Editorial

First Things First - The Model of Research Shape the Results

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1. INTRODUCTION

In the past years, the number of scientific journals and publications has risen considerably [1] and will keep rising. Even for the scientific journals that have a peer-review system, a lot of articles do not have methodology quality nor have the results misinterpreted by the authors and the readers. Therefore exist an urgent need to clarify some points that remain obscure due to the overcomplicating of scientific terms, so health care professionals can understand and apply in clinical practice what they are reading.

By reading, interpreting critically, and applying in practice the available evidence, the professional uses in the most correct way the term “Evidence-Based Practice”, defined as the use of the best available evidence applied to the clinical practice [2].

Mainly, in medicine and health sciences, we have three types of different studies, observational, interventional, and reviews.

2. OBSERVATIONAL STUDIES

Observational studies usually, as the proper name defines, observe and understand associations and correlations between two or more variables, and cannot be used to define relations of cause and effect [3].

- **Transversal**

  In this type of study, the researchers define one specific moment of time of the chosen sample. It is used to define the prevalence (%) of some variable in the sample [3].

  \[ \text{i.e. What is the prevalence of cardiopathy, in this region, that eats fast food?} \]

- **Case-Control**

  This is a retrospective study, so the researchers seek associations between one or more current conditions with variables that happened in the past [3].

  \[ \text{i.e. The research has a sample of 100 cardiopathy} \]
volunteers, what health habits are associated with heart
diseases?

- **Cohort**
  This is a prospective study, so the researchers will develop a
  follow-up program for a determined sample to understand
  the incidence of a condition with time.

  *i.e. The research has a sample of 100 healthy volunteers, is
  fast food-related to heart diseases? The researchers will
  follow up with these volunteers for a determined time (it
  can be 3 months, 1 year, 10 years – it depends on the
  research) and be able to identify changes in health status
  as heart diseases.*

  The cohort studies are the most reliable in the
  observational studies because the researcher can control
  some of the possible variables that can influence the result
  of the study [3].

3. **INTERVENTIONAL OR CLINICAL TRIALS**

Clinical Trials are made to understand the relation cause
and effect, also to test and validate a null or alternative
hypothesis. This type of study assists the health care
professionals in decision-making. This kind of
interventional studies can be:

- **Controlled and Non-controlled**
  A Controlled Clinical Trial is when the research has two or
  more groups, being one of those groups a control/placebo.
  When there is no control/placebo group the research is
  defined as a Non-controlled Clinical Trial [4].

  *i.e. For a controlled trial, the researcher wants to try the
  effectiveness of drug therapy, so the sample is divided into
  two groups: The test group will receive the drug pill and
  the control/placebo will receive an empty pill.*

- **Randomized and Non-randomized**
  Randomization is the random allocation of the sample
  participants into the groups. It is made so the individual
  characteristics of the participants do not impact the results
  of the research, since there is 50% (in two-group research)
  allocation chance in any of the groups. When the research
  is non-randomized, the individual characteristics may
  cause a negative/positive bias impact [4].

  *i.e. To randomize the researcher may use playing cards, a
  coin flip, a computer randomization program.*

- **Blinded, Double-Blinded, Triple-Blinded, or
  Non-Blinded**
  Blinded is when one of the parts of the study does not
  know about the test or control group [4].

  *i.e. Blinded: Only the sample does not know. Double-
  Blinded: The sample and the professional applying the
  therapy do not know. Triple Blinded: The double-blinded
  case and also the statistical analyzer do not know.*

4. **REVIEWS**

- **Literature Review**
  This review is the simplest and less reliable review. Authors
  may be partial to their own opinion and influence the
  results of the review, therefore it is not recommended
  for publishing articles (except when it is a narrative or
  critical review that has different objectives) [5].

- **Systematic Review**
  It is the most common review in the scientific field. There
  is a protocol, search, data extraction, quality appraisal, and
  data analysis explicit and well defined. The author needs to
  be impartial and non-opinion, reducing the risk of bias and
  influence in the results [5].

- **Meta-analysis**
  It is the most reliable review type and meta-analysis will
  always be systematic reviews. In a meta-analysis the
  researchers group the clinical trials from the systematic
  review and re-analyze the statistics (only possible to Meta-
  analyze when the trials have at least one statistical
  measured variable in common) as one big clinical trial [5].

5. **CONCLUSIONS**

Although these definitions are not the only aspects of
research, as all have statistical analysis, interpretation of
the own results, and discussion of those results, it is
important for the researcher to keep in mind that for each
kind of research question, there is a specific research
model, and the model of research will shape the results and
the interpretation of it.

In addition, the cited definitions must be clear for the
reader to interpret, introduce, and use evidence-based
practice into the clinical practice, enhancing efficacy,
results, and safety of the treatments.
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