Evaluation of Interventions in Disability

UNIT 1

Introduction

Disability is the global issue which would be the challenging matter of proper management and utilization of persons with disability. If it's failed to mainstreaming disability issues then it will be highly affected the global GDP as its huge numbers of disability and gradually increasing its number. The intervention of disability should be evidenced based and its highly required to evaluate the intervention in regular basis following research study.

Time needed to finish this unit	Approximately 4 weeks

Lessons of this unit

Lesson 1: The Scientific Investigation of Interventions.

Lesson 2: The inter-relationship between theory, evidence and intervention.

Lesson 3: The principles of Measurement.

Lesson 4: Discuss underlying theories and relate these to current clinical interventions.

Lesson 1: The Scientific Investigation of Interventions

Learning Objectives:

After completion of this lesson the learner will be able to

- Understand different scientific investigation related terminology as basics.
- Acquire knowledge about process of scientific investigation..

Keywords	Science, Investigation, intervention

Subject-matter

1.1.1 Science

Science is the innovative creation which initiate and processes the idea and knowledge as testable form and that might have pre determinations.

There are different specialized branches of modern science as

- **Applied science:** Study the intervening issues.
- **Formal Science:** Study logical and mathematical issues.
- **Social science:** Study peoples and surroundings.
- **Natural science:** Study the material of universe.

1.1.2 Investigation

Investigation is the systematic process of finding a problem or the real issues. In health science it's the process of finding the source of problem that helps for proper diagnosis. In research it's the process of finding the information required for the study.

1.1.3 Intervention

An intervention is a combination of program elements or strategies designed to produce behaviour changes or improve health status among individuals or an entire population. Interventions may include educational programs, new or stronger policies, improvements in the environment, or a health promotion campaign. Interventions that include multiple strategies are typically the most effective in producing desired and lasting change.

Interventions may be implemented in different *settings* including communities, worksites, schools, health care organizations, faith-based organizations or in the home. Interventions implemented in multiple settings and using multiple strategies may be the most effective because of the potential to reach a larger number of people in a variety of ways.

Evidence has shown that interventions create change by -

- Influencing individuals' knowledge, attitudes, beliefs and skills;
- Increasing social support; and
- Creating supportive environments, policies and resources.

1.1.4 Scientific Investigation

The investigation which follow the steps and process of scientific method and test re-test the information for authenticity, called scientific investigation. A **scientific investigation** is a plan for asking questions and testing possible answers.

1.1.5 Different Steps of Scientific Investigation

The scientific investigation starts with questions which we want to know the answer. Regarding the questions it would formulate a hypothesis and conduct an investigation. After investigation it would analyse the results and make a final conclusion and compare with the desire result.

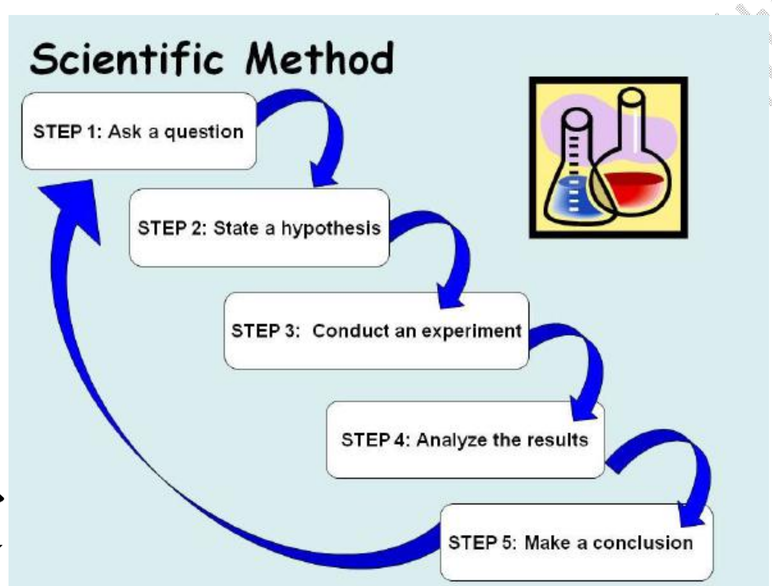

Figure 1.1: Steps of Scientific Investigation

1.1.6: Process Scientific Investigations

(a) Formulation of a question

The question can refer to the explanation of a specific *observation*, as in "Why is the sky blue?", but can also be open-ended, as in "How can I design a drug to cure this particular disease?" This stage frequently involves finding and evaluating evidence from previous experiments, personal scientific observations or assertions, and/or the work of other scientists. If the answer is already known, a different question that builds on the previous evidence can be posed. When applying the scientific method to scientific research, determining a good question can be very difficult and affects the final outcome of the investigation.

(b) Hypothesis

A hypothesis is a estimation, based on knowledge obtained while formulating the question that may explain the observed behaviour of a part of our universe. The hypothesis might be very specific, e.g. Ice Reduce swelling.

(c) Prediction

This step involves determining the logical consequences of the hypothesis. One or more predictions are then selected for further testing. Ideally, the prediction must also distinguish the hypothesis from likely alternatives; if two hypotheses make the same prediction, observing the prediction to be correct is not evidence for either one over the other.

(d) Testing

This is an investigation of whether the real world behaves as predicted by the hypothesis. Scientists test hypotheses by directing trials. The purpose of an experiment is to determine whether interpretations of the real world agree with or conflict with the predictions derived from a hypothesis. If they agree, confidence in the hypothesis increases; otherwise, it decreases. Agreement does not assure that the hypothesis is true; future experiments may reveal problems.

(e) Analysis

This involves determining what the results of the experiment show and deciding on the next actions to take. The predictions of the hypothesis are compared to those of the null hypothesis, to determine which is better able to explain the data. Evidence from other scientists and experience are frequently incorporated at any stage in the process. Depending on the complexity of the experiment, many iterations may be required to gather sufficient evidence to answer a question with confidence, or to build up many answers to highly specific questions in order to answer a single broader question.

Learners Activities	Prepare a study protocol of your research interest by following the above mention steps of scientific investigation

Summery
To conduct a scientific study we have to familiar with the scientific terms and steps of scientific methods. These will help us to search the other researchers study.

Study Skill

1.1.6 Questions

A. Put a tick (√) on the most appropriate answer

1 Modern science is NOT included
   a) Natural sciences
   b) Rehabilitation
   c) Formal sciences
   d) Applied Science

2. Which one is NOT the Steps of Scientific Investigation?
   a) Hypothesis
   b) Literature Review
   c) Experiment
   d) Analysis

B. Short Questions

- What is science and scientific investigation?
- What are the processes of scientific investigation?

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Lesson-2: The Inter-relationship between Theory, Evidence and Intervention

Learning Objectives

After completion of this lesson the learner will be able to

- Understand about theory, evidence and intervention.
- Acquire knowledge about different model of scientific inquiry.

Keywords	Theory, Evidence, Intervention

Subject-matter

1.2.1: Theory

Theory is a set of assumptions, propositions, or accepted facts that attempts to provide a plausible or rational explanation of cause-and-effect (causal) relationships among a group of observed phenomenon.

Theories guide the enterprise of finding facts rather than of reaching goals, and are neutral concerning alternatives among values. A theory can be a body of knowledge, which may or may not be associated with particular explanatory models. To theorize is to develop this body of knowledge.

1.2.2: Scientific inquiry

Scientific inquiry generally aims to obtain knowledge in the form of testable explanations that scientists can use to predict the results of future experiments. This allows scientists to gain a better understanding of the topic under study, and later to use that understanding to intervene in its causal mechanisms (such as to cure disease).

Most experimental results do not produce large changes in human understanding; improvements in theoretical scientific understanding typically result from a gradual process of development over time, sometimes across different domains of science. Scientific models vary in the extent to which they have been experimentally tested and for how long, and in their acceptance in the scientific community.

1.2.3: Elements of the scientific method

Four essential element of the scientific method are iterations, recursions, inter-leavings, or orderings of the following:

- **Characterizations** (observations, definitions, and measurements of the subject of inquiry).
- **Hypotheses** (theoretical, hypothetical explanations of observations and measurements of the subject).
- **Predictions** (reasoning including deductive reasoning from the hypothesis or theory).
- **Experiments** (tests of all of the above).

A linearized, pragmatic scheme of the four points above is sometimes offered as a guideline for proceeding:

a) Define a question
b) Gather information and resources (observe)
c) Form an explanatory hypothesis
d) Test the hypothesis by performing an experiment and collecting data in a reproducible manner
e) Analyse the data
f) Interpret the data and draw conclusions that serve as a starting point for new hypothesis
g) Publish results
h) Retest (frequently done by other scientists)

Characterizations:

The scientific method depends upon increasingly sophisticated characterizations of the subjects of investigation.

The systematic, careful collection of measurements or counts of relevant quantities is often the critical difference between pseudo-sciences, such as alchemy, and science, such as chemistry or biology. Scientific measurements are usually tabulated, graphed, or mapped, and statistical manipulations, such as correlation and regression, performed on them.

Hypothesis development:

Hypothesis is a suggested explanation of a phenomenon, or alternately a reasoned proposal suggesting a possible correlation between or among a set of phenomena.

Predictions from the hypothesis:

Any useful hypothesis will enable predictions, by reasoning including deductive reasoning. It might predict the outcome of an experiment in a laboratory setting or the observation of a phenomenon in nature. The prediction can also be statistical and deal only with probabilities.

It is essential that the outcome of testing such a prediction be currently unknown. Only in this case does a successful outcome increase the probability that the hypothesis is true.

Experiments

Once predictions are made, they can be sought by experiments. If the test results contradict the predictions, the hypotheses which entailed them are called into question and become less tenable. Sometimes the experiments are conducted incorrectly or are not very well designed, when compared to a vital experimentation.

Evaluation and improvement

The scientific method is iterative. At any stage it is possible to refine its accurateness and exactitude, so that some consideration will lead the scientist to repeat an earlier part of the process. Failure to develop an interesting hypothesis may lead a scientist to re-define the subject under consideration. Failure of a hypothesis to produce interesting and testable predictions may lead to reconsideration of the hypothesis or of the definition of the subject. Failure of an experiment to produce interesting results may lead a scientist to reconsider the experimental method, the hypothesis, or the definition of the subject.

Confirmation

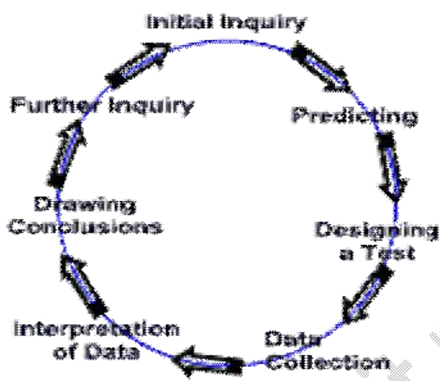
Science is a social enterprise, and scientific work tends to be accepted by the scientific community when it has been confirmed. Crucially, experimental and theoretical results must be reproduced by others within the scientific community.

1.2.4: Models of scientific inquiry

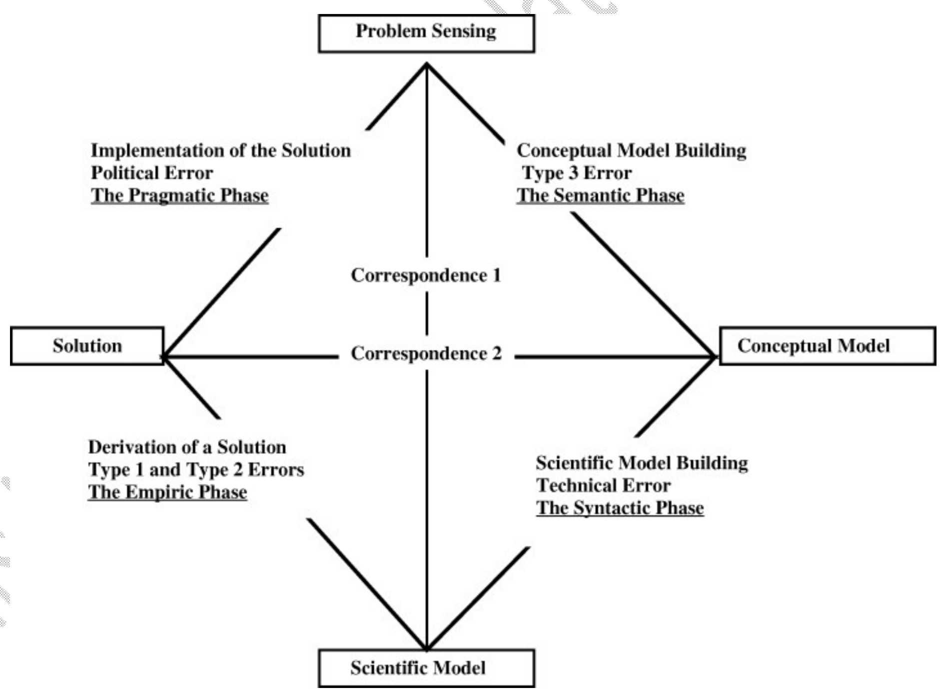
Fig no: Models of Scientific inquiry

Classical model

The classical model of scientific inquiry derives from Aristotle, who distinguished the forms of approximate and exact reasoning, set out the threefold scheme of abductive, deductive, and inductive inference, and also treated the compound forms such as reasoning by equivalence.



Pragmatic model



Abduction: Guessing, inference to explanatory hypotheses for selection of those best worth trying. From abduction, Peirce distinguishes induction as inferring, on the basis of tests, the proportion of truth in the hypothesis. Every inquiry, whether into ideas, brute facts, or norms and laws, arises from surprising observations in one or more of those realms (and for example at any stage of an inquiry already underway). All explanatory content of theories comes from abduction, which guesses a new or outside idea so as to account in a simple, economical way for a surprising or complicated phenomenon.

Deduction

Two stages

i. **Explication:** Unclearly premised, but deductive, analysis of the hypothesis in order to render its parts as clear as possible.
ii. **Demonstration:** Deductive Argumentation, Euclidean in procedure. Explicit deduction of hypothesis's consequences as predictions, for induction to test, about evidence to be found. Corollaries or, if needed, theoretic.

Induction: Induction involving ongoing tests or observations follows a method which, sufficiently persisted in, will diminish its error below any predesignate degree. Three stages:

i. **Classification:** Unclearly premised, but inductive, classing of objects of experience under general ideas.
ii. **Probation:** direct inductive argumentation. Crude (the enumeration of instances) or gradual (new estimate of proportion of truth in the hypothesis after each test). Gradual induction is qualitative or quantitative; if qualitative, then dependent on weightings of qualities or characters; if quantitative, then dependent on measurements, or on statistics, or on counting's.
iii. **Sentential Induction.** "Which, by inductive reasoning's, appraises the different probations singly, then their combinations, then makes self-appraisal of these very appraisals themselves, and passes final judgment on the whole result".

1.2.5: The role of theory in evidence-based health promotion practice:

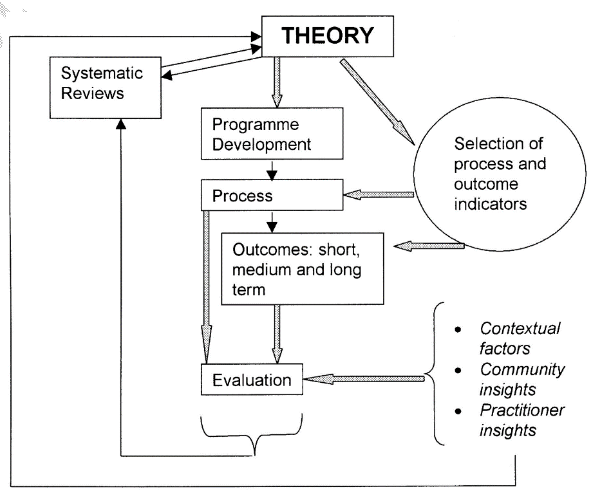


Fig: Theory, health promotion program planning and evaluation.

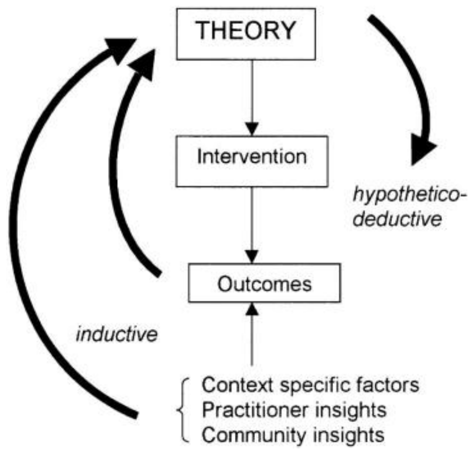


Fig: The development and application of theory—hypothetico-deductive and inductive approaches combined.

1.2.6: Inter-relationship between Theory, Evidence and Intervention (TEI):

TEI Relationship	Description	References
Framing problems	Theory (e.g. a theory of how social change happens) enables the systematic critique of the taken for granted assumptions embedded in policy problems.	Hommels (2005) provides an overview of 'frames'–a set of concepts from technology studies concerned with fixed ways of thinking and acting that can constrain the working practices of planners, engineers, architects etc. Rein and Schon (1993) write about the concept of frames in policy analysis.
Using data/research findings to inform intervention design	The use of data for intervention design, which comes from empirical research that 'operationalises' aspects of theory. NB: data does not only have a 'real' role but also justifies/legitimises.	Mackenzie (1981), Law (2009), Osborne and Rose (1999) write about how social statistics and large scale surveys enact a particular social world. Though there are critiques of such methods , few alternatives are offered. There is a history of approaches to this aspect of the TEI in health research. These move beyond critique to the development of

		alternatives. For example there are critiques of systematic review and randomised control trials: (Pawson et al., 2005; Cartwright and Hardie, 2012). Alternatives include realist review (Pawson et al., 2005; Pawson and Tilley, 1997), and meta-narrative mapping (Greenhalgh, 2004).
Intervention influence **and change**	Theory and research provides understanding of the potential role policy can play in social change.	Cartwright and Hardie (2012) discuss cause and effect in the context of policy intervention. Rip (2006) writes about reflective governance. Shove and Walker (2007) critique transitions management. (Pollitt, 2008) writes about temporalities of policy.
Intervention evaluation	Focuses on collecting particular kinds of data to evaluate the success or failure of particular interventions or programs	Recent publications focus on a 'what works?' agenda in all areas of public policy. (HM Government, 2013; Puttick, 2012) Cartwright (2010)and Cartwright and Hardie (2012) critique the focus on 'what works?'

Learner's Activity Evidenced based health education Practice

Summary

The interventions should be evaluated in regular basis and it should be used the best evidenced while practice any intervention.

Study Skills

Short Questions

- What is scientific method?
- What are the Elements of the scientific method?
- Describe Pragmatic model of scientific theory.
- What are the role of theory in evidence-based health promotion practice
- Describe Inter-relationship between Theory, Evidence and Intervention (TEI)

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Lesson-3: The Principles of Measurement

Learning Objectives:

After completion of this lesson the learner will be able to...........

- Understand measurement used in disability management.
- Acquire knowledge about different measurement scale.

Keywords	Measurement

Subject-matter

1.3.1: Definition of measurement

Measurement is the acquisition of information about a state or phenomenon (object of measurement) in the world around us. This means that a measurement must be descriptive (observable) with regard to that state or object we are measuring: there must be a relationship between the object of measurement and the measurement result.

1.3.2: Descriptiveness (observability) of a measurement

The descriptiveness is necessary but not sufficient aspect of measurement: when one reads a book, one gathers information, but does not perform a measurement. A second aspect of measurement is that it must be selective: it may only provide information about what we wish to measure and not about any other of the many states or phenomena around us.

In accordance with the **three above aspects: descriptiveness, selectivity, and objectiveness**, a measurement can be described as the mapping of elements from an empirical source set onto elements of an abstract image set with the help of a particular transformation (measurement model).

Source set and image set are isomorphic if the transformation *does copy* the source set structure (relationship between the elements).

1.3.3: Definition of instrumentation

In order to guarantee the objectivity of a measurement, we must use artifacts (tools or instruments). The task of these instruments is to convert the state or phenomenon into a different state or phenomenon that cannot be misinterpreted by an observer. The field of designing measurement instruments and systems is called instrumentation. Instrumentation systems must guarantee the required descriptiveness, the selectivity, and the objectivity of the measurement.

Why measuring?

Let us define 'pure' science as science that has sole purpose of *describing* the world around us and therefore is responsible for our perception of the world.

In 'pure' science, we can form a better, more coherent, and objective picture of the world, based on the information measurement provides.

In this context, the purpose of measurements is to regulate, control, or alter the surrounding world, directly or indirectly. The results of this regulating control can then be tested and compared to the desired results and any further corrections can be made. Even a relatively simple measurement such as checking the tire pressure can be described in the above terms:

- **A hypothesis:** we fear that the tire pressure is abnormal;
- Perform measurement;
- Alter the pressure if it was abnormal.

1.3.4: Types of measurements

To represent a state, we would like our measurements to have some of the following characteristics.

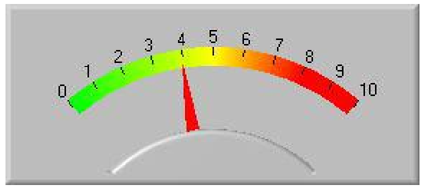
- Distinctiveness: $A = B$, $A \neq B$.
- Ordering in magnitude: $A < B$, $A = B$, $A > B$.
- Equal/unequal intervals: $|A-B| < |C-D|$, $|A-B| = |C-D|$, $|A-B| > |C-D|$.
- Ratio: $A = k B$ (absolute zero is required).
- Absolute magnitude: $A = k_a\ REF$, $B = k_b\ REF$ (absolute reference or unit is required).

1.3.5: Characteristics of Measurement Levels:

Level of measurement	Characteristics	Descriptive Statistics
Nominal	No, Order, Distance or Origin	Frequency in each category, percentage in each category, mode
Ordinal	Order but not distance or origin	Median, range, percentile ranking
Interval	Both order and distance but no origin	Mean, standard deviation, variance
Ratio	Order, Distance and Origin	Geometric mean, coefficient of variation

1.3.6: Scaling of measurement results

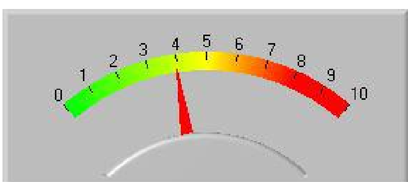
A scale is an organized set of measurements, all of which measure one property. **Level of measurement** or **scale of measure** is a classification that describes the nature of information within the numbers assigned to variables. Psychologist Stanley Smith Stevens developed the best known classification with four levels, or scales, of measurement: nominal, ordinal, interval, and ratio.

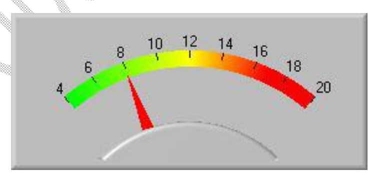


The types of scales reflect the types of measurements:

1. *Nominal* scale,
2. *Ordinal* scale,
3. *Interval* scale,
4. *Ratio* scale,
5. *Absolute* scale.

A scale is *not* always unique; it can be changed without loss of isomorphism.





Note that a high-level scale should *usually* allow all the lower-scale measurements.

Nominal scale

The nominal type differentiates between items or subjects based only on their names or (meta-) categories and other qualitative classifications they belong to; thus dichotomous data involves the construction of classifications as well as the classification of items. Numbers may be used to represent the variables but the numbers do not have numerical value or relationship: for example, a globally unique identifier.

Examples of these classifications include gender, nationality, ethnicity, language, genre, style, biological species, and form. In a university one could also use hall of affiliation as an example. Other concrete examples are

- **In grammar, the parts of speech:** noun, verb, preposition, article, pronoun, etc.
- **In politics, power projection:** hard power, soft power, etc.
- **In biology, the taxonomic ranks below domains:** Archaea, Bacteria, and Eukarya

- **In software engineering, type of faults:** specification faults, design faults, and code faults

Nominal scales were often called qualitative scales, and measurements made on qualitative scales were called qualitative data.

Ordinal scale

The ordinal type allows for rank order (1st, 2nd, 3rd, etc.) by which data can be sorted, but still does not allow for relative *degree of difference* between them. Examples include, on one hand, **dichotomous** data with dichotomous (or dichotomized) values such as 'sick' vs. 'healthy' when measuring health, 'guilty' vs. 'not-guilty' when making judgments in courts, 'wrong/false' vs. 'right/true' when measuring truth value, and, on the other hand, **non-dichotomous** data consisting of a spectrum of values, such as 'completely agree', 'mostly agree', 'mostly disagree', 'completely disagree' when measuring opinion.

Interval scale

The interval type allows for the *degree of difference* between items, but not the ratio between them. Examples include *temperature* with the Celsius scale, which has two defined points (the freezing and boiling point of water at specific conditions) and then separated into 100 intervals. Ratios are not meaningful since 20 °C cannot be said to be "twice as hot" as 10 °C, nor can multiplication/division be carried out between any two dates directly. However, *ratios of differences* can be expressed; for example, one difference can be twice another. Interval type variables are sometimes also called "scaled variables", but the formal mathematical term is an affine space.

Ratio scale

The ratio type takes its name from the fact that measurement is the estimation of the ratio between a magnitude of a continuous quantity and a unit magnitude of the same kind (Michell, 1997, 1999). A ratio scale possesses a meaningful (unique and non-arbitrary) zero value. Most measurement in the physical sciences and engineering is done on ratio scales.

Absolute scale

Examples: measurement of any physical quantities by comparison against an absolute unit (reference). No transformation can be used to change the scale.

1.3.7: Comparison of scale:

Incremental Progress	**Measure Property**	**Mathematical** Operators	**Advanced** Operations	**Central** Tendency
Nominal	Classification, Membership	=, !=	Grouping	Mode

Ordinal	Comparison, Level >, <	Sorting	Median
Interval	Difference, Affinity +, -	Yardstick	Mean, Deviation
Ratio	Magnitude, Amount *, /	Ratio	Geometric Mean, Coefficient of Variation

Learner's Activity	Make examples of different measurement scales

Summary

The above all scale would be used for measuring the interventions properly and it could find out the level of significance of the information.

Study Skills

Short Questions

- What is measurement scale?
- Why measurement is important?
- Highlight the Characteristics of Measurement Levels
- Comparison of different measurement scale

References

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Lesson-4: Discuss Underlying Theories and relate these to Current Clinical Interventions

Learning Objectives

After completion of this lesson the learner will be able to…………

- Gain knowledge about intervention, clinical intervention, role and theory of intervention.
- Understand about the strategy of intervention.

Keywords	Current clinical intervention theories

Subject-matter

1.4.1: Intervention

An intervention is a combination of program elements or strategies designed to produce behavior changes or improve health status among individuals or an entire population. Interventions may include educational programs, new or stronger policies, improvements in the environment, or a health promotion campaign. Interventions that include multiple strategies are typically the most effective in producing desired and lasting change.

Clinical Intervention

Clinical interventions include invasive and non-invasive procedures, and cognitive interventions.

Invasive:

(a) Therapeutic interventions where there is a disruption of the epithelial lining generally, but not exclusively, with an implied closure of an incision (e.g. operations such as cholecystectomy or administration of a chemotherapeutic drug through a vascular access device);

(b) Diagnostic interventions where an incision is required and/or a body cavity is entered (e.g. laparoscopy with/without biopsy, bone marrow aspiration).

Non-invasive

Therapeutic or diagnostic interventions undertaken without disruption of an epithelial lining (e.g. lithotripsy, hyperbaric oxygenation; other health interventions such as hydrotherapy; diagnostic interventions not requiring an incision or entry into a body part such as pelvic ultrasound, diagnostic imaging).

Cognitive

An intervention which requires cognitive skills such as evaluating, advising, planning (e.g. dietary education, physiotherapy assessment, crisis intervention, bereavement counselling).

1.4.2: An approach to using theory for implementation planning:

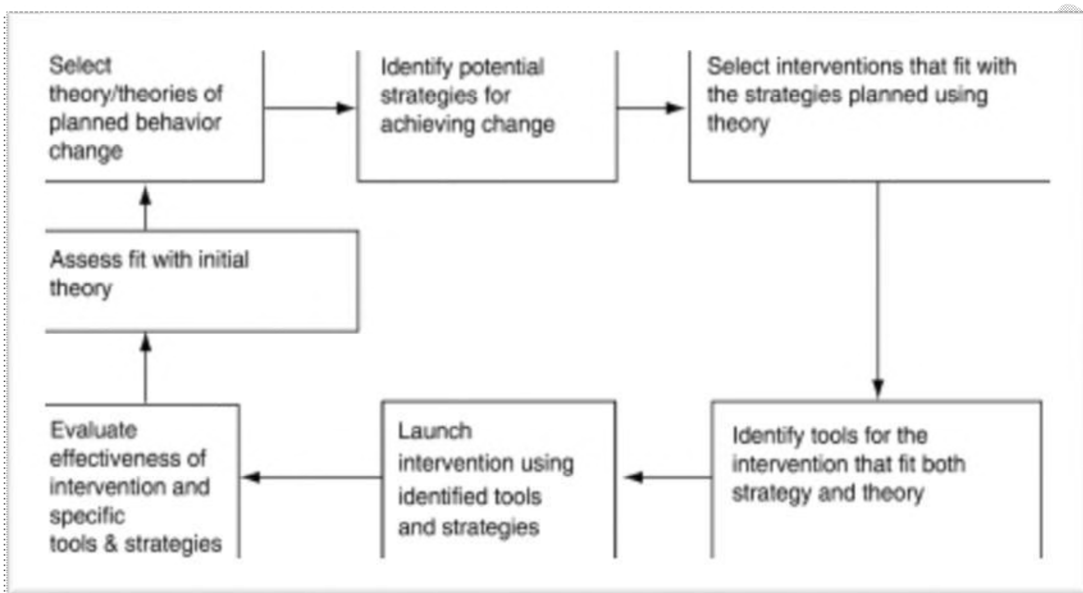


Fig: Theory for implementation planning

1.4.3: THE ROLE OF MODELS IN CHOOSING STRATEGY

In most health services research studies, heuristic models are used primarily to demonstrate the variables to be included in measurement and in analysis. The boxes in the models are used as categories to demonstrate types of variables. In implementation research, both the boxes and what is contained in them, and the arrows indicating theorized functional relationships, are important.

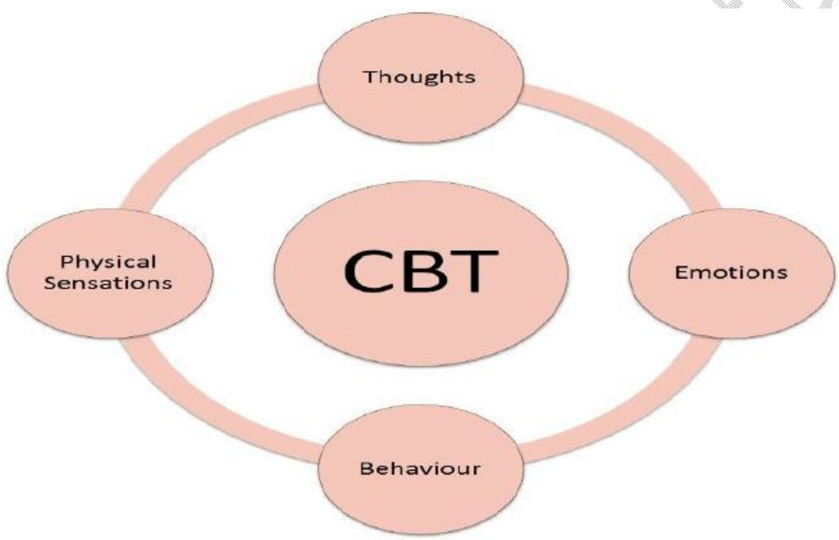
The strategy may still be high level, linked to theory. It provides overall direction for further planning. It may include more than 1 intervention, and should also include contingency plans for addressing barriers and maximizing use of facilitators, as these emerge through the process of implementing the intervention and carrying out the planned strategy. Assessment and enumeration of probable barriers and facilitators should be precursors to strategy selection or be concurrent as part of strategy planning. Development of strategy, and strategic planning for implementing an intervention, are often not included in the process of planning to initiate behaviour change. If the theory underlying the planned change includes both individual-level theory and change at some level above that of the individual, an assessment of organizational readiness to change and existing organizational culture and climate may be appropriate as part of strategic planning.

1.4.4: THE ROLE OF STRATEGY IN SELECTING INTERVENTIONS

Once a guiding strategy is selected based on the underlying theory or theories guiding the study, mapping the strategy to interventions is essential. Here the literature on interventions in promoting evidence-based practice implementation is helpful. There is a broad catalogue of interventions, with some information about what appears to be more or less effective.

The choice of intervention, which is the focus of most implementation studies, should be dependent primarily on the selected theory: why do people behave as observed in this setting, and what intervention could affect desirable change?

1.4.5: Clinical Examples of Cognitive Behaviour Therapy (CBT)



Cognitive intervention: Below are two examples or clinical vignettes that demonstrate a typical cognitive intervention called cognitive restructuring:

Clinical Example-01: A woman seeks help for low self-esteem. The therapist might help the client identify her automatic negative thought patterns called **cognitive distortions**. This stage of treatment is referred to as **functional analysis**. Together, they identify the client's automatic thought, "I am worthless." The therapist then helps her learn to interrupt this thought pattern and replace it with a more positive one of her choosing, such as "I have value." They would attempt to do this with other cognitive distortions that contribute to her low self-esteem.

1.4.6: Behavioural Intervention

Cognitive behaviour therapy also focuses on changing a person's unhealthy and problematic behaviours, actions, and responses. The focus is on replacing the problematic behaviour with a more effective behaviour.

Clinical Example-02: A man recovering from alcohol addiction works with his therapist to identify high-risk situations that trigger the impulse to drink. Together they develop strategies for overcoming these impulses. The client begins to learn and practice new coping skills and rehearses ways, for example, to avoid or deal with social situations that might trigger a relapse. These might include relaxation techniques, mental distractions, or substituting another less harmful behaviour.

1.4.7: Providing Therapeutic nursing Interventions

Interventions are action plans put in place to fix a problem or health condition. In nursing, interventions are not meant to be curative (healing), they are meant to comfort and assist patients by supporting or carrying out medical orders and interventions. **Therapeutic nursing interventions** help to alleviate symptoms, decrease pain, and incorporate **holistic** care (care that accommodates a person's physical, psychological, spiritual, and social needs).

Healing vs. Comfort

Nancy is a nurse who has been working on a medical-surgical unit for the past few years. She works the evening shift and therefore has the opportunity to interact with physicians as well as family members when they come to visit their loved ones. Nancy has a lot of experience in many different units and hospitals but has always enjoyed this particular setting. On this unit, she learned to balance the needs of patients, their family members, and the medical team.

Nurses like Nancy are responsible for carrying out physician or provider orders, which are also considered interventions. What makes these interventions different from therapeutic interventions is that they are medical in nature, in an effort to heal or cure medical symptoms or problems.

Making Interventions Therapeutic

Nancy carries out many doctor's orders throughout her shift. An example of Nancy supporting a medical intervention would be for her to administer a medicine or to apply a designated treatment to a deep wound. A therapeutic intervention would require Nancy to tailor or personalize treatments to what works well for that patient. This requires her to sometimes go above and beyond simply carrying out doctor's orders.

With a little creativity, Nancy can turn a standard order into therapeutic treatment. Here are two examples:

Medication Administration

As mentioned, Nancy is responsible for ensuring that patients receive their medication. This means that medicines are delivered safely and on time. Through her years of nursing experience, Nancy has learned that patients may have preferences on how they take their medicine. For example, some patients may prefer that they receive their medicine with applesauce or food, which may help to prevent an upset stomach. As the nurse, Nancy is aware that when it doesn't interfere with how the medicine works, offering snacks along with medicines or along with meals may help reduce common medication side effects like indigestion, upset stomach, and reflux.

Painful Treatments

Nurses can find creative ways to show compassion by taking standard treatments and making them therapeutic. Nancy recently cared for a patient with extensive burns who experienced a lot of pain during dressing changes and wound care. The treatments were originally ordered for 8 AM daily. After learning more about her patient, Nancy found out that he worked nights for the past 40 years, and had a sleep routine that consisted of 8 hours of sleep during the day time.

Nancy realized that the 8 AM treatments were almost intolerable for her patient despite receiving pain medication. She spoke with her patient and learned that he was exhausted by 8 AM, making him irritable and especially sensitive to pain at that time. He was receptive to having the treatment time changed. Because the treatment was a medical order, she spoke with the physician who agreed to change the time to 8 PM which was much more tolerable for the patient.

Learner's Activity	Make an example of Clinical Examples of Cognitive Behaviour Therapy

Summary
Different strategies are used here for clinical interventions and its evaluation

Study Skills

Short Questions

- Define intervention and clinical intervention.
- What are the strategy of intervention?
- Describe Cognitive Behaviour Therapy (CBT).

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