

**Real-life data: Using the Annual Campus Security Report to Teach Fundamentals of Research Methods and Design in Family Science**

Sharon N. Obasi  
University of Nebraska at Kearney

**ABSTRACT.** This manuscript describes the use of real-life data obtained from the Annual Campus Security (ACS) report mandated by the Clery Act to illustrate fundamental concepts in research methods and design in Family Science. Student responses to the use of the ACS report were also assessed. Feedback indicated that using real-life data from the ACS report facilitated comprehension of fundamental concepts in research methods and design.

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Direct correspondence to Sharon N. Obasi at [obasis2@unk.edu](mailto:obasis2@unk.edu)

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### **Real-life data: Using the Annual Campus Security Report to Teach Fundamentals of Research Methods and Design in Family Science**

Knowledge of research methods and design is imperative for Family Science professionals. Information or evidence garnered from research leads to articulation of policies and development of programs to help family scientists with their mission of strengthening and empowering individuals, families, and communities (Bartlett, Gjernes, Lotherington, & Obstefelder, 2016; Bogenschneider, 2014). Thus, research methods and design (RMD) courses are crucial to the Family Science curriculum. Such courses show students the myriad ways in which diverse topics may be studied within Family Science. These courses also encourage Family Science students to be critical consumers of information derived from research, honing their abilities to determine if and how information garnered from research can be translated into policy and programs to help families. These skills are necessary for family scientists.

Time, resources, and program constraints, especially at the undergraduate level, may restrict the ability of Family Science instructors to teach and expand on fundamental aspects of RMD. These include articulating research questions, developing research proposals, shepherding research proposals through review by Institutional Review Boards, data collection and analysis, and disseminating research findings in oral or written formats (Walsh & Weiser, 2015). One practical way to introduce students to essential aspects of RMD is by using extant, real-life data that resonate with students. This manuscript discusses how real-life data contained in the Annual Campus Security (ACS) report mandated by the Clery Act can be used to facilitate teaching of fundamental aspects of RMD. The paper also documents students' responses to the use of these extant data.

Enacted in 1990, the Jeanne Clery Act requires that all institutions of higher education receiving federal funding provide to the public information about campus crime and security (Summary of the Clery Act, n.d.). This information is referred to as the Annual Campus Security (ACS) report. The ACS report must be disseminated annually by October 1 and must include at least three (3) calendar years of campus crime statistics along with security policies and information on rights guaranteed to victims of sexual assault, domestic violence, dating violence, and stalking. The Clery Act requires reporting of crimes in seven major categories including criminal homicide (e.g., murder and non-negligent manslaughter), sex offenses (e.g., rape), robbery, aggravated assault, burglary, motor vehicle theft and arson. Other requirements include the reporting of hate crimes, domestic violence, dating violence, and stalking along with liquor law violations, drug law violations, and possession of illegal weapons. Thus, the ACS report contains a wealth of information that may be used to illustrate fundamental concepts of RMD. Furthermore, the ACS report resonates with all students because it focuses on campus security and safety (Baker & Boland, 2011). Students enrolled in face to face courses typically live on or near university campuses. The ACS report provides important information about their living environments. Students enrolled online, who may live in different communities, find out about campus safety at the institutions where they are taking classes as well as other colleges or universities that closer to where they reside within the United States.

Theoretically, the use of real-life data that is of personal interest to students aligns with certain aspects of the andragogical or learner-centered approach to education. According to Lindeman (1926), adult learners do not simply study while hoping that the information they learn will become useful. Instead, these learners attend to issues that resonate with them on a personal level. Then, they use facts and information from different spheres of knowledge to identify solutions to these issues. In the context of delivering what may be the only RMD course Family Science students will receive at the undergraduate level, a pedagogical approach is necessary initially to introduce novel information. Over time, however, it may be appropriate to incorporate aspects of andragogical design. According to theorists and practitioners, adult learners learn best when they want or need to know something, when there are opportunities to have control over the learning process, when there is an opportunity to practice and apply what has been learned, and when there is a focus on relevant problems and practical applications of concepts (Knowles, 1990; Ozuah, 2005). The ACS report provides a useful mechanism to facilitate learning through reporting of the incidence of crime on college campuses and through the articulation of policy regarding overall campus security, along with policies specific to victims of campus security violations.

Ideally, RMD courses should expose students to the complete research process including developing a research question, data collection and analysis, and dissemination of results. The use of extant data provides students with the ability to participate in the research process when time and resources may be limited. Students may use data such as that contained in the ACS report to develop research questions, conduct preliminary data analysis, and articulate future research ideas. Understanding, developing and interpreting information derived from research supports the ability of family scientists to translate research into policies and programs to empower individuals, families and communities.

This manuscript outlines how the ACS report mandated by the Clery Act may be used to teach essential concepts in RMD: articulating research questions, operationalizing variables, data collection, and analysis and interpretation of findings. This paper also shares student feedback on the use of the ACS and looks at whether using real-life data contributes to students' self-assessed understanding of RMD concepts.

## **Method**

### **Respondents**

Nineteen (19) students (18 females; 1 male) completed a survey designed to evaluate and provide feedback on an RMD course offered by the Department of Family Studies at a small public university in the Midwestern United States. Seventeen (89%) respondents self-identified as White/Caucasian and two (11%) respondents identified as Latino/Hispanic. This upper-level RMD course is the only research design and methods course offered by the Department of Family Studies at this university. It is a required course for an official program resulting in a Bachelor of Science in Family Studies with provisional certification as a family life educator (CFLE). Survey respondents included three (3) juniors and eleven (11) seniors who were pursuing either a major or a minor in Family Studies. Five (5) students declined to indicate their year of school.

## Procedure

RMD is taught once a year in the fall semester in the traditional face to face format and follows a 16-week schedule with two weekly meetings of 75 minutes each. The course is divided into four modules. Each module presents a variety of topics (refer to Table 1).

Weekly meetings typically consisted of lectures of about 50 minutes and class activities (individual or group) for the remaining 25 minutes. During the semester, students engaged in diverse RMD activities including developing an online survey using Qualtrics, completing Collaborative Institutional Training Initiative (CITI) training on social and behavioral research ethics, and crafting an Institutional Review Board (IRB) document for informed consent. Students also had opportunities to attend diverse research activities, including an international conference on world affairs, a regional conference on child development, and a university-sponsored student research symposium. Student performance in this course was assessed in various ways, which Table 2 outlines.

## Use of the Annual Campus Security Report

The RMD course begins with an overview of research philosophy (worldviews) and fundamentals of quantitative, qualitative, and mixed-methods research. At the very beginning and throughout the course, students are reminded of the utility of research to gather information and solve problems affecting individuals, families, and communities, including, for example, campus safety problems. The ACS report is first discussed as an example of using policy to address issues such as campus safety concerns. Once the new ACS report is released, it is incorporated into the course to illustrate several aspects of RMD. These include how to operationalize variables, how to develop and articulate research questions, how to collect and analyze data, and how to disseminate results. For example, when discussing operationalizing variables, students are asked to develop their own definitions of concepts such as dating violence or hate crimes and to compare their definitions with those in the ACS report. Students are also challenged to identify specific research questions that may be answered by using the ACS report. Research questions identified by students include:

- 1) Are there differences in the numbers of alcohol violations reported by urban and rural schools in specific states?
- 2) Are there differences in the numbers of alcohol violations reported at public versus private institutions?
- 3) Are there differences in the frequency of sexual assault incidents reported by institutions affiliated with faith-based organizations and those that are not?

Numeric information in the Annual Security Report may be used to illustrate data analysis and distinguish between descriptive statistics versus inferential statistics. For example, by relying on descriptive statistics students can perform simple comparisons of the frequency of different types of crime on college campuses based on several parameters. These include geographic location, student population size, and single-sex versus co-educational institutions. The ACS report may also be used to illustrate the utility of inferential statistics in predicting relationships between variables such as student population size and location and incidence of crime on campus.

## Feedback on the use of the Annual Security Report

Within two weeks of completing the RMD course, respondents were asked to provide feedback on the course by completing a 20-item survey delivered online via Qualtrics. This study was conducted with approval of the university's Institutional Review Board. Participants were informed that the survey had no impact on class performance, either in terms of extra credit for completing the survey or a penalty for not completing the survey. The survey was designed to supplement the customary faculty and course evaluation students complete at the end of a course. In this study, the survey provided students opportunities to discuss specific aspects of the course they found appealing or unappealing. Using self-assessment, students were asked to indicate what gains they felt they made in understanding different aspects of research methods and design. The survey did not specifically ask students about previous formal or informal research experience.

### Results

Based on their own assessments, 64.29% of respondents indicated “great gains” in understanding the importance of the use of real-life data such as the ACS report to illustrate research concepts. Specific student comments supporting this observation include:

- “Bringing in examples from the real world helped me understand and remember key concepts.”
- “The power points about real-life situations helped me remember important aspects of this class.”
- “Bringing in real-life examples I could connect them and remember them better.”

Students also indicated that using the ACS report helped with integrating different aspects of the RMD course. As a result of using real-life data, students reported “good gains” in research skills such as the critical reading of articles about issues raised in class (42.86%), identifying patterns in data (57.14%), recognizing sound arguments and appropriate uses of research (64.29%), developing logical arguments (50%), working well with others (57.14%), and “great gains” in preparing and giving oral presentations (46.15%). Specific skills that students identified included the ability to “think outside the box,” to make connections about why a particular study is conducted, and the ability to generate future research ideas.

Students were also asked to indicate to what extent they found specific course activities helpful in facilitating learning about RMD concepts. One-half of the respondents reported that using the ACS report was a “great help” in facilitating learning about research methods and design. Students indicated that other activities were also helpful. These included developing a Qualtrics survey (57.14%), writing an IRB document of informed consent (64.29%), and crafting a research proposal (71.43%). Students commented that class activities such as the use of real-life data via the ACS report afforded them better understanding of research material, opened their eyes to possibilities of research, and helped them with problem-solving.

## Discussion

The importance of research to family scientists is evident in the mission statement of the professional body of this discipline, the National Council on Family Relations (NCFR). NCFR advocates for “development and dissemination of knowledge about families and family relationships” (NCFR, 2017). Understanding the research process allows family scientists to build knowledge in their field, to articulate policy and program delivery, and to become critical consumers of scholarly and non-scholarly information, which may inform professional practice (Grzywacz & Allen, 2017). The ability to effectively teach a single-semester undergraduate course in RMD may be constrained by available time and resources. Such constraints can make it difficult to present important concepts thoroughly and to provide students with opportunities to collect and analyze data on topics that resonate with them. The use of extant data, however, may facilitate this process. This manuscript examines the use of real-life data, the ACS report mandated by the Clery Act, as a tool for discussing fundamental aspects of research methods and design. These include conceptualizing a research question, data collection and analysis, and dissemination of results. The ACS report provides a manageable data set on campus security, a topic that is especially relevant to students. Thus, these data provide a starting point to generate research questions, to examine methodology, to explore data analysis, and to derive conclusions from the analysis. Overall, respondents in this exploratory study indicated that the use of real-life data via the ACS report facilitated understanding of basic concepts of RMD.

While preliminary findings supporting the efficacy of using real-life data such as the ACS report are encouraging, this exploratory study has limitation. First, the manuscript focuses on the only RMD course offered by a Family Science program. Since this is the only RMD course, one can only expect general learning about the concepts of research. Based on student feedback, however, the use of real-life data such as the ACS report supplemented general learning. Nonetheless, in-depth study is necessary to expand on these observations. Second, there were only nineteen participants in the study, the majority of whom identified as female and as White/Caucasian. Thus, its findings are not generalizable. Third, no pre-course data were collected to assess prior experience with research or anxiety regarding the topics of RMD. When asked to comment on how the course changed their attitudes towards RMD, some students indicated increased confidence and enthusiasm about research. Their observations must be taken cautiously, however, because each student was not asked specific questions about prior experience with research or attitudes towards research.

Even with the acknowledged limitations, the findings of this exploratory study are promising and provide the basis for in-depth study of the response of students to the use of real-life data (e.g., ACS reports, census data, FBI crime statistics, etc.) in an RMD course. Such a study would adopt a pre- and post-test design so opinions about research and previous exposure to RMD courses can be ascertained at the beginning of the course. This design would help make a more compelling argument about changes in attitudes toward research that may occur as a result of the RMD course. An in-depth study would also allow researchers to ask more questions aimed at teasing apart evidence of general learning and about the impact of specific activities such as using extant data in facilitating understanding of RMD concepts.

Adoption of a pre-post design in a follow-up study is in keeping with principles of the scholarship on teaching and learning, defined as “systematic study of teaching and/or learning” (Hutchings, 2000; Maurer & Law, 2016). According to these principles, four types of questions may be investigated in the scholarship on teaching and learning: (1) What works?, (2) What is?, (3) Visions of the possible, and (4) Theory building. “What works” questions explore the efficacy of teaching methods. “What is” questions fully describe teaching and learning environments and may lead to development of “What works” questions. “Visions of the possible” questions focus on innovations in teaching and learning. “Theory building” questions focus on developing theoretical frameworks for the scholarship of teaching and learning. The exploratory study outlined in this paper falls into the “What works?” category in terms of indicating the efficacy of using real-life data such as the ACS report to teach key concepts in research. A follow-up study could extend that question to ask “What is?,” thus providing comprehensive description of teaching and learning environments where real-life data may be useful. This information could ultimately craft innovative ways to teach and evaluate courses in Family Science.

The use of real-life data that resonates with students supports the andragogical (learner-centered) approach to education. Theorized by Lindeman (1926) and expanded on by Knowles (1990), this approach includes six assumptions that can be made about adult learners. Adults learn best when they (1) know the utility or value of the material they are learning; (2) have autonomy over the pace of learning; (3) are able to incorporate previous experience into learning; (4) are able to apply knowledge acquired in real-life situations; (5) are able to use acquired information to perform tasks or solve problems; (6) are motivated to learn, grow, and develop (Knowles, 1990; Ozuah, 2005). Due to its focus on campus crime and safety, the ACS report provides information that is personally relevant to students who typically live on or near college campuses. By using this report in the context of teaching and learning about research, students are able to share opinions and ideas about a topic that is important to them. They are also motivated to find out more about the issue of campus safety by developing research questions to assess campus safety and by using the ACS to assess campus safety policies and programs.

The use of extant data such as the ACS report may also be beneficial in other courses relevant to Family Science, such as classes on social and family policy. Policy courses are sometimes met with apprehension; some students dismiss them as boring and dry. Thus, instructors are always seeking innovative ways to teach policy in a way that connects with students (Obasi & Hill, 2015). Effective policy is built on a substrate of reliable evidence garnered from multiple sources including expert knowledge, existing research, secondary sources, and stakeholder input. The ACS report mandated by the Clery Act provides unique opportunities to assess policies on campus safety and a platform for students to craft their own campus safety policies. The ACS report may also be used as a discussion-starter to illustrate formulation and implementation of policy and incorporated into a logic model exercise to identify programs to help minimize campus security concerns.

In summary, based on student feedback, this study concludes that the use of real-life data from the ACS report provides an effective way to illustrate key aspects of research methods and design. The content of the report resonated with students and facilitated understanding of research concepts. The use of extant data may be a practical way to teach research methods and

design, especially when time or resource constraints prevent students from developing their own research questions and conducting their own data collection and analysis.

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Sharon N. Obasi is an Assistant Professor in the Department of Family Studies at the University of Nebraska at Kearney, Kearney, NE 68849.



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**Table 1. Course Modules and Selected Topics**

Modules	Topics covered include:
What is research?	Research philosophy (worldviews) Developing and articulating a research question
Research Methods and Design	Fundamental concepts of quantitative, qualitative, and mixed-methods research Survey design
Research Ethics	Social and behavioral research ethics Social media and research
Research Dissemination	Effective oral and poster presentations Publishing research: Peer-reviewed journal articles, online publishing

**Table 2. Assignments and Grading Criteria**

Assignment	% of Total Grade
Exams (2)	14.3%
Journal Article reviews (4)	14.3%
Qualtrics Survey Development	7.2%
CITI Ethics training	7.2%
IRB document of informed consent	14.3%
Research proposal: Paper	20%
Research proposal: Oral presentation	8.5%
Attendance and participation	14.2%

Note. CITI – Collaborative Institutional Training Initiative; IRB – Institutional Review Board