

# “We-Diseases” and Dyadic Decision-Making Processes: A Critical Perspective

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## Keywords

Cancer · Decision-making · Interdependence Theory · Dyadic Model of decision-making · Dyadic analysis

## Abstract

This is a critical perspective paper discussing the theoretical bases and methodological issues regarding dyadic decision-making processes in the oncological domain. Decision-making processes are of a central interest when one partner in a couple has cancer, and patients and partners make decisions together under an interactive and dynamic process. Given that, the attention in research is progressively shifting from patient and partner considered as individuals to a more holistic view of patient-partner considered as a dyad. The consideration of the dyadic nature of the decision-making represents a challenge from a theoretical and methodological point of view. The Interdependence Theory and the Dyadic Model of decision-making provide the theoretical bases to consider, respectively, the interdependence of the dyadic decision-making and the mechanisms affecting the couple-based decision-making. Dyadic processes require also an appropriate data analysis strategy that is discussed in the study as well. Conclusions of the present critical review suggest to

develop a new line of research on dyadic decision-making in the oncological domain, testing the Dyadic Model presented in the study and considering the interdependence of the data with appropriate levels of analysis.

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## Introduction

A diagnosis of cancer has a strong emotional impact on individuals. Fear, anxiety, and worry are emotional states typically experienced by cancer patients [1]. Coherently, evidence reported that a diagnosis of cancer also affects the family system as a “we-disease” [2], provoking a profound transformation of the individual’s roles (e.g., adding a caregiver role to one of the partners). A diagnosis of cancer impacts on couples’ dynamics [3] and forces couple members to “rethink their life” and to find a new psychological homeostasis [1]. Couple members are consistently involved in the decision-making process [4–6], and research has progressively shifted the attention from patient and caregiver as individuals to patient-caregiver as a dyad [7].

The present critical perspective paper discusses the dyadic decision-making process in oncological domains, first addressing what we see as a major theoretical contribution when any dyadic process is concerned. The Interdependence Theory [8] lays the foundation for considering the dyadic processes and the circular and mutual influences between partners. We then introduce the Dyadic Model of decision-making [9] which investigates the mechanisms involved in the dyadic decision-making. Finally, we briefly consider the family of dyadic analyses, which applies specifically to the dyadic phenomenon.

### **Interdependence between Partners**

Interdependence Theory [8] states that in close relationships intimate partners influence each other. The concept of interdependence refers to the fact that two scores measured from the two members of a dyad are more similar to (or different from) one another than two scores measured from two individuals outside the dyad [10]. In other words, interdependence is the process by which individuals interacting with each other influence one another's experiences. All interpersonal interactions are the result of a given situation, actions, personality, and characteristics of the individuals involved and their relationships. The degree or level of interdependence is one of the most important principles of the Interdependence Theory focusing on the level of reliance that one partner of a relationship has on the other. Following this principle, there are three types of degree of interdependence between partners: the so-called actor-control, which is the impact of one's behavior on his/her outcome; the partner-control, which is the impact of one's behavior on the other's outcome; and the joint control, which is the mutual influence between the partners. All those concepts have been encapsulated in the analyses that will be introduced just below.

As an example of the interdependence between partners, one can, for example, recall the evidence found about the similarities in the physiological responses of partners during conflicts [11]. Therefore, dyads are characterized by reciprocal influences because partners mutually impact each other's thoughts, feelings, and decisions.

Fletcher et al. [7] identified three main sources of the dyadic interdependence: communication, congruence, and reciprocal influence. Communication refers to the co-creation, sharing, and co-regulation of meanings as an essential part of the co-support that a patient and a partner provide each other when they have to cope with the

cancer [7]. Congruence represents the agreement and concordance, or on the contrary, the discordance between partners regarding several aspects, such as symptom perception [12] or preferences for care [13]. Reciprocal influence denotes the mutual effects that each partner has on the other and how the effects influence their well-being.

The Interdependence Theory lays the foundations for the consideration of dyadic processes, and research in this field has given the impetus for developing new conceptual work and application [7]. Notwithstanding, there are still unexplored areas of interest: one of these is the dyadic decision-making.

### **Dyadic Decision-Making and Couple Dynamics in the Cancer Domain**

How an individual searches for information, identifies alternatives, and chooses among them vary according to the so-called decision-making style [14]. People who decide after systematically assessing all the possibilities through a logical evaluation substantially differ from those who instinctively make a decision or from whom makes a decision based on what relatives think. And, all those styles differ from people who tend to avoid decisions or prefer to get a decision immediately. In this field, the research on the individual decision-making style has led to a huge amount of knowledge [15].

However, research on dyadic decision-making processes is still significantly lacking. The literature has progressively started to explore, with qualitative research, partners' involvement in cancer treatment decision-making. Evidence demonstrated that patients rarely face clinical consultations alone and that partners are frequently involved in the decision-making process [16]. Similarly, during the consultation with the oncologist, partners (and caregivers in general) show a range of behaviors from no contribution at all (i.e., the patient and the oncologist make the decision) to complete dominance (i.e., the partner/caregiver makes the decision) [17]. The levels of influence of the partner in the decision-making may be influenced by demographic characteristics, quality of the couple relationship, and disease-related factors [18, 19]. Furthermore, an additional variable that should be taken into account is connected with the dyadic coping strategies used to face with the cancer experience and related emotional reaction. Indeed, a growing body of studies have highlighted the association between emotional well-being and health outcomes in patients and emotional

well-being in their caregivers. For example, studies on bladder cancer patients who underwent radical cystectomy highlighted how a reciprocal influence exists between emotional reactions (both positive and negative) of the patient and emotional reactions of his/her caregiver [20]. Similarly, studies on cancer pain revealed that cancer pain management in patients is deeply interconnected to the coping strategies and emotional reactions in their caregivers [21, 22].

This evidence is coherent with the Systemic Transactional Model (STM) [23, 24] that recognizes a mutual interdependence between romantic partners on stress management and adjustment, in which both partners are engaged in shared problem solving, behaviors, and emotion regulation. As suggested by Rapelli et al. [25, 26], dyadic coping might be an adaptive strategy to face with the difficulty and uncertainty of the disease. Consistently, the STM permits to better understand in which way cancer decision-making might be considered starting to a dyadic perspective.

Although there is evidence suggesting that patient and partner's psychological states mutually influence one another (e.g., [27, 28]), the literature studying the dyadic influence on couple's decision-making is still in its infancy. Queen et al. [9] theorized a Dyadic Model explaining the phases and mechanisms characterizing any couple-based decision-making process. Specifically, the model identifies four subsequent steps: the "decision identification" and "information search" steps, which precede the proper "decision" phase that, in turn, stands before the "post-decision processes." The decision identification phase corresponds to the moment in which 1 partner, or both, starts to think that a decision has to be made. In the information search phase, partners seek information to make the decision. In life-threatening medical conditions, such as cancer, partners usually face these stages together with the patients: they often look after the partner's well-being, identify physical or psychological symptoms, and collaborate to seek advice from the experts [29]. After these 2 initial steps, couples make a decision; the so-called decision phase ends with the post-decision evaluation consisting of reactions of regret or satisfaction to the decision made.

Furthermore, the dyadic model of the decision-making [9] speculates that differences in the dyadic decision-making process may vary according to personal resources (cognitive abilities, personality characteristics, and interpersonal resources/quality of relationship) or characteristics, such as age, gender, educational level, and disease symptoms. The extension and direction of the re-

lationships between those characteristics and the dyadic decision-making process are far less than established. For some variables, it is possible to hypothesize a direction for the associations. For example, one may expect that older patients with a low educational level may depend on the partner during decision-making. For many other variables, the association with the dyadic decision-making is more speculative even because social influences (e.g., cultural background and presence of children) impact the dyadic decision-making [9]. These features are supposed to play a different role according to the proposed phases of the decision-making process [9].

Despite the interest regarding the contribution of the patient and the partner in the decision-making, Queen et al.' model [9] has not yet been investigated, especially in chronic life-threatening illness, such as cancer. It would be interesting to understand whether the decision phases hold empirically (rather than only theoretically) and how they interact with personality factors, individual's predispositions, and quality of the couple relationship. It would be likewise interesting to understand how an individual's style intersects (or crosses) with the style of the partner within a couple. Noteworthy, a previous study showed the degree of congruence between partners' dyadic coping behaviors was associated with their relational well-being [28]. According to this, it would be interesting to understand whether the individual decision-making style, when a decision is made within the couple, evolves and changes. Does the individual decision-making style tend to become similar to the one of the partner (e.g., [30])? Under what circumstances? Do the two styles evolve into a third style different from the previous ones? All these questions are still unanswered.

### Data Analysis Strategy

As discussed just above, dyadic decision-making requires a theoretical background to generate hypotheses and test relationships between variables. Similarly, dyadic processes require also the appropriate data analysis strategy (see [31–33]). Several statistical techniques to model dyadic processes have been developed. The Actor-Partner Interdependence Model (e.g., APIM [10]) and the Actor-Partner Interdependence Model extended Mediation (e.g., APIMeM [31]) are the most applied to partners. Both models estimate the degree of the interdependence between partners.

The APIM distinguishes between actor effects, which are the variation in some outcome variable Y measured on

partner A determined by partner A's characteristics, and partner effects, which are the variation in some outcome variable Y measured on partner A partner B's characteristics. Actor effects explain how a person's independent variable is associated with his/her score on the dependent variable; instead, partner effects explain how the independent variable of a person is associated with the score of the partner's dependent variable, allowing the exploration of the dependency across partners of a dyad. The APIMeM allows to estimate actor and partner effects considering one or more mediators. In line with the dyadic model of analysis, the mediators (M) could operate through the person's own M, the partner's M, or both simultaneously.

## Conclusion

The Interdependence Theory provides the theoretical basis for considering the interdependence of the partners, which is a crucial characteristic of any dyadic process, including dyadic decision-making. The Dyadic Model of decision-making proposes a 4-stage process and generates hypotheses that have to be tested. Therefore, following the considerations proposed in the present critical review, a new line of research on dyadic decision-making in the oncological domain should be derived. Our suggestion for future research is to consider the application of dyadic data analyses (i.e., APIM and APIMeM) and to evaluate the 4-stage process of the dyadic decision-making considering its antecedents and consequences. As an

example of application of such analysis, we would consider as independent variables measures of quality of the relationship between the patient and his/her partner. Those variables should be measured on both the patient and the partner side. The quality of relationship between partners is supposed to influence the dyadic decision-making, which serves as a mediator and has an effect on intra- and interpersonal outcome measures on both patient and partner. A particular dyadic decision-making style may lead to better cancer self-management, higher quality of life, less stress, better adherence to the medical regime, and a better quality of relationship between the partners. This evidence would enhance the scientific knowledge and may give impetus for further research.

## Conflict of Interest Statement

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## Author Contributions

S.P. and M.M. contributed to conceptualization; S.P., C.M., and M.M. contributed to writing. All authors have read and approved the submitted version of the manuscript.

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