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Challenges and strategies of dyad research: cardiovascular examples

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Abstract

This article highlights challenges in recruitment, retention, attrition, data collection, and analysis when studying dyads in cardiovascular research. Including family members in studies is particularly important because family members often have a major role in treatment of patients with cardiovascular illness. The partnership of a patient–family member is referred to as a dyad and may include the cardiovascular patient and another relative, such as an adult child, sibling, spouse, son-in-law or daughter-in-law, or unmarried partner. Insights gained from previous research may facilitate and improve rigor when reviewing and conducting studies involving dyads with cardiovascular and other chronic diseases. Including patients and partners in descriptive and intervention studies will allow researchers to more fully explore family factors that may be salient in health outcomes.

1. Introduction

Researchers have recently emphasized the importance of including both patient and family members in studies while focusing on family-centered care to improve outcomes in cardiovascular patients (Dracup, 2002; Dunbar et al., 2005; Dunbar, Clark, Quinn, & Kaslow, 2008; Evangelista et al., 2002; Visser-Meily et al., 2006). Family constellations vary significantly, and studying an entire family system can add complexity to a study. Thus, in behavioral research, investigators may opt to invite only one family member to participate. The partnership of a patient–family member or couple is referred to as a dyad and may include the patient and another relative, such as a spouse, adult child, sibling, or unmarried partner, depending on the purpose of the study. Including family members in studies of persons with cardiovascular conditions is particularly important because family members often have a major role in their treatment. For example, often, the family member is the one consulted when symptoms ensue or is the one who shops and cooks for the person who is trying to adhere to a low-sodium diet (Dunbar et al., 2005). If the family member does not have knowledge of, or understand how to be supportive of this lifestyle change, then adhering to dietary recommendations and other self-management activities may be difficult for the patient. Similarly, in stroke recovery where the patient may have an intensive home rehabilitation program, the support and assistance of the family are extremely important for achieving successful outcomes (Clark et al., 2004).

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Dyadic research is not the same as conducting research with an entire family or simply including family caregivers. The dyad may be initially defined by the patient's characteristics; however, depending on the purpose of the study, patients may choose their participating partner. For example, the patient may recommend a daughter, sibling, spouse, or friend as the person in whom they confide regarding health information. Studies with dyads in caregiver–care recipient relationships in cardiovascular research usually focus on selecting the person most knowledgeable or engaged in the patient's daily care.

Although dyadic research is a significant approach to achieve a family perspective, it is accompanied by a unique set of methodological challenges. This article highlights some of the challenges regarding recruitment, data collection, and analysis drawn from cardiovascular studies using dyads as well as discusses strategies that facilitate dyadic research. Some lessons we have learned from cardiovascular family dyad studies in process and completed will be included (Clark, Dunbar, & Wolf, 2000; Dunbar & Clark, 2004; Dunbar et al., 2005; Quinn, 2007). Many of the issues may also apply to conducting dyadic research with other chronic illnesses. The focus of this review is on adult research participants in dyads and does not address the special issues of parent–child dyadic relationships.

2. Research issues and strategies

2.1. Recruitment and sampling

Dyads can be accessed for research in many settings: hospital inpatient, outpatient clinic, home, and community or public health settings. Each setting requires carefully developed recruitment strategies. Steinhäuser et al. (2006) identified issues and described lessons learned in recruiting patients with heart failure (HF) and their family caregiver in a palliative care setting. An important lesson learned was about the use of the word *caregiver*. Patients may not think of family members or persons helping them as caregivers. Steinhäuser et al. suggested asking the patient to identify the person spending the most time with them because some patients were reluctant to acknowledge the need for a caregiver. Researchers and their assistants need to be aware to avoid the use of the term *caregiver* when talking with potential participants.

Equally important are efforts to prevent loss of the dyad due to the patient or family member not fully understanding the purpose of the study and expected involvement. Relying on the patient to clearly explain the study and participation needed to the family member may not be effective. Thus, researchers need to develop materials and make telephone calls to the family member to explain the study. Providing an easy-to-read (using lay terminology) description of the study for the patient to share with family members about why involvement of both persons is needed may be helpful as well. In other cases, delaying recruitment of the other part of the dyad until a more optimal time suggested by the patient leaves the door open for future participation. For example, the patient may be willing to participate, but the month or day may not be right for the dyad (e.g., holidays). Calling the dyad on their timeline may bode well for future recruitment and retention.

Recruitment through mailing may yield varying response rates. A 57% response rate was reported when recruiting HF dyads through the mail (Kurylo, Elliott, DeVivo, & Dreer, 2004). Combining the first mailing with a follow-up telephone call is a strategy that can give the researcher an opportunity to answer questions and discuss research participation. In a caregiver study that was linked to a national clinical trial for stroke survivors, the caregiving study successfully enrolled 86% of the eligible caregivers with a combination of face-to-face interaction or a follow-up telephone call to the family member after sending information

home with the patient (Clark, Dunbar, Aycock, Blanton, & Wolf, in press; Clark, Dunbar, Aycock, Courtney, & Wolf, 2006).

The research protocol must define and describe specifically how the patient and the partner of the patient are selected. For example, in our cardiovascular studies that include family caregivers, patients were asked to identify which family member they discuss their health concerns with most of the time or to whom they turned for assistance with symptom management (Clark et al., 2000; Dunbar et al., 2005; Quinn, 2007). Asking patients to identify the person most involved in their care allows identification of the most appropriate person for the study. Although the decision of who is appropriate to include in the dyad is often driven by the theoretical model and focus of the study, researchers need to make decisions in advance about which participant is the most appropriate to be involved in the study. For example, in our cardiovascular research, we include a wide range of relationships (e.g., adult children, siblings) as caregivers if they self-identify as the person most involved in meal preparation and medication monitoring whether they reside with the individual or not (Dunbar & Clark, 2004; Quinn, 2007). In some instances, a neighbor or friend may know more about the day-to-day care and issues of the patient than do any family members, especially if the family lives in a different geographic area. These neighbors or friends may be viewed by the patient as “family.” If neighbors or friends are included, researchers may want to examine this subgroup’s data separately to determine if there are differences from other family members.

Just as eligibility criteria are set for the patients, specific criteria need to be established in the protocol for the family member. For example, exclusion criteria may limit participation of family members (and patients) with significant health problems, history of dementia, or psychiatric illness that would interfere with completion of the protocol. The clinical staff may be helpful in determining if patients have a family member involved in their care when it is not clearly documented and in providing insight into observed family issues that may influence their ability to participate. If patients are alone in the clinic or when contacted by telephone about the study, even if they are interested in participating, they may not be willing to agree to participate until they have the opportunity to discuss the study with their family member and obtain their agreement. Schulz, Wasserman, and Ostwald (2006) found that older patients often seek the opinion of other family members, including adult children, before both spouse and patient decide to enroll in a longitudinal study. However, patients may be reluctant to ask family members to participate if they feel that their family members are under stress or already doing too much for them. After getting permission from the patient, the researcher may want to call and speak to the family member directly to explain the study, why his or her involvement is needed, the time commitment, and any incentives for the family so that he or she can make an informed decision.

Declining to participate in a study is another issue related to recruitment. The most common reasons for refusal in a study of post-implantable cardioverter defibrillator (ICD) families (35%) included the following: couple lived too far away, the partner did not want to participate, and the distance to the interview site was too far. Aldred, Gott, and Gariballa (2005) reported additional reasons for nonparticipation in HF research: feeling too ill and not wanting to put another burden on the caregiver. In an ongoing study of patients with HF receiving home health care, 34% of dyads approached by telephone have declined due to their busy schedule that already includes visits by various health care professionals on a daily basis (Quinn, 2007). Thus, in planning for recruitment of participants, the researcher needs to build in time and resources to accommodate potential refusals of patients and family members.

Another potential situation to consider is what to do when the patient and family member have the same diagnosis (e.g., HF) and both meet eligibility criteria for the study. Guidelines developed in advance can address this situation to determine which person is included as the patient and which is the family member in the study. One approach we used was to select the person most recently diagnosed (Dunbar & Clark, 2004). Another strategy is to randomly select one person from the dyad as the patient.

The development and use of a script when calling a dyad are important for consistency. The nurse recruiter must be prepared to talk to either the patient or the family member as either one could answer the telephone, and they may have different concerns. In our studies, the institutional review board (IRB) allows the research staff to speak to either person first because both will be enrolled in the study, and this is not viewed as a violation of Health Insurance Portability and Accountability Act (HIPAA) of 1996. This method of recruitment should be written into the protocol when requesting IRB approval. If the dyad is interested in participating, a specific time and date for meeting them need to be established during this initial contact. Scheduling flexibility by the research team is required because arranging to meet two persons during one visit may be difficult.

When planning the sample size with dyads, one needs to consider the statistical power needed to answer the research questions and consider the potential attrition of both members of the dyad. Sample size estimations need to be calculated based on patient and caregiver attrition rates described in the literature or obtained in preliminary studies to ensure that one can address study aims.

2.2. Consent process

Individual separate written consent forms are usually required for patients and partners before study-related activities (Bowen et al., 2007). Depending on the purpose of the study, an HIPAA compliance or waiver form is an additional requirement for the patient and possibly the family member. For example, if the researcher is obtaining any health information about the family member, such as a history of heart disease, then a separate family HIPAA waiver form may be required. Researchers should communicate with their local IRB to confirm the required recruitment, consent, and HIPAA process for dyads.

The researcher needs to carefully observe interaction within the dyad for evidence of potential conflict related to interest in the study or perceived ability to complete the protocol. Any conflict needs to be addressed to determine both commitment to the intervention and ability for the dyad to work together. When refusal to participate occurs, this should be documented in a study retention record to learn more about how to improve recruitment effectiveness and whether interventions are viewed as acceptable. In addition, throughout the study, unintended observations of behaviors in a caregiving relationship related to abuse or neglect should be noted and reported according to guidelines. This is highly sensitive and is covered if the informed consent includes a statement to the effect that “if we learn important information about you related to your health, we will communicate this to you and to your provider.”

Consent forms also need to include language that indicates that the data will be used together. Family members are not receiving care, so the language in the consent needs to indicate that, if the family member declines, the patient will still receive all entitled care (Dunbar & Clark, 2004; Quinn, 2007). These efforts are important to reduce family members' perceptions of coercion to participate.

2.3. Retention

Personal contact and establishment of a good rapport between the researcher and participant have been identified as crucial strategies for recruitment and retention into any study (Steinhauser et al., 2006). For dyadic research, effective communication skills are particularly important. During the first interaction, allowing each participant an opportunity to share concerns about the study or about his or her own life situation facilitates trust. Many times, patients need to discuss their disease process or the family member wants to express caregiving concerns as experienced in a current study of HF dyads being interviewed in their own home (Quinn, 2007). If attending to this aspect of the relationship is hurried or rushed, one of the persons within the dyad may feel uncomfortable with participating in the study and refuse to continue. The importance of attending to both the patient and family member after enrolling them into the study cannot be overemphasized as one of the most important steps in retention.

2.4. Attrition

Attrition patterns for dyadic research studies require careful tracking. Attrition may be due to loss to follow-up, death, hospitalization, or relocation. At times, one member of the dyad may want to drop out of the study. Decisions need to be made in advance about whether to have the patient or family member continue in the study if the other dyad member drops out. The decision should be based on the potential contributions of the retained dyad member to knowledge development, study results, and available study resources. Following an incomplete dyad can add costs to a study, unless the data collected are useful. If a patient drops out, and continuing to follow the nonpatient member of a dyad will not contribute to the study aims, the research staff can thank the family member for his or her contribution thus far and provide any incentive due the person. Depending on the questionnaires used in the study, the researcher can also explain that it might be difficult to respond to the study questions because the situation with the original dyad has changed.

When the study design is specific to a caregiver–patient dyad, keeping the study burden reasonable is important because caregivers of sick patients often have assumed additional family roles and may be stressed. The negative effects of caregiving on caregivers' health are well documented (Schulz & Beach, 1999). To reduce the participant burden, careful consideration needs to be given to the numbers of questionnaires and to be limited to the essential ones needed to address the research questions and intervention activities they are asked to complete.

2.5. Data collection and intervention delivery

An aspect of the data collection protocol that is unique when examining dyads concerns whether the patient and partner are to complete the instruments separately or collaboratively. This will influence the proximity of participants to each other when completing the instruments. Whether or not the data collection takes place together or separately should be driven by the underlying purpose, framework, and study design. However, the researcher needs to consider how this might affect the quality and accuracy of the data and incorporate that into the final decision.

Steinke, Gill-Hopple, Valdez, and Wooster (2005) offered couples a choice to be interviewed separately or together when discussing sexual concerns post-ICD placement. Allowing couples a choice of the data collection strategy has the advantage of allowing participants to do what is most comfortable for them. However, this could introduce bias in responses as one member may exert influence on the other member's responses. In the home setting, the use of separate rooms may be necessary to obtain truthful, honest responses from each individual when separate responses are desired or when information being collected

may be sensitive (Quinn, 2007). If the dyad will be together during data collection, the protocol needs to include specific instructions for research staff to give to dyads about responding. These instructions might include the importance of gaining each member's different perspective and asking them not to confer when answering the questionnaire.

If the decision is to separate participants, before separating them, each person should be assured of confidentiality regarding his or her responses. Depending on the purpose of the study, researchers should reinforce that the information gained will not be shared by study staff with either individual in the dyad without his or her permission. In an effort to keep patient and partner information confidential, the research protocol may require separate data collectors. If only one data collector is available, the dyad should be given the choice of having the researcher work with one participant at a time. This allows each participant the opportunity to address concerns or questions in relation to the instruments. Thus, if there is only one data collector, the additional burden of time on the participants and researcher for data collection must be accounted for in the planning of the study. Meagher-Stewart and Hart (2002) reported a mean time of 90 minutes when using one data collector per dyad while interviewing the patient and caregiver separately and privately in the home setting.

Decisions about whether to separate the patient and the family member for the delivery of an intervention need to be considered as well. For example, in an HF family partnership intervention (Dunbar et al., 2005), the patients and family members were together for the education information at the beginning and end of the family partnership intervention; however, they were separated during the delivery of part of the content. The purpose of separating the dyad was to allow each person to speak candidly regarding his or her perspective on "living with heart failure" and to practice role-play scenarios. However, separating dyads may cause some concern for either partner in the dyad; thus, the research staff or interventionist needs to be trained adequately to address concerns and provide explanations to participants. When making decisions regarding dyadic study designs which include interventions, the researcher needs to consider the potential effect on not only the patient but also the family member. This is particularly true if the study includes an intervention that requires the family member to assume additional or unfamiliar responsibilities. In developing interventions that involve family members, researchers need to include measures of mood, burden, or distress to ensure that interventions to improve patient outcomes do not also have unintended negative effects on the caregiver. In a pilot study that incorporated patients with HF and caregivers (Dunbar et al., 2005), measures of caregiver depression were included specifically to evaluate whether the intervention had an adverse effect on caregivers.

2.6. Budgeting issues

In conducting dyadic research, there are several budget considerations. Travel expenses need to be addressed when a study design requires the dyad to travel to a study site such as for laboratory work or a group intervention. When dyads travel separately, the travel needs of both participants need to be accommodated, thus increasing the study budget. Timing of an intervention is also important. For example, assessing traffic patterns could be important in a large city and could affect when an intervention session is offered, particularly if one member of the dyad is working, and/or travel arrangements need to be coordinated. If an adult child family member has young children, child care or reimbursements for child care may need to be offered so that the dyad can attend sessions.

Incentives for continuation in a study are essential for both members of the dyad. Because there are two participants, each person should receive an incentive, and incentives chosen should appeal to both persons (Dunbar et al., 2005). Giving individual incentives is preferred as dyads are not always living together and the study burden may differ. In our

larger intervention study (Dunbar & Clark, 2004), the patient receives a slightly higher incentive than does the family member because the patient has the greater participant burden. Thus, the amount of participation for each member of the dyad needs to be considered for incentive amounts. As described earlier, separate personnel for data collection for dyads may be needed, which may increase the personnel costs for the study. Additional study personnel also increase the need for more resources such as computers, staff, travel reimbursement, and office space.

2.7. Data analysis

The type of analysis approach for dyadic data depends on the purpose of the study. Analysis depends on whether data are viewed as independent or paired and also how congruence with distinguishable and indistinguishable dyads is assessed. According to Kenny, Kashy, and Cook (2006), an important question in dyadic analysis is whether or not the members of the dyad can be distinguished from one another. Examples of an indistinguishable dyad are coworkers or best friends, and dyads with distinguishable members are husband and wife, parent and child, and patient and caregiver. In our studies, the dyad is considered distinguishable because one member has HF, stroke, or another cardiovascular illness and the other member does not have this disease process (Clark et al., 2000; Dunbar & Clark, 2004; Quinn, 2007).

A detailed discussion of analysis approaches for dyadic data is beyond the scope of this article; however, readers are referred to articles specifically addressing dyadic research (Gonzalez & Griffin, 1999; Olsen & Kenny, 2006) and to the detailed reference text on dyadic data analysis such as the one by Kenny et al. (2006). Thus, when developing the study protocol using dyads, the type of analysis will depend on the nature of the data, type of statistical analysis, and the research questions of interest.

3. Conclusion

This summary of dyadic research has described some of the challenges found in conducting several cardiovascular research studies, and these have been summarized in Table 1. These major challenges in dyadic research center around recruitment, retention, and data collection. Planning ahead for issues such as sensitivity to the word *caregiver* when asking the patient to self-identify someone to participate in a study, monitoring for caregiver burden when planning the intervention and data collection scheme, clearly defining the dyad-specific protocol, and considering different incentives for the dyad depending on the extent of participation in the study are some of the lessons learned to improve the rigor of future studies with dyads. Including patients and partners in descriptive and intervention studies will eventually lead to improved understanding of family issues in nursing care.

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References

- Aldred H, Gott M, Gariballa S. Advanced heart failure: Impact on older patients and informal carers. *Journal of Advanced Nursing* 2005;49:116–124. [PubMed: 15641944]

- Bowen DJ, Fann JR, Andersen R, Rhew IC, Gralow JR, Lewis FM, et al. Recruiting patients with breast cancer and their families to behavioral research in the post-HIPAA period. *Oncology Nursing Forum* 2007;1049–1054. [PubMed: 17878132]
- Clark PC, Dunbar SB, Aycock DM, Blanton S, Wolf SL. Pros and challenges of research collaboration with a national clinical trial. *Journal of Professional Nursing*. (in press).
- Clark PC, Dunbar SB, Aycock DM, Courtney E, Wolf SL. Caregiver perspectives of memory and behavior changes in stroke survivors. *Rehabilitation Nursing* 2006;31:26–32. [PubMed: 16422042]
- Clark PC, Dunbar SB, Shields CG, Viswanathan B, Aycock DM, Wolf SL. Influence of stroke survivor characteristics and family conflict surrounding recovery on caregivers' mental and physical health. *Nursing Research* 2004;53:406–413. [PubMed: 15586137]
- Clark, PC.; Dunbar, SB.; Wolf, SL. Family function, stroke recovery, and caregiver outcomes. 2000. NIH NINR, RO1 NR07612-01
- Dracup K. Beyond the patient: Caring for families. *Communicating Nursing Research* 2002;35:53–61. [PubMed: 12430200]
- Dunbar, SB.; Clark, PC. A family partnership intervention for heart failure. 2004. NIH NINR RO1 NR008800
- Dunbar SB, Clark PC, Deaton C, Smith AL, De AK, O'Brien MC. Family education and support interventions in heart failure: A pilot study. *Nursing Research* 2005;54:158–166. [PubMed: 15897791]
- Dunbar SB, Clark PC, Quinn C, Kaslow N. Family focused interventions to promote self care in heart failure. *Journal of Cardiovascular Nursing* 2008;23:258–265. [PubMed: 18437068]
- Evangelista LS, Dracup K, Doering L, Westlake C, Fonarow G, Hamilton M. Emotional well-being of heart failure patients and their caregivers. *Journal of Cardiac Failure* 2002;8:300–305. [PubMed: 12411980]
- Gonzalez R, Griffin D. The correlation analysis of dyad-level data in the distinguishable case. *Personal Relationships* 1999;6:449–469.
- Kenny, DA.; Kashy, DA.; Cook, WL. Dyadic data analysis. New York: Guilford Publications; 2006.
- Kurylo M, Elliott TR, DeVivo L, Dreer LE. Caregiver social problem solving abilities and family member adjustment following congestive heart failure. *Journal of Clinical Psychology in Medical Settings* 2004;11:151–157.
- Meagher-Stewart D, Hart G. Social support and the quality of life of individuals with heart failure and stroke and their family caregivers. *Canadian Journal of Cardiovascular Nursing* 2002;12(1):17–30.
- Olsen JA, Kenny DA. Structural equation modeling with interchangeable dyads. *Psychological Methods* 2006;11:127–141. [PubMed: 16784334]
- Quinn, C. Symptom management: Heart failure patients and family caregivers. 2007. NIH NINR F32 NR009888-01A1
- Schulz C, Wasserman J, Ostwald S. Recruitment and retention of stroke survivors: The CARES experience. *Physical & Occupational Therapy in Geriatrics* 2006;25(1):17–29.
- Schulz R, Beach SR. Caregiving as a risk factor for mortality: The caregiver health effects study. *JAMA* 1999;282:2215–2219. [PubMed: 10605972]
- Steinhauser KE, Clipp EC, Hays JC, Olsen M, Arnold R, Christakis NA, et al. Identifying, recruiting, and retaining seriously-ill patients and their caregivers in longitudinal research. *Palliative Medicine* 2006;20:745–754. [PubMed: 17148529]
- Steinke EE, Gill-Hopple K, Valdez D, Wooster M. Sexual concerns and educational needs after an implantable cardioverter defibrillator. *Heart & Lung* 2005;34:299–308. [PubMed: 16157184]
- Visser-Meily A, Post M, Gorter JW, Berlekom SBV, van Den Bos T, Lindeman E. Rehabilitation of stroke patients needs a family-centered approach. *Disability and Rehabilitation: An International, Multidisciplinary Journal* 2006;28:1557–1561.

Table 1**Best practices and key strategies for dyad research**

Research issue	Best practices and key strategies
Recruitment and sampling issues	<p>Estimate sample size based on potential refusals of either member of the dyad.</p> <p>Limit PT and FM participation (in exclusion criteria) if dementia, psychiatric illness, or chronic illness is present that would interfere with completion of protocol.</p> <p>Clearly define the members of the dyad.</p> <p>Describe clear inclusion and exclusion criteria for both members of the dyad.</p> <p>Ask clinic staff to help determine if the PT has an FM involved in his or her care when it is not clearly documented.</p> <p>Prepare a script for use with the PT or FM in case either answers recruitment call.</p> <p>Be highly flexible for scheduling dyad visits due to complications of scheduling two people.</p>
Consent	<p>Assess conflict in the dyad to determine their commitment to the study/intervention.</p> <p>Include language that allows the PT or FM to refuse without jeopardizing care.</p> <p>Explain the study to each member of the dyad.</p> <p>Contact local IRB regarding HIPAA guidelines for screening and recruiting patient and family participation.</p>
Retention	<p>Form a relationship and develop trust on the initial telephone call or first visit with both members of the dyad.</p> <p>Allow time for PT or FM to discuss health concerns (caregiver concerns).</p>
Attrition	<p>Plan protocol to address removal (or continuation) in the study if either the PT or FM decides to drop out.</p> <p>Examine length and number of instruments used to decrease participant burden.</p> <p>Provide incentives to both members of the dyad for their participation.</p>
Data collection	<p>Address if data will be collected separately or together in the protocol and plan accordingly.</p> <p>Assure each participant that the information is confidential and will not be shared with one another after completion.</p> <p>Allow extra time for data collection when there is one data collector or if interviewing each dyad member separately.</p> <p>Prepare guidelines for referral to counseling for both members of the dyad if study instruments measure a condition such as depression.</p> <p>Define data collection procedure including whether data will be collected separately or together.</p> <p>Address if data will be collected separately or together in the protocol and plan accordingly.</p> <p>Include measures to determine mood, burden, or distress to limit unintended negative effects on the PT or FM during an intervention or to determine if the study should be terminated.</p>
Budgeting	<p>Address and plan for travel expenses for both participants and research nurses.</p> <p>Assess traffic patterns which can affect dyadic participation and when an intervention session is offered.</p> <p>Budget incentives should be budgeted for both participants.</p> <p>Plan for increased costs due to using several personnel for data collection.</p> <p>Consider reimbursement for childcare for participants who may have young children.</p>
Analysis	<p>Assign each member of the dyad the same dyad number when setting up the database.</p> <p>Use tests of nonindependence when analyzing a concept that both individuals have in common.</p> <p>Determine the types of variables that will be used in the analysis: between dyad, within dyad, or mixed variable.</p>

Note. PT = patient; FM = family member.