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# A case study of teaching research methods in health promotion to African American doctoral students

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# A case study of teaching research methods in health promotion to African American doctoral students

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## Abstract

It is challenging for doctoral level programs in public health and health promotion to build advanced level research competencies in minority students. The purpose of this case study was to present a research methods course that caters specifically to African American doctoral students and builds health promotion competencies. Some of the strengths of this course included its hybrid nature, ability to help students publish in journals, focus on African American issues, consideration of diversity in its planning and execution, and positive student evaluations. Some of the weaknesses of the course were its demanding nature and no exams. Some of the opportunities for the course included focusing on systematic reviews of determinants of health conditions and updating the reading materials. Some of the threats for the course include making this course a required course in the curriculum and having all students publish their papers as opposed to just half.

## Introduction

Roots of public health can be traced back to Indus Valley civilization that flourished from 3500 BCE to 1500 BCE and had the world's first sanitation system (Sharma, Branscum & Atri, 2014). Since that time this discipline has grown by leaps and bounds and today there are 2,397 accredited public health programs in the United States alone that are training public health professionals (Council on Education for Public Health [CEPH], 2015). Health promotion as a discipline emerged within public health around late 19th century, when the initial teaching programs emerged for training school health educators (Allegrante et al., 2004). There have been attempts to develop standards and competencies both in public health and health education/promotion. In 1978, the first meeting was convened in Bethesda, Maryland, to analyze the similarities and differences in preparation of health educators from a variety of practice settings with the possibility of developing consistent set of guidelines

(National Commission for Health Education Credentialing [NCHEC], Society for Public Health Education [SOPHE], & American Association for Health Education [AAHE], 2006). This effort and subsequent conferences led to the establishment of the National Commission for Health Education Credentialing (NCHEC) in 1988 that started the certification process of health educators and gave the credentials: certified health education specialist (CHES) and master certified health education specialist (MCHES) (NCHEC, 2015a).

Recently, in 2015, the Health Education Specialist Practice Analysis (HESPA) study identified 36 competencies and 259 sub-competencies of which 141 sub-competencies were for entry level, 76 for advanced 1 and 42 for advanced 2 levels (NCHEC, 2015b). It is the mandate for programs that are training doctoral level students in public health with specialization in health education/promotion to address these advanced 2 level competencies in their curriculum. These competencies are following.

1. Develop data analysis plan for evaluation.
2. Create statement of purpose.
3. Assess feasibility of conducting research.
4. Conduct search for related literature.
5. Analyze and synthesize information found in the literature.
6. Develop research questions and/or hypotheses.
7. Assess the merits and limitations of qualitative and quantitative data collection.
8. Select research design to address the research questions.
9. Determine suitability of existing data collection instruments.
10. Identify research participants.
11. Develop sampling plan to select participants.
12. Develop data collection procedures for research.
13. Develop data analysis plan for research.
14. Develop a plan for non-respondent follow-up.
15. Apply ethical principles to the research process.
16. Select, adapt and/or create instruments to collect

data.

17. Identify existing data collection instruments.
18. Adapt/modify existing data collection instruments.
19. Create new data collection instruments.
20. Create new items to be used in data collection.
21. Pilot test data collection instrument.
22. Establish validity of data collection instruments.
23. Ensure that data collection instruments generate reliable data.
24. Ensure fairness of data collection instruments.
25. Train data collectors involved in evaluation and/or research.
26. Collect data based on the evaluation or research plan.
27. Prepare data for analysis.
28. Analyze data using descriptive statistical methods.
29. Analyze data using inferential statistical methods.
30. Use technology to analyze data.
31. Synthesize the analyzed data.
32. Explain how the results address the questions and/or hypotheses.
33. Compare findings to results from other studies or evaluations.
34. Propose possible explanations of findings.
35. Identify limitations of findings.
36. Address delimitations as they relate to findings.
37. Draw conclusions based on findings.
38. Develop recommendations based on findings.
39. Disseminate findings using a variety of methods.
40. Serve as a mentor to others in the profession.
41. Develop materials that contribute to the professional literature.
42. Engage in service to advance the profession.

Likewise there have been competencies that have been developed in public health. These are organized into eight domains and three tiers (The Council on Linkages between Academia and Public Health Practice, 2014). The eight domains are:

- Analytical/Assessment Skills
- Policy Development/Program Planning Skills
- Communication Skills
- Cultural Competency Skills
- Community Dimensions of Practice Skills
- Public Health Sciences Skills
- Financial Planning and Management Skills

- Leadership
- Systems Thinking Skills

The three tiers are: entry level, supervisory level and executive level. For doctoral level preparation, once again tier 2 and 3 competencies need to be addressed through the curriculum. Transfer of these competencies becomes especially challenging in doctoral programs that are new, cater to minority students many of whom are first generation doctoral students, and many of whom are also working professionals. One such program is the Doctor of Public Health (Dr. PH) program at a Historically Black College/University (HBCU) catering to predominantly African American students at a newly formed School of Public Health.

#### **Purpose of the case study**

It is in this context that this case study will be presenting how one research seminar course at a Historically Black College/University (HBCU) catering to predominantly African American students is building some of these competencies and what have been some outcomes in this regard. Case study has been defined by Yin (1994) as an experimental investigation that narrates a current issue within its real life context. The advantages of the case study method include its rich documentation of the context, critical reflection, and closeness to reality (Sharma, 2008). On the other hand the disadvantages of this method are that it cannot provide the entire story and nothing can be said about the causal linkages of the variables (Sharma, 2008). The case study begins by describing the course layout which includes student profile, course objectives and course assignments. Then a linkage between topics covered, public health competencies, learning objectives of the course, and methods of student evaluation are discussed. Following this the course outcomes are presented. Finally, a framework of Strengths, Weaknesses, Opportunities and Threats (SWOT) (Sharma & Deepak, 2001) has been employed to debrief this case study.

#### **Course layout**

The course is called PHBS 715: Research Seminar in Health Promotion which is offered for three credits to doctoral students. The course was last offered in spring 2015 semester and was 15 weeks long. There were a total of eight students enrolled in the course. Seven of them were women and one was a man. All the students were of African American descent and were working either at the state health department or at State University or a County health department. Most of the students were in the second year of their

doctoral program. The course was delivered as a hybrid (face-to-face and online) to provide flexibility to the working students. The course objectives are following.

1. Identify salient health education and health promotion journals.
2. Retrieve articles using common health education and health promotion databases.
3. Review health education and health promotion articles using methodological criteria.
4. Identify health education and health promotion article titles that are good and those that are inadequate.
5. Evaluate and compose an abstract as a summarized representation of a health education and health promotion article.
6. Evaluate an introduction in a health education and health promotion article.
7. Evaluate description of sampling in a health education and health promotion article.
8. Evaluate description of instrumentation in a health education and health promotion article.
9. Evaluate description of design in a health education and health promotion article.
10. Evaluate description of results in a quantitative health education and health promotion article.
11. Evaluate description of results in a qualitative health education and health promotion article.
12. Evaluate description of discussion in a health education and health promotion article.
13. Review randomized controlled trials in health promotion using the CONSORT statement.
14. Review non randomized trials in health promotion using the TREND statement.
15. Prepare a systematic review article after topical reading on a health education and health promotion issue.

All the lecture notes were placed on Power Point Slides and uploaded on Blackboard platform at the beginning of the semester. The class times were from 5:30 pm to 8:10 pm on Wednesdays of the week. The class met face-to face on 11 out of 15 scheduled times and four times the classes were held online. When the classes were held online the students were to review the Power Point slides and complete an online skill building activity.

#### *Course assignments*

There were a total of three assignments in the course.

The first assignment had 13 parts, second assignment had two parts and the third assignment had only one product. All assignments needed to adhere to American Psychological Association (APA) 6<sup>th</sup> edition guidelines. Following assignments were to be submitted:

*Assignment #1: Skill Building Activities (Worth 650 points or 65%)*

In the class notes, at the end of each of the 13 modules, a skill building activity was provided. These are following.

#### **Week 1**

- Go to Library website.
- Choose at least four health promotion databases for search.
- Search for publications authored by the instructor of this course.
- Locate and procure any one full text original data-based research article and any one review-based article by the instructor of this course (other than the ones listed in the syllabus).
- Post the complete citation of the two articles in APA style in the discussion forum.

#### **Week 2**

Work on your assigned topic:

- Conduct a literature search and locate one primary research article that deals with an intervention on the above topic. Evaluate that article against the 11 guidelines presented in this module.
- Post your response in the discussion forum and read at least one other response.

#### **Week 3**

- For at least 50% of the guidelines (5/10) presented in this presentation locate one actual title from a health education (or related) journal from this year that would qualify as a good example and one actual title that would qualify as a bad example.
- Rephrase the bad example to improve it.
- Post your response (with 15 titles: 5 good examples, 5 bad examples, and 5 rephrased examples) in the discussion forum & comment on at least one other posting.

#### **Week 4**

- Locate an article on the assigned topic.
- Locate the guidelines/instructions to authors for submission to that journal.
- Read the article without reading the abstract.
- Prepare an abstract in your own words.
- Compare your abstract with existing abstract.
- What were the similarities and differences? Compare with the guidelines in this module. Post your abstract, actual abstract and your reflection in the discussion

forum & comment on at least one other posting.

### Week 5

- On the chosen topic, locate articles that establish importance of the problem (descriptive epidemiological articles), explain or predict the issue (theoretical and analytical epidemiological articles), and interventional articles.
- Review the articles and prepare an introduction section for a review article following the guidelines in this module (3 double space pages).
- Post in the discussion forum and read and comment on at least one other posting using 13 point guidelines.

### Week 6

- Locate any three articles from the literature.
- One of which uses a convenience sample.
- Another one uses a simple random sample.
- Third one uses a stratified random or cluster sample.
- Read the articles and prepare a review of the sampling using the guidelines mentioned in this module.
- Post the review in the discussion forum and comment on at least one other review.

### Week 7

- Locate an article that describes the development of an instrument.
- Evaluate the article using the guidelines provided in this module.
- Post your review in the discussion forum and comment on at least one other response.

### Week 8

- Locate an intervention study on your assigned topic.
- What is the design used in the study?
- Review the study against the seven guidelines provided in the module.
- Post your review in the discussion forum.

### Week 9

- Locate an article that evaluates an intervention or predicts a health behavior.
- Critique the results section of that article using guidelines in the module and post in the discussion forum.
- Read at least one more posting and comment on the observations.

### Week 10

- Locate an article that uses qualitative research.
- Review that article against the 10 guidelines presented in this module or RATS guidelines.
- Submit your review in the discussion forum and comment on at least one other posting.

### Week 11

- Locate any health education article.
- Read it with special focus on the discussion section.
- Review the discussion section against the 9 guidelines.
- Post your review in the discussion forum and comment on at least one other posting.

### Week 12

- Locate a randomized controlled trial in health promotion.
- Prepare a review using RCT checklist in CONSORT Statement.
- Post your review in the discussion forum.
- Read and comment on at least one other posting.

### Week 13

- Locate a behavioral intervention that was not a randomized controlled trial.
- Prepare a review using checklist in TREND Statement.
- Post your review in the discussion forum.
- Read and comment on at least one other posting.

It was required that the students complete that skill building activity and submit it in Black Board within three days of the class. The student was also responsible for answering any follow-up questions or comments on the posting before the beginning of the subsequent class. Each posting was worth 50 points or 5% of the grade. For scoring 50 points the assignment was to meet the following five criteria: (1) specific, substantive, responsive to the question and have examples, where applicable: 10 points; (2) must be based on multiple peer-reviewed books/ journals or authentic websites; 10 points; (3) must follow correct APA style: 10 points; (4) must use correct spelling and grammar: 10 points; (5) must contribute to discussion by making 2-3 substantive follow-up postings to assignments of other learners and responding to all questions posed: 10 points.

*Assignment #2: Article Presentations (Worth 100 points or 10%)*

The student was required to locate, review, and make a class presentation on two articles from any professional health journal that dealt with any one of the following:

- (a) Determinants of a health behavior .
- (b) Instrument development (including validation, and/or reliability assessment) of any health behavior or its antecedents.
- (c) Evaluation of a health education or health promotion intervention.

Following guidelines were provided:

(a) In choosing the article the student should have made efforts to locate a recent article (published within the last three years -- only if no such article was found then the search could be dated back). Articles chosen for skill building activities in Assignment #1 or for Assignment #3 could be repeated here. However, the same article could not be presented twice.

(b) A sign-up sheet on the first day of the class was provided to allow the student to choose any two days of presentation. After signing, the dates could be changed only on mutual exchange between students.

(c) One class prior to the presentation the student was responsible for giving copies of the article to the instructor and all classmates; so that everyone could come prepared having read the article themselves.

(d) The student was required to prepare Microsoft Power Point slides as visual aids and make a presentation for 15-20 minutes underscoring the content and methodological strengths and weaknesses of the article. The student was responsible for answering questions and/or facilitating discussion around the study presented. Each presentation was worth 50 points or 5% of the grade. In grading this assignment following rubric was followed: (1) article selection: 10 points; (2) summary of content: 10 points; (3) methodological strengths and weaknesses: 20 points; (4) question-answer session: 10 points.

*Assignment #3 Review paper (Worth 250 points or 25%)*

Each student was assigned a health education topic with a target population using a random assignment method. Random assignment helped the students become trained in more than one area and not just in the area that they wanted to do their dissertation. All three assignments for this course could be done around that area and it was advisable to do so. The topics were:

- (a) Smoking prevention in adolescents
- (b) Smoking cessation in adults
- (c) HIV/AIDS prevention through safer sex in mentally ill
- (d) Physical activity promotion in African American women
- (e) Obesity prevention in children
- (f) Binge drinking prevention in college students
- (g) Bullying prevention in school students
- (h) Healthy eating in children

Students were to conduct a thorough search (systematic review), establish inclusion/exclusion criteria, retrieve the pool of articles and review those during the length of the course. Structured time slots were made available to facilitate this process. As an end product the student was to be able to articulate a title, abstract, introduction, review methodology (databases searched, key words used, inclusion/exclusion criteria), and meaningful arrangement of the topical areas in an approximately 20-25 page paper plus references. In addition the student was responsible for class presentation of the highlights of the review in 15-20 minutes using Power Point slides. If the student could locate a possible journal that accepted review articles on the topic he or she could adhere to the journal submission guidelines (including a cover letter) and that was considered to be a plus. The student was provided a written review of the assignment just like a journal article review. In grading following criteria were used: (1) abstract: 50 points; (2) introduction: 50 points; (3) methods: 50 points; (4) results: 50 points; (5) discussion: 50 points.

#### *Course Competencies and Learning Objectives*

Linkages between topics covered, public health competencies, learning objectives of the course, and methods of student evaluation are following. The public health competencies are the competencies selected by State University from the eight domains and three tiers described earlier (The Council on Linkages between Academia and Public Health Practice, 2014).

#### **1. Introduction to research in health promotion**

##### *Selected Public Health Core Competencies*

- Identify individual, organizational, community and societal influences on health and health behaviors

##### *Course Learning Objectives*

After completion of this course it is expected that the student will be able to:

- Identify salient health education and health promotion journals.
- Retrieve articles using common health education and health promotion databases.

##### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, skill building assignment at the end of the module (assignment #1), and assignment #2.

#### **2. Evaluating health promotion research**

##### *Selected Public Health Core Competencies*

- Identify individual, organizational, community and societal influences on health and health behaviors.

#### *Course Learning Objectives*

- Review health education and health promotion articles using methodological criteria.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, skill building assignment at the end of the module (assignment #1), and assignment #2.

### **3. Evaluating titles**

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Identify health education and health promotion article titles that are good and those that are inadequate.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, and skill building assignment at the end of the module (assignment #1).

### **4. Evaluating abstracts**

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Evaluate and compose an abstract as a summarized representation of a health education and health promotion article.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, skill building assignment at the end of the module (assignment #1), assignment #2, and assignment #3.

### **5. Evaluating introductions**

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Evaluate an introduction in a health education and health promotion article.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, skill building assignment at the end of the module (assignment #1), assignment #2, and assignment #3.

### **6. Evaluating samples**

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Evaluate description of sampling in a health education and health promotion article.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, skill building assignment at the end of the module (assignment #1), assignment #2, and assignment #3.

### **7. Evaluating instrumentation**

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Evaluate description of instrument in a health education and health promotion article.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, skill building assignment at the end of the module (assignment #1), assignment #2, and assignment #3.

### **8. Evaluating experimental procedures**

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Evaluate description of design in a health education and health promotion article.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, skill building assignment at the end of the module (assignment #1), assignment #2, and assignment #3.

### 9. Evaluating quantitative evaluation results

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Evaluate description of results in a quantitative health education and health promotion article.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, skill building assignment at the end of the module (assignment #1), assignment #2, and assignment #3.

### 10. Evaluating qualitative evaluation results

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Evaluate description of results in a qualitative health education and health promotion article.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, skill building assignment at the end of the module (assignment #1), assignment #2, and assignment #3.

### 11. Evaluating discussion sections

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Evaluate description of discussion in a health education and health promotion article.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, skill building assignment at the end of the module (assignment #1), assignment #2, and assignment #3.

### 12. CONSORT

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Review randomized controlled trials using the CONSORT statement.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, and skill building assignment at the end of the module (Assignment #1).

### 13. TREND

#### *Selected Public Health Core Competencies*

- Develop, implement and evaluate behavioral and structural interventions to prevent diseases, promote health, and improve the quality of life.

#### *Course Learning Objectives*

- Review non randomized controlled trials using the TREND statement.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, and skill building assignment at the end of the module (Assignment #1).

### 14. Systematic review

#### *Selected Public Health Core Competencies*

- Conduct rigorous and innovative social and behavioral science research relevant to public health.
- Identify and assess the need for health promotion intervention in special populations.
- Develop theory and evidence-based health promotion interventions in collaboration with the community, states, and at national levels.

#### *Course Learning Objectives*

- Prepare a systematic review article after topical reading on a health education and health promotion issue.

#### *Methods of Student Evaluation*

- Student evaluation will be determined via interactive class discussions, and assignment #3.

#### *Grading in the course*

The grading in the course was based on following criteria:



Assignment #1: 650 points (Skill building activities)

Assignment #2: 100 points (Articles)

Assignment #3: 250 points (Review)

A - 900 - 1 00 (90 - 100%)

B - 800 - 899 (80 - 89%)

C - 700 - 799 (70 - 79%)

D - 600 - 699 (60 - 69%)

F - < 599 (< 59%)

### Course outcomes

In terms of the letter grade, four students earned an A grade, two students earned a B grade and two students earned an incomplete grade. In terms of the students being able to publish their assignment #3, three students were successful in getting their papers published (Bland & Sharma, 2017; Bridges & Sharma, 2015; Udemgba & Sharma, 2015). Two were successful in getting their abstracts published (Bland & Sharma, 2015; Hayes & Sharma, 2015). In other words close to 50% of the class was able to get their first publication through this course.

### Strengths of the course

One of the strengths of this course was that it was hybrid allowing the students the flexibility to learn at their pace and interact in an online environment. At the same time the face-face-face interaction was beneficial to build a bond between the instructor and the students and the students themselves. Second strength was that it provided an opportunity for the students to write for publication and half of them succeeded at it. For all the students who published this was their first publication and will be beneficial in their careers. For students who could not publish the exercise was still helpful. The course helped demystify the process of writing for publication fall all the students. The third strength of the course was that it allowed the students to focus on African American issues and target populations for their assignments making this course more meaningful for their own needs. The fourth strength of the course was that student diversity was considered in designing and implementing this course. Examples were given that pertained to African Americans and which the students could relate to. The fifth strength of the course was that Assignment #1 broke down the necessary research process into smaller steps thereby building self-efficacy which has been shown to be useful in acquiring new knowledge and behavior (Bandura, 1986; Sharma, 2015). The sixth strength was that Assignment # 2 helped build presentation skills and overcome fear of talking before a group which many of

the minority students expressed. The seventh strength was that Assignment # 3 helped in synthesis skills and helped in scientific writing. Finally, on student evaluation of teaching the instructor earned a rating of 4.0/4.0 and the course earned a rating of 3.93/4.00 on 21 items.

### Weaknesses of the course

Two students could not complete this course indicating that it was perhaps too demanding for them with the constraints of their job and family responsibilities along with sickness. These students were given two additional semesters to complete the requirements of this course failing which their grades were to be converted to F grade. Some students expressed that this course was more demanding than their other courses. Future efforts will be undertaken to explore this concern more. There were no exams in this course and some critics may find that to be a weakness. However, the skill building was the core of this course as opposed to mere rote memorization of facts and therefore examinations were not included.

### Opportunities for the course

This course focused on the main assignment as a systematic review of interventions. Future offerings of this course could also include systematic reviews of determinants of health conditions which could extend the range of topics. There is a need to continually update the required readings in this course which included 17 articles in the course. Some of the published reviews by students should also be included in the required reading list so that future students can see what others have achieved.

### Threats for the course

If the students perceive this course as very demanding they could consider not taking this course as this is an elective in the curriculum. Efforts must be undertaken to make this course a required course for the students so that all students could benefit. Only half of the students were successful in getting their assignment published. This could be discouraging for some students as they might perceive this as the glass being half empty.

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