

1.7: Case Studies

Learning Outcomes

- Case Study
- Types of Case Studies
- Case #1: Demographic Profile of Reentry Clients
- Case #2: A Holistic Model for Social Justice
- Case #3: A Health Disparities Model for Social Justice

A case study is an investigation into an individual circumstance (Gaille 2018)^[1]. In this final chapter, the case study method is applied to help you, the student, bridge the gap between statistical theory and practice. It is used to help you develop an understanding of the basic ideas in mathematical statistics while examining a contemporary real-life social justice issue.

Other advantages of the case method are (Gaille 2018):

- It turns client-level data into usable data.
- It turns opinion into fact.
- It furthers knowledge growth because there is interest in the case study.
- It can use a number of different research methodologies.
- It is good for formative research that is exploratory in nature.

Stake (1995)^[2] characterizes three main types of case studies: *intrinsic*, *instrumental*, and *collective*. An **intrinsic case study** is typically undertaken to learn about a unique phenomenon. The researcher should define the uniqueness of the phenomenon that distinguishes it from all others. In contrast, the **instrumental case study** uses a particular case (some of which may be better than others) to gain a broader appreciation of an issue or phenomenon. The **collective case study** involves studying multiple cases simultaneously or sequentially in an attempt to generate a still broader appreciation of a particular issue. These are, however, not necessarily mutually exclusive categories.

Three cases will be discussed in this chapter. In the first case on post-incarceration, an *intrinsic* case study is used to describe the demographic profile of fathers receiving reentry services from a provider in the city of Boston. By including two other cases, a *collective* case design is employed in an attempt to generate a broader appreciation of organizations that attempt to address a social justice issue, namely, health disparities and the social determinants of health. Specifically, we will study a neighborhood health center serving under-resourced communities/zip codes in Boston and a non-profit organization providing a wide spectrum of holistic care to the “poorest of the poor” in India. Collectively, these three cases are considered *instrumental* as exemplars of the more general phenomenon of social justice.

Before proceeding, the first and most important point is that the best statistical analyses cannot save an inferior **research design**. Research design is the foundation of a good study. If the design is weak, the analysis will crumble.

Case #1: Incarcerated and Reentry Fathers

As an *intrinsic* case study, this social justice issue is selected on its own merit and uniqueness. According to the National Responsible Fatherhood Clearinghouse (2023)^[3], the number of fathers in U.S. jails and prisons has increased four-fold since 1980. Among the more than 800,000 parents in federal and state prisons, 92 percent are fathers. The 2012 study, “Families and Reentry: Unpacking How Social Support Matters”^[4], concludes that connecting reentering fathers with support from family and friends is key for avoiding recidivism (returning to prison) and helping them re-establish their lives.

The framework for this case study is as follows:

A. Identify and Define the Research Question

Each case study centers on a **research question**. The question establishes the focus of the study by identifying the research object, which in this situation is incarcerated fathers who reenter their communities. The two primary research questions for this case study are:

- What are the characteristics of formerly incarcerated persons who are fathers receiving reentry services at a provider in the city of Boston?

- What do they self-report in areas of vulnerability, distress, emotional and behavioral health, relationships, parent-child engagement, and self-efficacy?

B. Select the Sample Size

In this step, the statistician decides on the **unit of analysis**—the number of cases, the type of cases, and the approach used to collect, store, and analyze the data.

This is the design phase of the case study method.

In this case study, the unit of analysis is clients who are receiving reentry services at a provider in the city of Boston. The sample size (n) is 289.

C. Evaluate and Analyze the Data

In this step, the statistician uses varied methods to analyze quantitative as well as qualitative data. The data is categorized, tabulated, and cross-checked to address the purpose of the study. Variables are labeled, and graphs are created to generate **descriptive statistics and inferential statistics**. This enables the statistician to approach the data in different ways and, thus, avoid premature conclusions.

Descriptive Statistics: Demographic Profile of Reentry Clients

Gender (n=289): Of the 289 clients, the gender composition of clients is 99% or 286 males, .7% or 2 transgender males, and .3% or 1 female. The high male participation rate is indicative of the mission and focus of the organization.

Age (n=265): The client base contains a greater number of people who are 19-34 years old (135 or 50.9%), followed by 35-64 years old (114 or 43%). The younger age group, 13-18 years old, has the lowest number of clients (16 or 6.1%). Separate from the 265 clients, there are an additional 24 clients whose date of birth is missing.

Race/Ethnicity (n=289): A majority of clients self-identify as Black/African American (213 or 73.7%). White is the second highest ethnic group (26 or 9%), along with Hispanic/Latinx (26 or 9%). American Indian/Alaskan Native (5 or 1.7%) was the third highest group, followed by Black/African American/Hispanic (3 or 1%). Fifteen clients (or 5.3%) self-identified in various other ethnic groups. One client (or .3%) chose “refused” as a response to the race/ethnicity question.

Primary Language Spoken (n=289): A majority of clients (271 or 93.9%) report English as their primary language spoken. Other languages spoken are Spanish (1 or .3%), Spanish & English (7 or 2.5%), Haitian Creole (2 or .7%), English & Haitian Creole (2 or .7%), English & Cape Verdean (2 or .7%), Cape Verdean (1 or .3%), English & French Cajun (1 or .3%), English/Haitian Creole/French Cajun (1 or .3%). One (or .3%) client indicated American Sign Language.

Connections with Boston Neighborhoods (n=289): As part of the intake process, clients are asked, “Do you live, work, receive services, visit family or friends in any of the following neighborhoods?” Most clients (145 or 50.2%) report connections with Dorchester. The second highest numbers are in the geographic areas of Roxbury (31 or 10.7%), Mattapan (23 or 8%), and Hyde Park (14 or 4.8%). Other communities indicated are Fenway-Kenmore (8 or 2.8%), Jamaica Plain (7 or 2.4%), West Roxbury (5 or 1.7%), Brockton (4 or 1.4%), Roslindale (4 or 1.4%), Quincy (2 or .7%), Randolph (2 or .7%), Allston (2 or .7%), Mission Hill (2 or .7%), and Cambridge (2 or .7%). Thirty-two or 11% reported having connections with multiple communities, such as Dorchester-Roxbury; Hyde Park-Roxbury-Fenway-Kenmore-Randolph-Brockton-Canton; and Dorchester-Mattapan-Hyde Park-Roxbury. Six clients (or 2.1%) reported, “No, I am not connected to any of these neighborhoods.”

Zip Code of Client’s Residence (n=205): The zip code 02124 is Dorchester Center. This zip code is where 94 (or 45.9%) of the clients report that they reside. Sixteen (or 7.8%) report zip code 02119-Roxbury, 13 or 6.3% for 02126-Mattapan, 13 (or 6.3%) report 02121-Dorchester-Grove Hall, 8 (or 3.9%) for 02136-Hyde Park, 4 (or 1.9%) for 02130-Jamaica Plain, 4 (or 1.9%) for 02169-South Quincy, 4 (or 1.9%) for 02301-Brockton, 3 (or 1.5%) for 02122-Dorchester, 3 (or 1.5%) for 02131-Roslindale, 3 (or 1.5%) for 02368-Randolph as their place of residence. Other zip codes have one or two clients, totaling 38 (or 18.5%) clients. One client (or .5%) reported being homeless, and another client (.5%) gave “N/A” as a response. These results confirm the findings from the previous section, Connections with Neighborhoods. Dorchester, Mattapan, and Roxbury are the three primary geographic areas in Boston where clients reside, secure support services, and engage with family and friends.

Sexual Orientation (n=289): Two hundred eighty-two (282 or 97.6%) of the 289 clients self-identify as straight (heterosexual). Three clients (or 1%) self-identify as bi-sexual, and one client (or .3%) as Gay. Two clients (or .7%) indicated that they did not feel

comfortable answering this question. One client (or .4%) indicated responded, “Not Sure/Questioning”.

Arrested (Spent Time in Jail/Prison) (n=289): When asked the question, “*Have you been arrested before (spent time in Jail/Prison)?*” a majority (209 or 72.3%) of the 289 clients responded, “Yes”. A smaller proportion (80 or 27.7%) of clients responded, “No”.

Education Level (n=289): A majority (100 or 34.6%) attended 12th grade-no high school diploma, while another 62 (or 21.5%) attended grades 1-11 or some high school (4 or 1.4%) or reported “no schooling completed” (2 or .7%). Ten clients (or 3.5%) have a high school diploma or a GED. The second largest group earned some college credits but no degree (64 or 22.1%). Several clients have acquired post-secondary degrees: Associate of Arts or Science (16 or 5.5%); Bachelor of Arts or Science (16 or 5.5%); Masters (14 or 4.8%); PhD (1 or .4%).

Employment (n=265): Most clients (99 or 37.4%) report being employed full-time, while 79 (or 29.8%) clients work part-time. Thirty-five (or 13.2%) indicated that they have been out of work for a year or more; 17 (or 6.4%) reported being out of work for less than one year. Other clients report being a student (13 or 5%), self-employed (12 or 4.5 %) or unable to work (9 or 3.4%). One client is retired (1 or .3%).

D. Presentation of Results

The results are presented in a manner that allows the reviewer to evaluate the findings in the light of the evidence presented. The results are corroborated with sufficient evidence that all aspects of the research question have been adequately answered. Newer insights gained are highlighted as well. The analysis reveals the following attributes or characteristics of a typical client:

A “Typical Profile” of a Client

- An African American male who is between the ages of 35-64 years old.
- Speaks English as their primary language.
- Lives, work, and receive services in Dorchester, Massachusetts.
- Lives in Dorchester Center.
- Self-identifies as straight (heterosexual).
- Has spent time in jail/prison.
- Does not have a high school diploma.
- Has full-time or part-time employment.
- Worries about paying rent/mortgage.
- Has transportation to get to meetings and medical appointments.
- Feels safe at home, school, and community.
- Is the person that they want to be for their children.
- Is trying to re-engage in their children’s lives and feel confident that it will happen.
- Makes attempts to contact their children.
- Tells their children that they love them.
- Has a poor-to-fair relationship with their children’s mother.
- Sometimes feels sad or anxious about everyday living but encourages themselves by believing that everything is all right during difficult times.
- Knows where to look for job opportunities and knows how to apply for a job.
- Feels confident about achieving desired goals.

Descriptive Statistics: A Holistic Model for Social Justice

Case #2: The PRASAD Project – An International Humanitarian Expression

PRASAD (Philanthropic Relief, Altruistic Service and Development) is a philanthropic expression of the mission of the Siddha Yoga Dham Foundation in South Fallsburg, New York. The PRASAD Project was initiated in 1992 by Gurumayi Chidvilasananda, spiritual head of the Siddha Yoga path.^[5]

The PRASAD Project is an independent, non-profit organization committed to improving the quality of life of economically disadvantaged people around the world. It is a non-governmental organization (NGO) in special consultative status with the Economic and Social Council of the United Nations. PRASAD is deeply committed to maintaining strong financial health,

accountability, and transparency about its programs and operations. As a result, PRASAD has received top ratings and recognition from charity rating organizations and other publications.^[6]

The mission of PRASAD: PRASAD works in partnership with people to benefit children and communities in need, regardless of race or belief. PRASAD implements innovative solutions that respond to local conditions and cultures.

Vision of PRASAD: PRASAD envisions healthy communities, prospering in harmony with the natural environment, where people are inspired to improve the quality of their own and others' lives.

Values of PRASAD: PRASAD's values manifest the Siddha Yoga philosophy in the arena of philanthropic work.

- recognizes the inherent dignity and worth of each person.
- respects and loves others.
- affirms the spirit of generosity that creates abundance.
- believes that human beings have within themselves great virtues, wisdom, and capabilities.

Holistic Model: PRASAD'S Holistic model is for healthy communities to thrive in harmony with the natural environment. The emphasis is on three components: *sustainable community development, general and specialized healthcare, and the environment*. PRASAD programs contribute to achieving these United Nations' sustainable development goals:

- No poverty
- Zero hunger
- Good health and well-being
- Quality education
- Clean water and sanitation
- Decent work and economic growth
- Reduced inequalities
- Climate action
- Life on land

Since its inception, PRASAD has been partnering with people to deliver holistic, sustainable programs in India, Mexico, and the United States. Over the last 30+ years, these partnerships have produced a life-transforming impact of services:

- Restoring a smile that sparks a change in a child's health and self-esteem;
- Providing cataract surgery that improves a person's vision and independence; and
- Empowering women, which gives them a sense of self-worth, inspiring them to take control of their own lives, both within and outside the home.

Pediatric Dental Health: More than two decades ago, through consultations with county health and school officials, PRASAD launched its Children's Dental Health Program (PRASAD CDHP). In Sullivan County, New York, where lack of transportation prevents many families from accessing dental care, its mobile clinic makes services accessible to students right at their schools. PRASAD CDHP has received many awards from the New York State Assembly, New York State Senate, corporations, and foundations in recognition of their leadership and excellence in maintaining children's oral health.

Program Outcomes: Within applied statistics and research, outcome variables can be categorical (non-parametric statistics), ordinal (non-parametric statistics), or continuous (parametric statistics). Outcome variables increase the precision and accuracy of measurement (internal validity) and make study results more readily generalizable.

In this particular case study on the PRASAD Project, we are linking social justice to program evaluation to enhance the fair and just distribution of benefits and responsibilities. Social justice, a central tenet of community psychology, emphasizes equal access to resources, dissolution of power hierarchies, and the empowerment and promotion of wellness among marginalized populations (Torres-Harding, Siers, & Olson, 2012)^[7]. By applying an equity lens, students in statistics are inspired to challenge the status quo, care about the interests of the disadvantaged, and uncover weaknesses within the system that contribute to inequities within society.

To track outcomes, most government and nonprofit programs rely on performance measurement strategies rather than more expensive and complicated quasi-experimental and experimental designs. Essentially, performance measurement strategies seek to answer the question: *Did the program accomplish what it set out to accomplish?* Performance measurement relies on the utilization of records, staff observations, and participant self-reports. The following are statistics on the outcomes of the PRASAD Project for serving those in need for 31 years:

United States

Dental Health Education: 93,000 children

Dental visits: 31,800

Dental procedures: 98,100

Future Goal:

In the United States, PRASAD's Children's Dental Health Program will continue to offer high-quality dental health education and dental services to 4,000 low-income children in New York State annually.

India

Mobile Hospital: 1,069,098 visits

Nutrition Program: 1,414,250 servings

Eye Care: 261,057 screenings and surgeries

Medical Center: 1,005,124 visits

Tuberculosis: 95% cure rate

Kitchen Gardens: 11,030

Number of Self-Help Group (SHG) Members: 2,986 women participating

Arts & Crafts: 154,558 students

Tree Planting & Floriculture: 174,476 samplings

Future Goal:

In India, PRASAD Chikitsa's goals for the next year are to continue delivering medical services, providing nutritional support to 500 children at village care centers, helping 350 families start kitchen gardens, planting 50,000 trees, distributing 10,000 jasmine saplings to farmers for market crops, and helping 200 families build toilets, among other services.

Mexico

Free Eye Surgeries: 34,000

Eye camps: 213

Future Goal:

PRASAD de México's team will organize three annual free eye surgery camps to benefit low-income people in rural areas of Mexico.

Descriptive Statistics: A Health Disparities Model for Social Justice

Case #3: Community Health Centers in Massachusetts

According to the Massachusetts League of Community Health Centers, community health centers provide primary, preventive, and dental care, as well as mental health, substance use disorder, and other community-based services to anyone in need, regardless of their insurance status or ability to pay. In Massachusetts, 52 community health center organizations provide high-quality health care to some one million state residents through more than 300 sites statewide. In addition to providing comprehensive health services to underserved people, health centers are at the leading edge of addressing some of the most vexing problems of our healthcare system, including facilitating access to health insurance coverage for low-income residents and eliminating health disparities between racial and ethnic populations.^[8]

The League also reports that, in 1965, the nation's first community health center opened its doors in Boston. Until that time, health services for low- and moderate-income people in inner city areas and isolated rural communities were nowhere to be found. In response, community members organized around the need to bring primary care to their neighborhoods. Insisting that they have a voice in how and what care should be delivered to the community, boards of directors that included a majority of health center

consumers were incorporated into the model. Today, health center patients continue to drive the mission and work of community health centers.^[9]

The following is an example of a Community Health Center in Massachusetts:

Codman Square Health Center (Dorchester, MA)

Mission

To serve as a resource for improving the physical, mental, and social well-being of the community.

Vision

Codman Square Health Center is our community's first choice for comprehensive, holistic, and integrated services, and empowers individuals to lead healthy lives and build thriving communities.

Values

Patient: Our patient is the center of the care team.

Community: The well-being of the individual is deeply connected to the health of the community.

Staff: We are a diverse, empowered, and prepared workforce.

Advocacy: We advocate for responsive policies and resources to address health disparities and promote health equity.

Innovation: We promote a culture of innovation that has a measurable and sustainable impact. *Partnerships:* We build and sustain diverse partnerships.

Total Number of Patients: 23,695 (in 2022)

Gender: Female (13,874 or 58.6%); Male (9,821 or 41.4%).

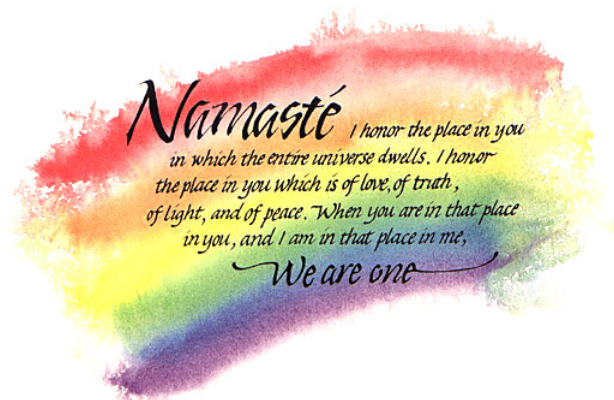
Race/Ethnicity: Black/African American (17,659 or 81.5%); Hispanic/Latino (2,388 or 11%); White (1,086 or 5%); Other (532 or 2.5%); Unknown (2,030 or 8.6%).

Income Status: Live at or below 100% of the poverty line (11,788 or 96%).

Service Area: Live in Dorchester, Hyde Park, Brockton, Roxbury, Mattapan, and Randolph (18,434 or 77.8%)

Types of Visits: Medical Care (81,685 or 74.1%); Behavioral Health/Mental Health (11,073 or 10%); Dental Care (7,679 or 7%); Eye/Vision (2,798 or 2.5%); Substance Use (2,633 or 2.4%); Enabling Services/Case Management (2,300 or 2.1%); Other Services-Nutrition/Podiatry/Dermatology (2,020 or 1.8%).

Selected Diagnoses: 2022 data shows patients live with Hypertension (4,818), Overweight/Obesity (3,652), Type II Diabetes (2,837), Depression (2,175), and Anxiety (1,861).



This concludes our journey to becoming equity-minded through the lens of statistics. I hope that during your journey, you enjoyed periodic pauses and had mindful quietude as you reflected on what you learned. There is so much to learn about statistics itself and how it blends so well into understanding social justice and equity issues.

In closing, I want to thank you for your steadfastness and courage to travel this journey with me. I am always available for questions and comments. You can email me at [yanthony @ framingham.edu](mailto:yanthony@framingham.edu). I would love to hear from you!



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