Epidemiology

تلخيص محاضرات د.أشرف

Lectures (20 , 21 , 22) instrument , screening & validity

التلخيص هو عبارة عن كتابة كلام الدكتور في شرحه للمحاضرات ، يعني معلومات المحاضرة اللي في السلايدات ولكن بالطريقة والترتيب اللي عرضهم فيها الدكتور

- Validity ⇒ هذي الأداة لهذا البحث وهذا القياس

- reliability ⇒ نتيجة يوثق عليها

- Consistency ⇒ ثبات النتيجة والقراءة على الأداة والتي هي أهم محدد الاستفادة شريطة أن لا تتغير الأسئلة.

* Validity and its reading = reliability are the 2 roles in instrument in researchs, so you have to describe instrument carfely in your established research.

* Gold standard are instruments which do 100% every time ~~is~~ in measurments, which are valid and reliable.

* Gold standard are ~~so~~ highly cost & time consuming, complicated to use, so in screening & survey it is not ~~Good~~.

* in screening we use another instrument that are not gold standard, ibs validity are less, so it will Produce

1. True Positive
2. False negative

⟹ in already Positive readings

1. True negative
2. False ~~neg~~ Positive

⟹ in already negative readings

* Screening are related to detection of disease or condition in Preclinical Phase, Patient looks healthy and that is a difficult in screening

* screening for ~~disease~~ are :-

1. important disease
2. Dangerous ⟹ which has dangerous complications if occur
3. has well-defined stages ⟹ mainly Preclinical Phase.
4. high Prevelance ⟹ - main aim of screening to low the Prevelance.
   ↳ So you don't make screening for rare diseases.

* if you measure by questionnare without instrument, it is survey.

* screening done by instrument.
* screening elicit disease ~~during~~ in Preclinical phase, not during disease phase.
* screening are not measure incidence because it doesn't ~~measure~~ related to cases, it applied at Preclinical phase.

* survey will measure incidence, it ~~was~~ applied on diseased.

* we don't use gold Standard instrument except in research centers, some times it will be dangerous as well as it doesn't used except by expire, also it is expensive

* Validity = 100% Positive
* reliability = 100% negative

* True Positive = Sensitivity
* ~~Specificity~~
* false negative = Specificity

describes instrument which are not gold standard.

* ~~Sens~~
* Sensitivity = Validity in non gold standard
  Specificity = reliability in non gold Standa
* most of screenings done by non gold standard.

$$\text{Sensitivity} = \frac{\text{Number who test positive with disease } (a)}{\text{Number with disease } (a+c)}$$

$$\text{Specificity} = \frac{\text{Number who test negative without disease } (d)}{\text{Number without disease } (b+d)}$$

* any instrument will give result, the important thing for you to ensure the result collected by instrument other than gold standard are correct result, this is known as
Predictive Value

Positive Predictive Value

negative Predictive Value

PPV = Number of +ve with disease / Number who +ve test

NPV = No. who -ve test without disease / No. who tested -ve

* ■ when you establish your research, you have to know that the journals has degrees according to degree of methodology in research, mainly tool which has been used

$$\text{Positive predictive value} = \frac{\text{Number who test positive with disease } (a)}{\text{Number who test positive } (a+b)}$$

$$\text{Negative predictive value} = \frac{\text{Number who test negative without disease } (d)}{\text{Number who test negative } (c+d)}$$

* accuracy ⟹ دقة دقة الجهاز في حسابات ال True Positive و True negative

* the Plot on which the accuracy = relation between specificity & sensitivity are known as Reciver operating characteristic (ROC) curve.

* The accurate tool has ROC value ≥ 0.8 (equal or more 0.8)

* befor using any tool in research for data collection to calculate incidence or prevelance for any condition, you have to know five informations about e your tool:-

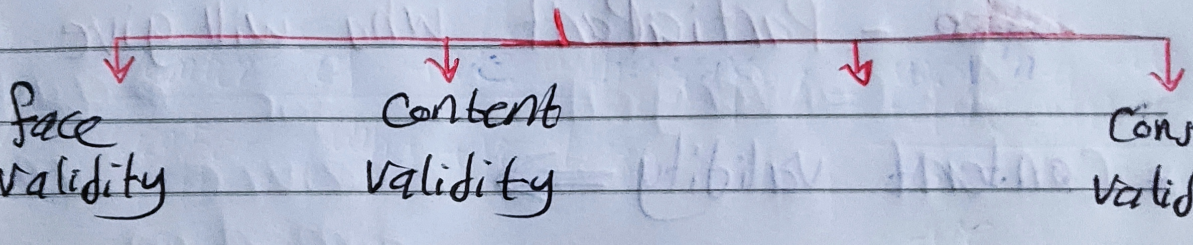
[redacted]

5 الدكتور ما ذكر ال

* one of most important steps in research to get correct results and relation between Case and other factors, is to get good sample.

- getting sample and measurment some thing related to tool which used.

* Validity



* tool which you use may be instrument or other as quastionnare

* Types of validity are done according to the type of the instrument you are going to choose the root in order to validate your quastionnare.

* Face validity ⟹

بتجيب أسئلة معينة لازم تكون
من مصادر وبتختار مجموعة من الفئة اللي
بدك تقيسها ، لما بجاوبوا عليها بتسألهم
انه هذي الأسئلة بتعتبر أنها كانت
بتقيس اشي بالضبط ؟؟

- lowest type of validation
- used in tools which are as
  scal
- Particapant who will give outcomes

* Content validity ⟹

-used in tools and instruments
which as scale

* نفس اللي قبلها ، بس مش مصطلحها
واعتمد فيها على نفس الـ subject ، لا
feedback حقي واحد خبير راح ال
بعت الاسئلة وهو بيعطيني نتيجة

- expert who will give out comes

* kappa statistic ⟹

- used to make statistical resultes from quastionnare by ~~Collect~~ content validity.

* Criterion-related validity ⟹

Criterion ⟶ الصفة اللي بدك تقيسها
what are you going to measure by this instrument.

Criterion

Predictive

The ability of quastionare or instrument to make prediction related to state which measure, but at different tymes

Concurrent

The ability of quastionnare or instrument to make prediction related to state which measured when it measured by new & old tools at same time

* Construct validity ⟹

- Purely Stastics for quastionar
- not for instruments, quastionar only
- quastions as same for samples that measure same dimention
- each Psychatric concept has degrees and dimentions.

** make:-

1. convergen ⟹ for * qustions measure same dimention

2. divergen ⟹ seperate each dimention from another.

* يعني انت هنا السعادة فيها تفاصيل، مثلاً سعادة نفسية وسعادة مالية وسعادة حياتية ... الخ، انت بتعتبر كل جزء منهم dimention، وبتقيسه بشكل منفصل بأسئلة منفصلة تقيسه، بعدين بتجمع نتايج واحصائيات عددية لكل جزء من أجزاء السعادة منفصل.