewpoints to study a certain phenomenon. Can uncover common themes.
- Total Population Sampling: the entire population, who share common characteristics, is studied.
- Typical Case Sampling: allows the researcher to develop a profile about what is normal or average for a particular phenomenon.

Advantage

Each subtype of purposive sampling has its own advantages and disadvantages.

OFFER INTERIORS  
WORTH UP TO ₹10 LACS  
READY TO MOVE | OC RECEIVED  
YELAHANKA | 3 & 4 BHK

1:23 PM 6/17/2020

NIH National Library of Medicine  
National Center for Biotechnology Information

PubMed.gov

Search PubMed

Advanced

> Indian J Dent Res. Nov-Dec 2018;29(6):726-731. doi: 10.4103/ijdr.IJDR\_221\_17.

## A Cross-Sectional Study on Eruption Timing of Primary Teeth in Children of Mysore, Karnataka

Mysore Devraj Indira<sup>1</sup>, Nandlal Bhojraj<sup>1</sup>, D Narayanappa<sup>2</sup>

Affiliations + expand

PMID: 30588000 DOI: 10.4103/ijdr.IJDR\_221\_17

## Oral health-related knowledge, attitude and practices among eunuchs (hijras) residing in Bhopal City, Madhya Pradesh, India: A cross-sectional questionnaire survey

Sudhir Hongal, Nilesh Arjun Torwane, [...], and Shubham Jain

[Additional article information](#)



Asian Pacific Journal of Cancer Prevention

APOCP

West Asia Organization for Cancer Prevention

## Effectiveness of a School-Based 'Tobacco Free' Intervention on Adolescents' Knowledge and Exposure to Second Hand Tobacco Smoke - A Multiphase Study

Ashwini Rao, Unnikrishnan B, [...], and Nikita Rungta

[Additional article information](#)

BMC Oral Health



## Promoting parenting strategies to improve tooth brushing in children: design of a non-randomised cluster-controlled trial

Maddelon de Jong-Lenters, Monique L'Hoir, [...], and Denise Duijster

Zoom Meeting

Recording...

critical view on sampling in... non probability sampling -... Purposive Sampling (Delib... Non-Probability Sampling x Sampling Methods (Probab... x

<https://www.statisticshowto.com/purposive-sampling/>

Participants are selected according to the needs of the study (hence the alternate name, *deliberate* sampling); applicants who do not meet the profile are rejected. For example, you may be conducting a study on why high school students choose community college over university. You might canvas high school students and your first question would be "Are you planning to attend college?" People who answer "No," would be excluded from the study.

## Types of Purposive Sampling

Several subtypes of purposive sampling exist:

- **Critical Case Sampling:** collecting cases that are likely to give you the most information about the phenomenon you are studying.
- **Expert Sampling:** Sampling to include only those with expertise in a certain area.
- **Extreme Case Sampling:** this technique focuses on participants with unique or special characteristics.
- **Homogeneous Sampling:** collecting a very specific set of participants. For example, age 20-24, college educated, male.
- **Maximum Variation Sampling:** collecting a wide range of participants with different viewpoints to study a certain phenomenon. Can uncover common themes.

1:21 PM  
6/17/2020

Zoom Meeting

Recording...

Sujatha Devi

### Advantages

- Cost- and time-effective
- Easy to use
- Indicated when probability sampling is not feasible

### Disadvantages

- Impossible to know how well the sample is representing the population
- Cannot calculate CI and margin of errors

1:45 PM  
6/17/2020

## DEPARTMENT OF PUBLIC HEALTH DENTISTRY

### e-DISCUSSION FOR POSTGRADUATES

Date: 18-06-2020

Session I: 11 am – 11.45 am

Faculty: Dr. Jagannatha G.V

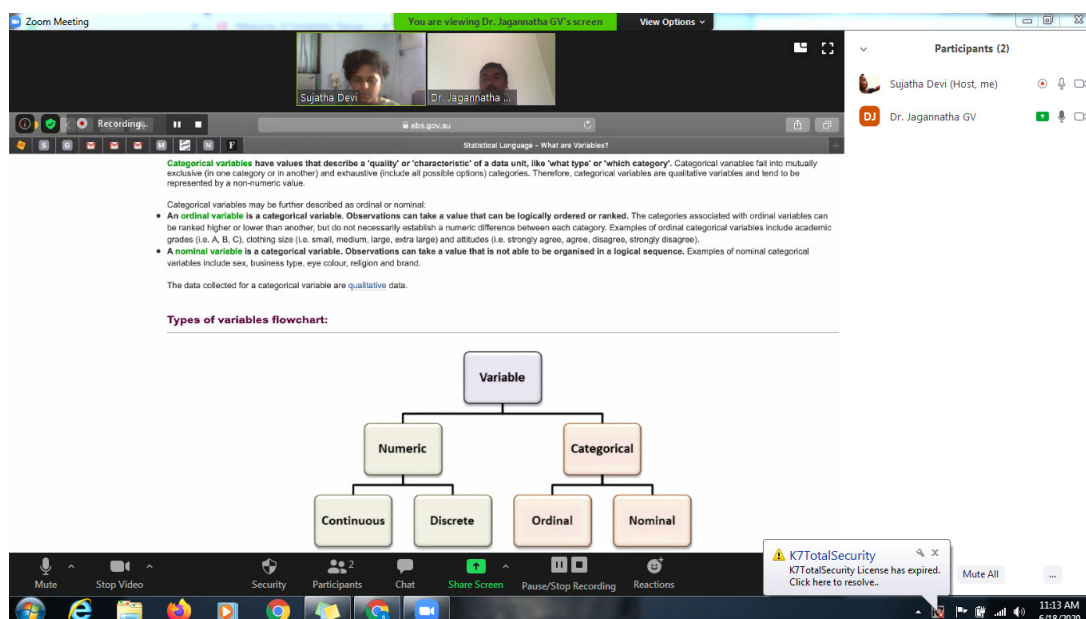
PG Students: Dr. Sujatha Devi

Total No of PG Students: 1/1

#### Discussion topic: Revision of Biostatistics

##### Summary :

A brief revision about what is data, the different types of data like qualitative data, quantitative data was done. The difference between discrete and continuous data was revised with suitable examples. The different scales of data like the nominal scale, ordinal scale, interval and ratio were also revised with examples. The various types of representation of data like tabulation, graph, bar graph, multiple bar graph, stacked bar graph, histogram, frequency curve, line graph, scatter diagram, pictogram, map and pie diagram was revised. The representation of data, its advantages, implications and disadvantages were revised.



The screenshot shows a Zoom meeting interface. The main window displays a presentation slide titled "Statistical Language - What are Variables?". The slide content includes:

- Categorical variables** have values that describe a "quality" or "characteristic" of a data unit, like "what type" or "which category". Categorical variables fall into mutually exclusive (in one category or in another) and exhaustive (include all possible options) categories. Therefore, categorical variables are qualitative variables and tend to be represented by a non-numeric value.
- Categorical variables may be further described as ordinal or nominal.
- An **ordinal variable** is a categorical variable. Observations can take a value that can be logically ordered or ranked. The categories associated with ordinal variables can be ranked higher or lower than another, but do not necessarily establish a numeric difference between each category. Examples of ordinal categorical variables include academic grades (i.e. A, B, C), clothing size (i.e. small, medium, large, extra large) and attitudes (i.e. strongly agree, agree, disagree, strongly disagree).
- A **nominal variable** is a categorical variable. Observations can take a value that is not able to be organised in a logical sequence. Examples of nominal categorical variables include sex, business type, eye colour, religion and brand.
- The data collected for a categorical variable are **qualitative** data.

Below the text is a flowchart titled "Types of variables flowchart:"

```

graph TD
    Variable[Variable] --> Numeric[Numeric]
    Variable --> Categorical[Categorical]
    Numeric --> Continuous[Continuous]
    Numeric --> Discrete[Discrete]
    Categorical --> Ordinal[Ordinal]
    Categorical --> Nominal[Nominal]
  
```

The Zoom interface also shows two participants: Sujatha Devi (Host, me) and Dr. Jagannatha GV. The bottom status bar indicates the time as 11:13 AM on 6/18/2020.

Zoom Meeting

Recording...

Sujatha Devi Dr. Jagannatha ...

abs.gov.au

## Statistical Language

*Statistical Language helps you to understand a range of statistical concepts and terms with simple explanations.*

Find concept definitions:

Explore a concept:

- What are Data?**
  - Data unit
  - Data item (variable)
  - Observation
  - Dataset
- Quantitative and Qualitative Data**
  - Quantitative data
  - Qualitative data
- What are Variables?**
  - Variable (data item)
  - Numeric
  - Continuous
  - Discrete
  - Categorical
  - Ordinal
  - Nominal
- What is a Population?**
  - Population
- Census and Sample**
  - Census
  - Sample
  - Random (probability) sample
  - Non-random (non-probability) sample
- Data Sources**
  - Direct/Primary data
  - Survey
  - Indirect/Secondary data
  - Administrative data
- Describing Frequencies**
  - Absolute frequency
  - Relative frequency
  - Ratio
  - Rate
  - Proportion
- Frequency Distribution**
  - Frequency distribution
  - Histogram
  - Bar chart
- Measures of Shape**
  - Measures of shape
  - Normal distribution
  - Skewness
- Measures of Central Tendency**
- Measures of Spread**
- Types of Error**

11:14 AM  
6/18/2020

Zoom Meeting

Recording...

Sujatha Devi Dr. Jagannatha ...

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## Australian Bureau of Statistics

Home Complete Survey Statistics Services Census Topics @ a Glance Methods & Classifications News & Media Education Links Help

ABS Home

Menu

- Understanding Statistics
- Draft Statistical Capability Framework
- Statistical Language
- ABS Presents...Videos
- Statistical Skills for Official Statisticians
- A Guide for Using Statistics for Evidence Based Policy
- Statistics - A Powerful Edge!
- ABS Sports Stats
- ABS Training

## Understanding statistics

### Statistical Language

*Statistical Language helps you to understand a range of statistical concepts and terms with simple explanations.*

Find concept definitions:

Explore a concept:

- What are Data?**
  - Data unit
  - Data item (variable)
  - Observation
  - Dataset
- Quantitative and Qualitative Data**
  - Quantitative data
  - Qualitative data
- What are Variables?**
  - Variable (data item)
  - Numeric
  - Continuous
  - Discrete
  - Categorical
  - Ordinal
  - Nominal
- What is a Population?**
  - Population
- Census and Sample**
  - Census
  - Sample
  - Random (probability) sample
  - Non-random (non-probability) sample
- Data Sources**
  - Direct/Primary data
  - Survey
  - Indirect/Secondary data
  - Administrative data
- Describing Frequencies**
  - Absolute frequency
  - Relative frequency
  - Ratio
  - Rate
  - Proportion
- Frequency Distribution**
  - Frequency distribution
  - Histogram
  - Bar chart
- Measures of Shape**
  - Measures of shape
  - Normal distribution
  - Skewness
- Measures of Central Tendency**
- Measures of Spread**
- Types of Error**

11:39 AM  
6/18/2020

## **DEPARTMENT OF PUBLIC HEALTH DENTISTRY**

### **e-DISCUSSION FOR POSTGRADUATES**

Date: 18-06-2020

**Session II: 5pm – 5.45 pm**

**Faculty:** Dr. Jagannatha G.V

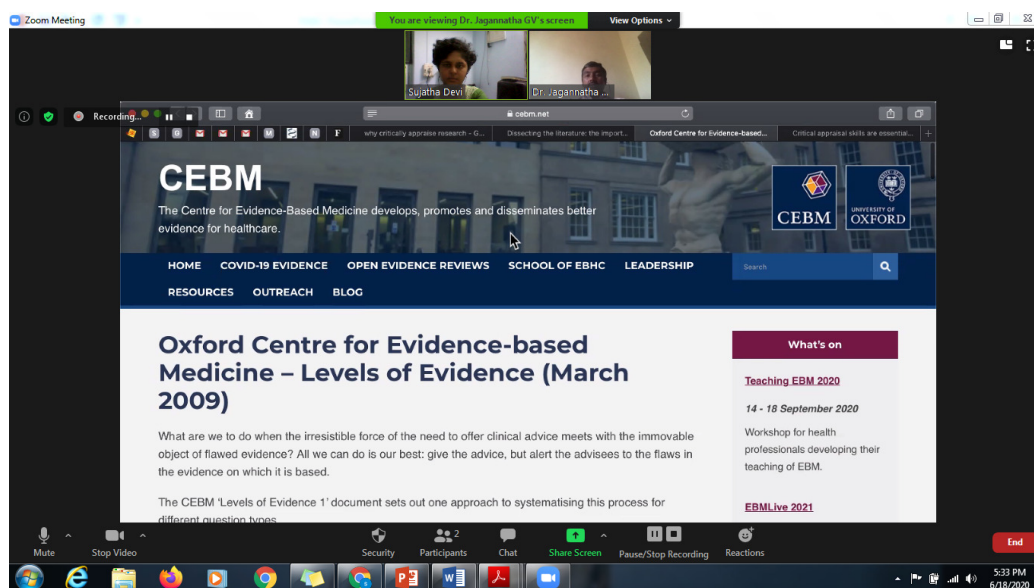
**PG Students:** Dr. Sujatha Devi

**Total No of PG Students:** 1/1

**Discussion topic: Critical appraisal of scientific research**

**Summary :**

A brief discussion about the necessity to do a critical appraisal was explained. The uses of it like the addressing of the error in the study, reducing the information overload by eliminating the irrelevant and weak studies, identifying relevant information, distinguishing evidence from opinion, belief, assumption and misreporting, assessment of validity, assessment of usefulness in clinical practice, recognition of potential bias were explained in brief. The difference between statistical significance and clinical significance was explained with suitable articles and references.





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RESOURCES OUTREACH BLOG

	Aetiology / Harm			symptom prevalence study	
1a	SR (with homogeneity*) of RCTs	SR (with homogeneity*) of inception cohort studies; CDR* validated in different populations	SR (with homogeneity*) of Level 1 diagnostic studies; CDR* with 1b studies from different clinical centres	SR (with homogeneity*) of prospective cohort studies	SR (with homogeneity*) of Level 1 economic studies
1b	Individual RCT (with narrow Confidence Interval*)	Individual inception cohort study with > 80% follow-up; CDR* validated in a single population	Validating** cohort study with good*** reference standards; or CDR* tested within one clinical centre	Prospective cohort study with good follow-up****	Analysis based on clinically sensible costs or alternatives; systematic review(s) of the evidence; and including multi-way sensitivity analyses
1c	All or none§	All or none case-series	Absolute SpPins and SnNouts**	All or none case-series	Absolute better-value or worse-value analyses*****

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ncbi.nlm.nih.gov

why critically appraise research - G... Dissecting the literature: the import... Oxford Centre for Evidence-based... Critical appraisal skills are essential...

treatment effect. Then, consider whether results are generalizable to the patient at hand, and whether the measured outcomes are relevant and important. Finally, carefully review the patient's risk of TRH and related treatment benefit – risk ratio.[6] We believe that methodologically assessing the strength of evidence and using it to guide treatment of each patient will certainly improve health outcomes.

Additional material

A critical appraisal worksheet (with permission from <http://www.cebm.net/index.aspx?o=1147>) is provided in the [appendix](#) section of the manuscript. We encourage the readers to assess the manuscript mentioned in the clinical scenario[1] and critically appraise it using the worksheet (see [appendix](#)).

A randomized, vehicle-controlled trial of tacrolimus ointment for treatment of atopic dermatitis in children (J Allergy Clin Immunol. 1998)

Indian J Sex Transm Dis - Indian J Sex Transm

Therapy study: Are the results of the trial valid? (Internal Validity)

What question did the study ask?

Patients - Intervention - Comparison - Outcomes§ -

Is it best? Was the assignment of patients to treatments randomized?

What is best?

Centralized computer randomisation is ideal and often used in multi-centred trials. Smaller trials may use an independent person (e.g. the hospital pharmacy) to "police" the randomisation.

The Methods should tell you how patients were allocated to groups and whether or not randomisation was concealed.

This paper: Yes ☐ No ☐ Unclear ☐

Comment:

Is it best? Were the groups similar at the start of the trial?

What is best?

If the randomisation process worked (that is, achieved comparable groups) the groups should be similar. The more similar the groups the better it is. There should be some indication of whether differences between groups are statistically significant (ie, p values).

The Results should have a table of "Baseline Characteristics" comparing the randomized groups on a number of variables that could affect the outcome (ie, age, risk factors etc.). If not, there may be a description of group similarity in the first paragraphs of the Results section.

This paper: Yes ☐ No ☐ Unclear ☐

Comment:

Is it best? 2a. A - Aside from the allocated treatment, were groups treated equally?

What is best?

Where do I find the information?

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RESOURCES OUTREACH BLOG

Figure 1 shows the tree of possible designs, branching into subgroups of study designs by whether the studies are descriptive or analytic and by whether the analytic studies are experimental or observational. The list is not completely exhaustive but covers most basics designs.

Figure: Tree of different types of studies (Q1, 2, and 3 refer to the three questions below)

[Download a PDF by Jeremy Howick about Study Designs](#)

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Critical appraisal allows us to:

- reduce information overload by eliminating irrelevant or weak studies
- identify the most relevant papers
- distinguish evidence from opinion, assumptions, misreporting, and belief
- assess the validity of the study
- assess the usefulness and clinical applicability of the study
- recognise any potential for bias.

Critical appraisal helps to separate what is significant from what is not. One way we use critical appraisal in the Library is to prioritise the most clinically relevant content for our [Current Awareness Updates](#).

### How to critically appraise a paper

There are some general rules to help you, including a range of checklists highlighted at the end of this blog. Some key questions to consider when critically appraising a paper:

- Is the study question relevant to my field?
- Does the study add anything new to the evidence in my field?

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Participants (2)

- Sujatha Devi (Host, me)
- Dr. Jagannatha GV

Dr. Jagannatha GV

5:03 PM  
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Dissecting the literature: the importance of critical...

Critical appraisal skills are essential to informed d...

There are some general rules to help you, including a range of checklists highlighted at the end of this blog. Some key questions to consider when critically appraising a paper:

- Is the study question relevant to my field?
- Does the study add anything new to the evidence in my field?
- What type of research question is being asked?  
A well-developed research question usually identifies three components: the group or population of patients, the studied parameter (e.g. a therapy or clinical intervention) and outcomes of interest.
- Was the study design appropriate for the research question?  
You can learn more about different study types and the hierarchy of evidence [here](#).
- Did the methodology address important potential sources of bias?  
Bias can be attributed to chance (e.g. random error) or to the study methods (systematic bias).
- Was the study performed according to the original protocol?  
Deviations from the planned protocol can affect the validity or relevance of a study, e.g. a decrease in the studied population over the [course of a randomised controlled trial](#).
- Does the study test a stated hypothesis?  
Is there a clear statement of what the investigators expect the study to find which can be tested, and confirmed or refuted.
- Were the statistical analyses performed correctly?  
The approach to dealing with missing data, and the statistical techniques that have been applied should be identified. Original data should be presented clearly so that readers can check the

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**DEPARTMENT OF PUBLIC HEALTH DENTISTRY**

**e-DISCUSSION FOR POSTGRADUATES**

Date:19-06-2020

**Session I: 10.45 am – 11.30 am**

**Faculty:** Dr. Jagannatha G.V

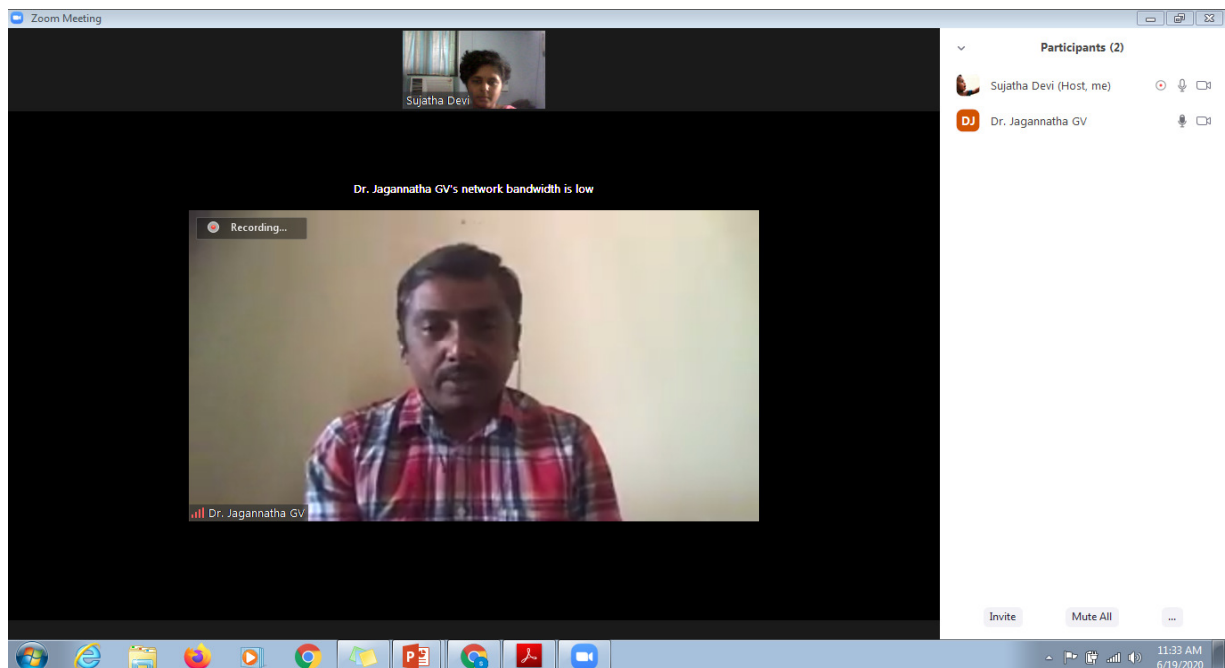
**PG Students:** Dr.Sujatha Devi


**Total No of PG Students:** 1/1

**Seminar topic: Pain**

**Summary :**

The classification of sensations, definition of pain , receptors of sensory stimuli were explained in brief. The the classification of nerve fibres, the structure and neurons of spinal cord and its tracts were briefed about. The pathway of pain transmission from the stimuli to the brain , the mechanism of first order, second order and third order neurons were explained in brief. The definition of action potential, its generation, resting membrane potential were explained. the steps in progression of the signal like transduction, conduction, transmission, modulation and perception , neurotransmitters, neuro modulators was also explained. the concept of gate control theory , classification of pain and different scales to measure pain were also briefed about. the ways to improve the seminar by adding theories of pain transmission, giving examples for the pain classifications, briefing about the mnagement of dental pain and the prctical limitations experienced by the dentists in treating pain were suggested.

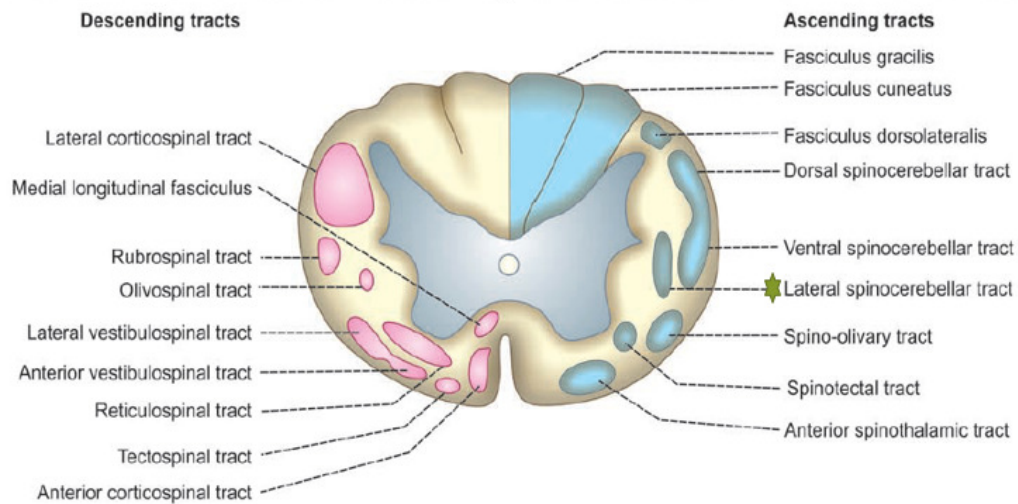


 **Chettinad**  
Dental College & Research Institute

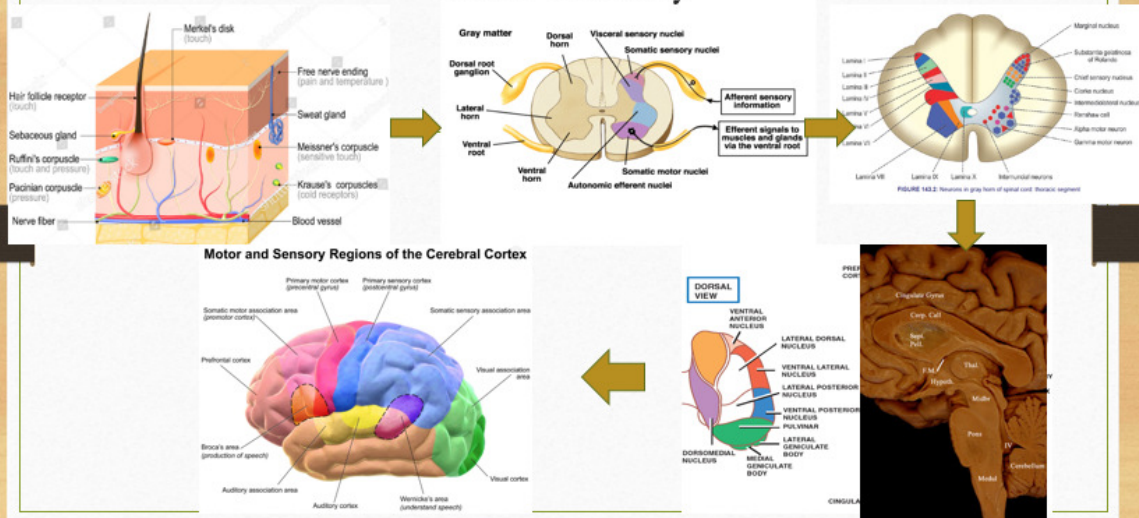
# PAIN

**B.K.SUJATHA DEVI**  
**1<sup>st</sup> YEAR PG**  
**DEPARTMENT OF PUBLIC HEALTH DENTISTRY**

## Tracts of Spinal Cord



## Pain Pathway



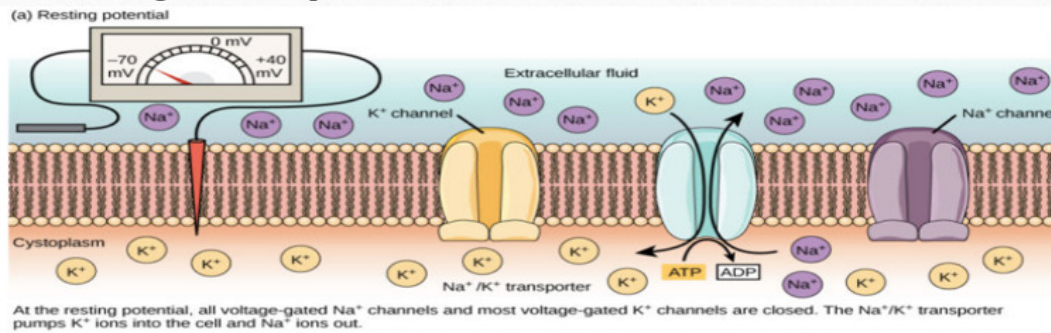


## Resting membrane potential

Table 1. Ion Concentration Inside and Outside Neurons

Ion	Extracellular concentration (mM)	Intracellular concentration (mM)	Ratio outside/inside
Na <sup>+</sup>	145	12	12
K <sup>+</sup>	4	155	0.026
Cl <sup>-</sup>	120	4	30
Organic anions (A <sup>-</sup> )	—	100	

- Resting membrane potential for neurons -50 to -75mV



## Classification

### ETIOLOGY

#### NOCICEPTIVE

#### NEUROPATHIC

#### SOMATIC

#### VISCERAL

#### PERIPHERAL

#### CENTRAL

**DEPARTMENT OF PUBLIC HEALTH DENTISTRY**

**e-DISCUSSION FOR POSTGRADUATES**

Date:20-06-2020

**Session I: 6pm – 7pm**

**Faculty:** Dr. Jagannatha G.V

**PG Students:** Dr.Sujatha Devi

**Total No of PG Students:** 1/1

**Discussion topic:** Critical appraisal of scientific research Part 2

**Sub topic :** Study designs

**Summary :**

A brief discussion about the steps in analysis of the study design was given. What is an exposure, what does assigning exposure mean was explained. The analysis of how to identify the study design like whether the exposure was done by the investigator, whether the samples were randomly assigned or not, whether a control group was chosen or not were explained. the concept of a positive control group and negative control group was explained. the concept of allocation concealment was also explained. the need and importance of a descriptive study was also explained.



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### I. Observational designs

**A. Exploratory studies** used when the state of knowledge about the phenomenon is poor: small scale, of limited duration. Their aim is to explore an unknown field.

**B. Descriptive studies (often surveys)** also known as **statistical research**, describes data and characteristics about the population or phenomenon being studied. However, it does not answer questions about eg: how/when/why the characteristics occurred, which is done under analytic research. Although the data description is factual, accurate and systematic, the research cannot describe what caused a situation. Thus, Descriptive research cannot be used to create a causal relationship where one variable affects another.

**C. Analytical Studies** used to test hypotheses: small / large scale. Examples: case-control, cross-sectional, cohort

#### Case Series

Clinical case-series: usually a coherent and consecutive set of cases of a disease (or similar problem) which derive from the practice of one or more health care professionals or health care setting.

Oxford Centre for Evidence-based Medicine – Levels of Evidence (March 2009)

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### Introduction to Study Design

Jeremy Howick ([jeremy.howick@phc.ox.ac.uk](mailto:jeremy.howick@phc.ox.ac.uk))

```

graph TD
    A[Did investigator assign exposures?] -- Yes --> B[Experimental study]
    A -- No --> C[Observational study]
    B --> D[Random allocation?]
    C --> E[Comparison group?]
    D -- Yes --> F[ ]
    D -- No --> G[ ]
    E -- Yes --> H[ ]
    E -- No --> I[ ]
  
```

Participants (2)

- Sujatha Devi (Host, me)
- Dr. Jagannatha GV

Invite Mute All

6:04 PM 6/20/2020