Identifying Probability and Nonprobability Sampling Methods in Studies

EXERCISE 2

Directions: Answer the following questions with a clear, appropriate response. For each question that includes an excerpt about sampling from a research article, provide the following information: (1) decide whether the sampling method presented is either a *probability* or *nonprobability sampling method*; (2) identify the *specific sampling method* used—that is, convenience, quota, purposive, network, or theoretical sampling for nonprobability samples or simple random, stratified random, cluster, or systematic sampling for probability samples (see Table 2-1); and (3) provide a *rationale for the sampling method* you selected. Some of the examples might include *more than one sampling method* to obtain the study sample.

Answers for Questions to be Graded
Questions are in bold followed by answers.

1. **Study excerpt: "Participants in this study were all women who had had, or might have, sex with men; that is, women not in exclusively same-sex partnerships. All participants were 18 to 35 years old, English-speaking, and attended a large, public, Midwestern university. More than 2,000 women completed Phase I of the study, a survey; of these approximately 900 volunteered to participate in the Phase II interviews. Women were selected from this pool to be interviewed using a purposive maximum variation sampling strategy . . . Based on survey data, women were sampled based on variation in their knowledge and use of emergency contraception and on some aspects of sexual history . . . Theoretical sampling was used to select potential participants based on the data as they were collected, including women who had experienced a pregnancy termination or 'false alarm' pregnancy . . . This process yielded a sample of 35 women who represented a wide range of experiences. When saturation was reached, recruitment and data collection ended." The data for this study were obtained from a larger mixed methods study that included quantitative survey data and qualitative narrative interview data focused on collegiate women's sexual knowledge and behavior. Source: Loew, N., Mackin, M. L., & Ayres, L. (2018). Collegiate women's definitions of responsible sexual behavior. *Western Journal of Nursing Research, 40*(8), 1148–1162. Excerpt from page 1151.**
   Answer: Nonprobability convenience, purposive, and theoretical sampling methods. Loew et al. (2018) conducted a mixed method study with collegiate women to define responsible sexual behavior. Phase I was the quantitative part of the study; collegiate women consented to participate in a survey, which indicates convenience sampling was used. In Phase II (the qualitative part of the study), women were purposely selected based on their variation of sexual knowledge and history. Theoretical sampling was used to ensure saturation of the qualitative data for defining responsible sexual behavior (Creswell & Clark, 2018; Gray, Grove, & Sutherland, 2017).

2. **Study excerpt: "This study was a part of a multi-site prospective observational study of COPD [chronic obstructive pulmonary disease] patients to explore the relationship between depression, inflammation, and functional status . . . Participants were recruited from various sources including outpatient clinics from three medical centers, pulmonary rehabilitation programs, a research database maintained by the investigators, queries of medical records and pulmonary function tests, Better Breathers Club, community pulmonary practices, advertisements, study website, and other referrals." A total of 282 patients with COPD were included in the study.**
   Source: Lee, J., Nguyen, H. Q., Jarrett, M. E., Mitchell, P. H., Pike, K. C., & Fan, V. S. (2018). Effect of symptoms on physical performance in COPD. *Heart & Lung, 47*(2), 149–156. Excerpt from page 150.
   Answer: Nonprobability sample of convenience. Lee et al. (2018) recruited potential study participants from a variety of settings to obtain an adequate number of patients with COPD for this study. The potential participants were accessible, available, and willing to participate in the study, which is descriptive of a sample of convenience (Grove & Gray, 2019; Heavey, 2019; Kazdin, 2017).

3. **Study excerpt: The focus of this quasi-experimental study was to determine the effect of a three-stage nursing intervention to increase women's participation in Pap smear screening. Using "random sampling methodology, each apartment in the target area was identified by a number. Numbers were then drawn from a random numbers table. Women were contacted by home visits. . . . By the end of this stage, 237 participants had completed the pre-test."**
   Source: Guvenc, G., Akyuz, A., & Yenen, M. C. (2013). Effectiveness of nursing interventions to increase Pap smear test screening. *Research in Nursing & Health, 36*(2), 146–157. Excerpt from page 148.
   Answer: Probability, simple random sampling method. The excerpt states that random sampling was used in the study. The sampling frame was the apartments in a targeted area, and simple random sampling with a random numbers table was used to select the apartments with their occupants for this study. A total of 237 women from the randomly selected apartments were included in the study.

4. **Was the sample identified in the Guvenc et al. (2013) study in Question 3 representative of the population of women requiring a Pap smear test in a target area? Provide a rationale for your answer.**
   Answer: Yes, the sample is probably representative of the study population in the selected target area. The simple random sampling process increases the representativeness of the sample and decreases the potential for sampling error or bias. The sample size of 237 women was adequate for this study (Gray et al., 2017).

5. **"Participants were recruited from January 2003 through November 2007 during their initial evaluation at the Pediatric Pain Management Clinic at Children's Hospital Los Angeles . . . Ninety-six child-caregiver dyads were approached for study participant in order to obtain 65 sets of completed measures, resulting in a 68% participant rate. Nineteen sets were not returned, 7 sets did not have a complete child battery, 1 set did not have a complete caregiver battery, 2 child-caregiver dyads withdrew, and 2 families declined to participate . . . Children were considered eligible for the study if they were English speaking, between the ages of 8 and 18, had a diagnosis of chronic pain, and had a caregiver present."**
   Source: Yetwin, A. K., Mahrer, N. E., John, C., & Gold, J. I. (2018). Does pain intensity matter? The relation between coping and quality of life in pediatric patients with chronic pain. *Journal of Pediatric Nursing, 40*(3), 7–13. Excerpt from page 8.

Answer: Nonprobability, convenience sampling method. Participants were children initially attending a chronic pain management clinic. The child–caregiver dyads were approached and asked to participate until a sample of 65 dyads was obtained. This is consistent with convenience sampling, because the participants were available and willing to participate (Grove & Gray, 2019).

6. **Study excerpt: "Participants were 559 substance users recruited from multiple sources (parks, streets, prisons, methadone maintenance therapy, and drop in centers) . . . a nonprobability sampling technique that is appropriate to use in research when the members of a population are difficult to locate. In this research, we collected data from substance abusers . . . and then asked those individuals to locate other substance abusers whom they knew."**
Source: Barati, M., Ahmadpanah, M., & Soltanian, A. R. (2014). Prevalence and factors associated with methamphetamine use among adult substance abusers. *Journal of Research in Health Sciences, 14*(3), 221–226. Excerpt from page 222.
Answer: Nonprobability network or snowball sampling method was identified by the Barati et al. (2014) in their study. However, the initial sampling process is probably one of convenience in which available participants are recruited from multiple settings, and then network or snowball sampling is used when participants are asked to identify additional substance abusers. Student answers might include both convenience and network or snowball sampling methods or just snowball sampling as indicated in the original article.

7. **Study excerpt: Mansfield et al. (2018) conducted a correlational study to examine the association between parental knowledge of human papillomavirus (HPV) and their intentions to have their daughters vaccinated. "This study used HINTS [Health Information National Trends Survey] 2006-2007 because it was the only data set that assessed the outcome variable, intention to vaccinate for HPV . . . HINTS's probability-based sample design used a random-digit dialing to conduct telephone surveys and a nationwide address list to administer surveys via mail. A subsampling screening tool, Westat's Telephone Research Center (TRC), was used to identify working residential numbers. A total of 3,767 telephone interviews were then completed, and 325 were partially completed (n = 4,092); 3,473 mail surveys were completed and 109 were partially completed (n = 3,582). The final total sample was 7,674 participants."**
Source: Mansfield, L. N., Onsomu, E. O., Merwin, E., Hall, N. M., & Harper-Harrison, A. (2018). Association between parental HPV knowledge and intentions to have their daughters vaccinated. *Western Journal of Nursing Research, 40*(4), 481–501. Excerpt from page 481.
Answer: Probability, simple random sampling method. Mansfield et al. (2018) clearly identified they used a probability, random sampling method in their study (Grove & Gray, 2019). Potential participants were identified from the HINTS's database, and random-digit dialing was used to conduct the telephone surveys. A national address list was used for mailing surveys to participants, but it is unclear how the participants were selected from the address list or if all on the list were mailed surveys.

8. **Was the sample identified in the Mansfield et al. (2018) study in Question 7 representative of parents' intentions to have their daughters vaccinated? Provide a rationale for your answer.**
Answer: The sample is representative of the target population of parents' intentions to have their daughters vaccinated. Simple random sampling provides strong representation of the target population that increases with sample size (see Table 2-1; Grove & Gray, 2019). The participants were randomly selected from a national database (HINTS) to conduct telephone surveys, and a national address list was used for mailing surveys, which documents the random sampling method. The total sample was extremely strong with 7674 participants. Recruiting participants

from the HINTS database is appropriate because it was the only data set that included the outcome variable of intention to vaccinate for HPV. This large simple random sample is representative of the target population with limited potential for sampling error or bias (Gray et al., 2017).

9. **Study excerpt: Initially, participants were selected in a purposeful manner "based on their familiarity with, interest in, and willingness to reflect and discuss their hope experience." Additional sampling was done to achieve "theoretical saturation that was defined as theoretical completeness in which no new properties of the categories were identified."**
Source: Bally, J. M., Duggleby, W., Holtslander, L., Mpofu, C., Spurr, S., Thomas, R., & Wright, K. (2014). Keeping hope possible: A grounded theory study of the hope experience of parental caregivers who have children in treatment for cancer. *Cancer Nursing, 37*(5), 363–372. Excerpt from page 364.
Answer: Nonprobability, purposive and theoretical sampling methods. The initial sampling process is purposive, and Bally et al. (2014) clearly indicate the type of person they want to participate to provide the information-rich data needed in their study. Theoretical sampling is done to provide theoretical saturation and to ensure the credibility and quality of the theory developed in this grounded theory study (Creswell & Porth, 2018; Gray et al., 2017).

10. **Study excerpt: Macartney and colleagues (2018) studied the concussion symptoms in 136 adolescents, 74 female and 62 male. "A retrospective chart review was completed between 11/21/2014 to 11/20/2015. A purposive sample of all patients who visited the CHEO [Children's Hospital of Eastern Ontario] concussion clinic during the study period [was] included. Patients were excluded if symptoms records were not documented . . . CHEO's concussion clinic opened in the fall of 2014. The clinic provides care to patients less than nineteen years old who remain symptomatic at least four weeks post injury."**
Source: Macartney, G., Simoncic, V., Goulet, K., & Aglipay, M. (2018). Concussion symptoms prevalence, severity and trajectory: Implications for nursing practice. *Journal of Pediatric Nursing, 40*(1), 58–62. Excerpt from page 59.
Answer: Nonprobability, purposive sampling method. Macartney et al. (2018) stated that a purposive sampling method was used to select study participants who visited the CHEO concussion clinic during the study time period. Students might have identified the original sample of adolescents who visited the CHEO concussion clinic as comprising a sample of convenience because the adolescents were accessible and willing to participate in the study.