

# Research Presentation – Generic Outline

## Introduction

The introduction is a description of the problem addressed by the research. This section typically includes at least some of the following topics:

1. Statement of the problem and its significance.
  - a. Example A:
    - i. 500 000 new cases of skin cancer are diagnosed each year.
    - ii. Most skin cancers are the result of UV radiation.
  - b. Example B:
    - i. Many cutaneous conditions are associated with AIDS.
    - ii. Data on the prevalence of skin disorders from prospective, controlled studies are lacking.
2. A careful analysis of facts that have some bearing on the problem, presented in a systematic and orderly fashion.
  - a. Example A:
    - i. A popular source of UV radiation is tanning beds.
    - ii. However, tanning beds are promoted to the public as “safe” due to their use of UVA, not UVB, radiation.
    - iii. UVA radiation causes erythema, allergic reactions, corneal burns, retinal damage, and cataracts and produces degenerative and neoplastic changes.
    - iv. Federal guidelines mandate that consumers be warned of these potential complications.
  - b. Example B:
    - i. Several skin conditions have been reported in association with AIDS.
    - ii. Presentation of skin diseases in AIDS is often atypical, more severe, explosive, extensive, and recalcitrant.
3. Review and evaluate the literature pertinent to the problem.
  - a. Example A:
    - i. One other published study on tanning beds suggests that customers are inadequately warned about potential dangers (Bruyneel-Papp F, et al. Am Acad Derm. 1988;18:1030-8).
  - b. Example B:
    - i. There is a newly observed association between AIDS and seborrheic dermatitis, but the actual prevalence is unknown (Eisenstat BA. N Engl J Med. 1984;311:189).
4. Provide a succinct, precise, and unambiguous statement of the research problem or question.
  - a. Example A:
    - i. How much do proprietors of tanning salons know about the risks of tanning beds and tanning?
  - b. Example B:
    - i. What is the relative prevalence of seborrheic dermatitis patients with AIDS?

5. Provide a precise statement of the hypothesis (most commonly found in analytical research) or the objectives of a study (most commonly found in survey and descriptive research).
  - a. Example A:
    - i. To study reasons for the continued popularity of tanning salons and evaluate the proprietor's knowledge of the risks of tanning.
  - b. Example B:
    - i. Seborrheic dermatitis occurs more frequently in patients with AIDS as compared to a control population.

## **Methods**

The methods should be described with sufficient detail that another investigator can replicate the study under comparable conditions. The methods section needs to be presented in a logical order to facilitate understanding.

1. Present the study design.
  - a. Example A:
    - i. A survey of tanning establishments.
  - b. Example B:
    - i. Cohort study of patients with AIDS.
2. Provide a clear description of the sample.
  - a. Mode of selection, how representative the sample is, information about possible biases.
  - b. Example A:
    - i. Tanning establishments in one medium-sized, midwestern community that were located in the phone book.
    - ii. All establishments were contacted in person by the authors.
  - c. Example B:
    - i. All patients with the diagnosis of AIDS seen at an urban dermatology clinic during a one-year period were enrolled in the study (the "cases").
    - ii. All cases must fulfill the CDC criteria for AIDS.
    - iii. Cases were compared to age and sex-matched patients without AIDS (the "controls").
3. Provide information about the measures.
  - a. Example A:
    - i. Perceived reasons why patrons visit tanning salon.
    - ii. Size of tanning salon (number of tanning beds).
    - iii. Knowledge of safety regulations.
    - iv. Knowledge of the adverse affects of tanning.
    - v. How the power and UV wavelength of tanning beds are measured.
    - vi. How patrons are informed of potential hazards.
    - vii. How often complications occur.
  - b. Example B:
    - i. Detailed dermatological examination performed on each case and control.

- ii. Diagnosis of seborrheic dermatitis made by clinical examination and excluding other mimics.
  - iii. Grading system for seborrheic dermatitis severity was developed and applied to all cases.
- 4. Provide information about the instrument.
  - a. Reliability, validity, and standardization of the test and psychometric characteristics of scales or tests used.
  - b. Example A:
    - i. Interview consisted of a 13-question, multiple-choice format.
    - ii. Author generated and administered.
    - iii. Reviewed by dermatologists for content accuracy.
    - iv. Piloted for clarity.
  - c. Example B:
    - i. Clinical examination was performed by authors.
    - ii. Diagnosis confirmed by attending faculty.
    - iii. Biopsies performed when diagnosis in doubt.
    - iv. Reliability of scale was validated by chart review.
- 5. Describe operational or field procedures followed to collect data.
  - a. Describe where, when, and how data were collected.
  - b. Example A:
    - i. Midwestern college town with a population of 450 000.
    - ii. Data collected between January 1990 and April 1990.
    - iii. Interviewers identified themselves as physicians and explained the purpose of the study.
    - iv. All responses recorded on a standard interview form by the interviewers.
  - c. Example B:
    - i. Large, urban, university-associated dermatology clinic.
    - ii. Data collected between November 1983 and October 1984.
    - iii. Data collection and recording performed by authors.
- 6. Describe the statistical treatment of the data.
  - a. Describe how the data will be reported (frequencies, means, ratios, standard deviations, etc.).
  - b. If appropriate, describe what statistical tests were used for each unique category of measures, the p value or confidence interval, and the power of the study (especially if the results are not statistically significant).
  - c. Example A:
    - i. Descriptive data reported as means and ranges, frequencies, and percentages.
  - d. Example B:
    - i. Descriptive data reported as means, ranges, frequencies, and percentages.
    - ii. Proportions of cases with seborrheic dermatitis were compared to proportions of controls by chi-square analysis or Fischer's exact test.
    - iii. Relative risk calculations and confidence intervals.

- iv. Alpha value set at 0.05 ( $p < 0.05$ ).

## Results

This consists of a logical and orderly presentation of the collected data. Confine remarks to the objective findings; eschew a subjective or speculative presentation. Consider how best to display data by using charts, tables, figures, or graphs.

1. Present response data and reasons for dropouts or incomplete data set.
  - a. Example A:
    - i. 31 of 34 tanning salons participated.
    - ii. 1 tanning salon could not be located.
    - iii. 1 proprietor refused.
    - iv. 1 set of data incomplete.
  - b. Example B:
    - i. 18 patients with AIDS enrolled.
    - ii. 15 patients with HIV infection enrolled.
    - iii. 30 randomly selected, age and sex-matched controls enrolled.
    - iv. 3 patients with HIV excluded because there was not a detailed dermatological examination prior to their deaths.
2. Present pertinent demographic data.
  - a. Example A:
    - i. Mean age of patrons 26 years, range 2 to 65 years.
    - ii. 48% of establishments had 2 or fewer tanning beds.
  - b. Example B:
    - i. AIDS patients included 17 men and 1 woman.
    - ii. HIV patients included 12 men.
    - iii. Age range 25 to 47 years.
    - iv. Risk factors for AIDS included homosexuality (14), intravenous drug use (3), and sexual contact with an IV drug user (1).
3. Present study data.
  - a. Example A:
    - i. "Most Important" reasons for tanning.
      1. 32% appearance.
      2. 71% prevent sunburn.
      3. 13% skin treatment (acne).
      4. 13% relaxation.
    - ii. Presence of tanning guidelines.
      1. 55% age restrictions.
      2. 84% frequency of exposure.
      3. 97% duration of exposure.
    - iii. "Always" informed patrons about hazards.
      1. 90% corneal burns, vision problems, and skin burns.
      2. 80% pruritus, rash, allergic reaction, and photosensitizing medications.
      3. 61% skin cancer.
    - iv. Range of UVB radiation in tanning bed.
      1. Mean 3.3%, range 0.7% to 5.0%.

2. 13 did not know.
  3. Some beds were entirely UVB radiation for “quick tan.”
  4. UV wavelength measured by written light source specifications.
  5. No measure of power output.
- b. Example B:
- i. AIDS patients had at least one of the previously described cutaneous disorders.
    1. 15 candidiasis, 13 herpes simplex.
  - ii. 15 of 17 AIDS patients (83.3%) had seborrheic dermatitis.
    1. 3 severe, 9 moderate, 3 mild.
  - iii. 5 of 12 HIV patients (41.7%) had seborrheic dermatitis.
    1. 3 mild, 2 severe (AIDS vs. HIV,  $p < 0.02$ ).
  - iv. 3 of 30 control patients (10%) had seborrheic dermatitis.
    1. All mild cases (AIDS vs. controls,  $p < 0.001$ . HIV vs. controls  $p = 0.07$ ).
  - v. Severity of seborrheic dermatitis correlated with short-term prognosis.
    1. 6 AIDS patients died, 3 developed severe seborrheic dermatitis, and 2 developed moderate dermatitis within 1 year to 6 months of death.
      - a. Relative risk calculation 2.5 (95% CI = 1.9-3.3).
    2. 2 HIV patients with severe seborrheic dermatitis went on to develop AIDS during study; 1 died.
    3. No control patient with seborrheic dermatitis died.

## Discussion

Restate the problem, and briefly summarize the methodology and findings. Do not introduce new findings that were not presented in the results. Draw conclusions that are based upon the data, and accept or reject the research hypothesis (if stated). Discuss the generalizability of the results beyond the study, state its limitations, make recommendations for future studies, and make final recommendations based upon the data.

1. Restate the problem.
  - a. Example A:
    - i. UVB causes skin cancer and skin damage.
    - ii. Tanning beds advertised as safe because they use UVA.
    - iii. FDA states that UVA radiation provides no benefit to human health.
    - iv. Data from many studies suggest that UVA radiation may pose a threat to human health.
  - b. Example B:
    - i. Seborrheic dermatitis is associated with a number of medical disorders.
    - ii. An increased prevalence of this and other skin conditions has been noted in patients with AIDS.

- iii. No prospective, controlled studies have been performed.
- 2. Summarize conclusions.
  - a. Example A:
    - i. Tanning beds are not entirely free of UVB radiation—in fact, UVB radiation in tanning beds is equal to that in sunlight.
    - ii. Proprietors are aware of government guidelines but fail to follow them.
    - iii. Proprietors are not knowledgeable about tanning hazards.
    - iv. No establishment measured the power output of tanning beds.
    - v. Patrons are not fully informed of dangers.
  - b. Example B:
    - i. There is a significant increase in seborrheic dermatitis in patients with AIDS compared to controls.
    - ii. There is a significant increase in seborrheic dermatitis in patients with AIDS as compared to HIV-infected patients.
    - iii. The severity of seborrheic dermatitis may have short-term prognostic significance.
- 3. List support for the study's findings found in the literature.
  - a. Example A:
    - i. One previous study (see Bruyneel-Rapp) supports findings.
  - b. Example B:
    - i. One previous observational study noted an increase in seborrheic dermatitis.
    - ii. Seborrheic dermatitis may be the result of infection with *Malassezia*, *Candida*, or bacteria and may explain its occurrence and severity in patients with altered immune status.
- 4. Study generalizability.
  - a. Example A:
    - i. Limited to similar cities that lack legislation for regulating tanning beds.
  - b. Example B:
    - i. Generalizable to patients who meet CDC requirements for AIDS and HIV infection and seek care from a specialty clinic.
- 5. Study limitations
  - a. Example A:
    - i. Biased in favor of tanning industry due to nature of survey.
    - ii. Survey limited to one midwestern city.
  - b. Example B:
    - i. Small study size.
    - ii. Patients seen at specialty clinic, not in general medical population.
- 6. Accept or reject the research hypothesis.
  - a. Example A:
    - i. No hypothesis in this descriptive study.
  - b. Example B:
    - i. Accept research hypothesis.
- 7. New questions

- a. Example A:
    - i. Are the results replicable in other communities?
    - ii. Would results be different in a community with tanning bed regulations?
  - b. Example B:
    - i. Are results replicable in a general, non-referral population?
8. Final recommendations based upon the data
- a. Example A:
    - i. Tanning beds pose a potential health threat.
    - ii. Most proprietors are ignorant of the dangers.
    - iii. Regulation of the tanning industry should be considered.
  - b. Example B:
    - i. The occurrence of severe seborrheic dermatitis in homosexual men and IV drug users should suggest the diagnosis of HIV infection or AIDS.

By completing a topic outline, you will have a first draft of all the possible topics you could present at the meeting. Since the presentation is only 10 minutes long, you will need to make decisions about what to keep and what to cut. How do you decide what to cut? The best method is to prioritize the topics in your outline. First, identify the basic information in the four major categories that you simply must present. This represents the “must say” category. If you have done your job well, the retained content will answer the following questions:

Introduction: Why did you do this project?  
 Methods: How did you do it?  
 Results: What did you find?  
 Discussion: What do the results mean?

After you have identified the “must say” content, identify information that will help the audience better understand the research. Call this the “elaboration” category. Finally, identify the content that you think the audience would like to know, provided there is enough time, and identify this as the “nice-to-know” category.

Preparing a presentation is an iterative process. As you begin to “fit” your talk into the allotted time, certain information you originally thought as “elaboration” may be dropped to the “nice-to-know” category due to time constraints. Use the following organizational scheme to efficiently prioritize your outline.

### **Prioritizing Topics in the Topic Outline**

1. Use your completed topic outline.
2. Next to each entry in your outline, prioritize the importance of content.
3. Use the following code system to track your prioritization decisions:

A = Must Say.

B = Elaboration.

C = Nice-to-Know.

4. Remember that this is an iterative process; your decisions are not final.
5. Review the outline with your mentor or interested colleagues, and listen to their decisions.