

Review

Exploiting Inter-Organizational Relationships in Health Care: A Bibliometric Analysis and Literature Review

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Abstract: Inter-organizational relationships are high on the health policy agenda. Scholars and practitioners have provided heterogeneous views about the triggers of collaborative practices and the success factors that underpin the sustainability of inter-organizational relationships in the health care domain. The article proposes a literature review aimed at systematizing current scientific research that contextualizes inter-organizational relationships to health care. A mixed approach was undertaken, which consisted of a bibliometric analysis followed by a narrative literature review. A tailored search strategy on Elsevier’s Scopus yielded 411 relevant records, which were carefully screened for inclusion in this study. After screening, 105 papers were found to be consistent with the study purposes and included in this literature review. The findings emphasize that the establishment and implementation of inter-organizational relationships in health care are affected by several ambiguities, which concern both the governance and the structuring of collaborative relationships. The viability and the success of inter-organizational relationships depend on the ability of both central and peripheral partners to acknowledge and address such ambiguities. Failure to do so involves an opportunistic participation to inter-organizational relationships. This endangers conflicting behaviors rather than collaboration among partners.

Keywords: inter-organizational relationship; health care; collaboration; cooperation; network

1. Introduction

Inter-organizational relationships have been generally understood as distinguishing forms of interactions linking two or more organizations in order to “... create a synergy that multiplies the reach and effectiveness of the partners” (Taylor and Doerfel 2005, p. 122). Literature has largely tried to unravel the features that characterize the establishment and the functioning of inter-organizational relationships (Oliver and Ebers 1998; Stevens et al. 2015). Scholarly attention has been primarily focused on specific issues, including the triggers of relational dynamics and the success factors that underpin their effectiveness (Agostini and Nosella 2019; Brattström and Faems 2019). Even though inter-organizational relationships are achieving an increasing salience in health care, only limited efforts have been accomplished to systematize the ingredients that are needed in the recipe for effective inter-organizational relationships in this context (Palumbo 2016a). This is striking, since—alongside leading to convergent (i.e., cooperative) exchanges between partners—inter-organizational relationships may determine diverging (i.e., conflicting) interactions, which are thought to undermine both individual and collective performances of partners (Howard et al. 2019). The establishment of inter-organizational

relationships is a managerial dilemma for organizations (Huo et al. 2019), involving the need to achieve a delicate balance of power among partners (Oliveira and Lumineau 2019). This is especially true as far as partners show heterogeneous cultures and values, as it happens when transversal collaborations involving health care and social care organizations are involved. In fact, a lack of shared and unanimous understandings may pave the way for diverging interactions (Vangen 2017). Heterogeneous cultures and value are recurring in multi-organizational collaborative groups, where different partners may have conflicting purposes and goals, which undermine the effectiveness of the collaboration (Eden and Huxham 2001).

The imperatives of patient-centredness (Palumbo 2016b) and continuum of care (Gittel and Weiss 2004) gave rise to a momentum of inter-organizational relationships in health care, sticking to a perspective of integrated care (Valentijn et al. 2015). Acting as overarching policy tenets that inspire the functioning of the health care system, they boost the relevance of inter-organizational relationships in health care (Ahgren and Axelsson 2007). Since patients generally express multiple health-related needs that fall at the intersection of different institutions (Shaw et al. 2006; Palumbo 2015), entities operating in the health care sector have to create and maintain a thick web of connections (Fleury 2006), which allows for dealing with their demand of care in a timely manner (Zakus 1998). Even though it has been argued that inter-organizational relationships are quintessential for the appropriate functioning of the health care system (Palumbo et al. 2017), scholars have stressed that—under certain circumstances—collaborations may not be effective to meet the evolving health needs of patients (Dickinson and Glasby 2010). Among others, institutional hurdles (Fleury et al. 2002), differentiated managerial contexts (Hellberg and Grönlund 2013), diverging organizational cultures (Palumbo and Manna 2018), dualities of interest (Paluzzi 2012), and inter-professional conflicts (Bajwa et al. 2020) are likely to hinder the effectiveness of inter-organizational relationships.

The need to identify the requisites to the creation of successful inter-organizational relationships in health care calls for a systematization of current scientific knowledge. Answering to this call, the article proposes a literature review aimed at unravelling the main streams of research that contextualize inter-organizational relationships to the health care domain. More specifically, this study is an attempt to answer the following research questions:

- R.Q. 1: What are the triggers of inter-organizational relationships in health care?
- R.Q. 2: What are the attributes of inter-organizational relationships in health care?
- R.Q. 3: What are the main implications of inter-organizational relationships in health care?

The outline of the article follows. Section 2 presents the study design, depicting the research strategy and the criteria that steered the selection of relevant contributions. Section 3 reports the study findings and provides a tentative answer to the research questions. Section 4 critically discusses the study results, proposing some avenues for further developments. Section 5 concludes the paper, outlining the main conceptual and practical implications of this literature review.

2. Methods and Materials

2.1. Study Design

The research design consisted of a mixed methodology. It aimed at unravelling the state of the art in the field of inter-organizational relationships applied to health care. Moreover, it was intended to provide a comprehensive synopsis of extant scientific contributions to envision some avenues for further developments. A bibliometric analysis was firstly executed to achieve an increased understanding of current research streams and topics. Then, a narrative literature review was accomplished to systematize retrieved scientific contributions. This investigation was inspired by similar reports, which have been developed in diverse research fields (see, among others: López-Fernández et al. 2016; Dabić et al. 2019; Elango 2019; Pellegrini et al. 2020). More specifically, a three-stage ad hoc research protocol was set to correspond to the purposes of this research.

At the initial stage (Data Collection), an exhaustive exploration on scientific citation databases was performed. The intention was for articulating the high impactful spectrum of scientific data depicting the specificities of the investigated research field. Second, several rounds of peer discussions were placed, which concretely advanced the inclusion and exclusion criteria (Data Preparation). The third and last stage (Core Analysis) was formed to agree the bibliometric method and the narrative approach to systematize collected items. Core analysis encompassed two sub-steps: (1) a clusterization analysis; and (2) a narrative literature review based on the approach proposed by [Tranfield et al. \(2003\)](#).

2.2. Data Collection

A list of essential items was created by using diverse keyword searches. Research activities kicked off in early 2020. The intent was to establish a common understanding among authors of the research strategy. This step was critical, since the inclusion or exclusion of a single term may mislead the direction of the research and engender a fragmented set of contributions. Multiple trials were placed until the authors consented on the highly representative terms that could outline directions of inter-organizational research in the health care context.

The procedure for selecting the most fitting citation database necessitated all authors' involvement. Web of Science™ and Scopus® were chosen as they are representatives of the most reliable resources for bibliometric examinations ([Ding et al. 2016](#)). A comparison was made between the two databases. The cross-validation results exposed that Scopus indexed a larger and more representative number of items. Hence, it was selected as the primary data source for this analysis. The distinguished essential terms were executed using a Boolean search query. The search string follows:

TITLE-ABS-KEY ("Inter-organi* network" OR "Interorgani* network" OR "Inter-organi* relation*" OR "Interorgani* relation*" OR "Inter-organi* Collab*" OR "Interorgani* Collab*" OR "Inter-organi* Coop*" OR "Interorgani* Coop*") AND TITLE-ABS-KEY ("health care" OR "healthcare")

The asterisk (*) was adopted for the inclusion of all permissible variations for each term and allowed collecting the highest possible number of contributions. The search was not constrained to any other restrictions. The queries for items collection were performed between March and June 2020. The last query was run on 17 June 2020. As a result, 411 documents were initially recorded.

2.3. Data Preparation

Considering the high range of documents that were collected during the first stage, the preparation of the dataset was scheduled on the basis of a multi-step procedure. Firstly, all collected documents were integrated into an electronic worksheet. Two authors read all contributions separately, concentrating on the titles, abstracts, and keywords. After a first round of meetings, the authors unitedly reported three exclusion criteria for the manual screening: (1) no direct association with the aims of the research (i.e., limited focus on issues related to inter-organizational relationships); (2) no direct association with the scope of the research (i.e., irrelevant reports with no direct attention on the role of inter-organizational relationships in health care); (3) lack of managerial and practical implications (i.e., articles unable to provide any meaningful insight into the managerial challenges of organizing and implementing inter-organizational relationships). As a result of this screening phase, 225 papers were dropped. Going more into details: 80 items were not consistent with criterion (1); 69 items were removed according to criterion (2); and 68 were omitted in light of criterion (3). In addition, 8 articles were not considered according to other issues, including missing abstract. The finalized dataset consisted of 186 fitting and impactful articles.

2.4. Core Analysis

The approach chosen for the core analysis commenced with a bibliometric analysis based on the "visualization of similarities" (VOS) technique. It allowed discovering the consistencies among homogenous bodies of scientific knowledge ([Van Eck and Waltman 2007](#)). This research used the

software tool “VOS viewer” (v. 1.6.10), which practices VOS mechanism as its aggregation routine (Van Eck and Waltman 2010). It is worth noting that this research opted for the bibliographic coupling as the aggregation method of retrieved manuscripts (Kessler 1963).

Bibliographic coupling analyses if two articles have one or more shared reference. The larger the number of references that exists among the two, the more compelling these two articles are to refer to an identical community (Boyack and Klavans 2010). VOS viewer produces a matrix by normalizing the co-occurrence of all item’s references (Van Eck and Waltman 2007). Then, it forms a two-dimensional graph for all items, which are positioned in accordance to their similarity measures computed for their references. As a result of this procedure, the shown graph is a plot in which the items’ distance can be translated as a significant indication of their connectedness. The closer the items, the more powerful their association. Besides, VOS viewer arranges the articles encompassing unified themes, thus facilitating a clustering analysis. The articles that pertain to a similar cluster are highly linked and, consequently, they could identify a loosely-connected stream of research.

The bibliometric coupling analysis was assigned with some controls concerning the VOS viewer’ parameters. This procedure has been previously suggested to ensure consistency among themes and including only documents identified as “core items” in each cluster, due to reaching a sufficient level of similarity (Small 2009; Glänzel and Thijs 2012). The bibliographical coupling threshold was set at 5, which solely allowed articles that have high cohesiveness and dense interconnections between themselves to be engaged in clusterization (i.e., at least five citation connections) (Hervas-Oliver et al. 2015). Where the strength of the link of the selected items was zero, they were discarded due to the lack of relationships with other records. Therefore, 105 articles were placed into VOS viewer clustering analysis as the most representative core documents of the field.

The last part of the core analysis was dealt with the systematization of the VOS viewer aggregation results (Manesh et al. 2020). A narrative approach was adopted to interpret each cluster, developing an original conceptualization of the current intellectual structure of the field. Based on these interpretations, pertinent knowledge base about each cluster was characterized, the main areas of interests were discussed, and future research avenues were proposed.

3. Findings

3.1. Overview of Selected Literature

The literature review relied on a sample of 105 papers. The items were published between 1980 and 2020. However, less than a sixth of them were published in 2000 or before (16.2%). All of the items but two consisted of articles published in peer reviewed journals. The exceptions were a conference proceeding and a chapter published in an edited book. A third of the articles were published in the 10 years preceding this study (33.3%). The great majority of them consisted of regular articles (96.2%). Only four articles were literature reviews. None of them overlapped with the topic of this research. A variety of scientific fields were contemplated, including policy and strategy making, organization studies, and management. Two journals (BMC Health Services Research and Social Science and Medicine) accounted for 1 in 10 research items (10.5%). Health Care Management Review, Health Education and Behavior, Health Policy, Health Promotion International, Health Care Management Review, the International Journal of Health Planning and Management, the International Journal of Integrated Care, and Medical Care Research and Review published a quarter of the items included in this study (24.5%). Most of the items were co-authored by two or more scholars (85.7%). Less than one in six were signed by a single author (14.3%). On average, the articles included in this literature review had more than 33 citations ($\mu = 33.65$; $\sigma = 64.61$), ranging from a minimum of five to a maximum of 559 citations.

Figure 1 graphically shows the outcome of the clusterization analysis. In sum, seven clusters were retrieved, corresponding to a similar number of research streams in the field of inter-organizational relationships applied to health care. The composition of the cluster was not affected by either the year

of publication or the source of articles. On average, the clusters consisted of 15 items ($\sigma = 5.59$), ranging from a minimum of eight items to a maximum of 23 items. They had more than 500 average citations ($\sigma = 404.19$), with the most cited cluster having 1314 citations and the less cited cluster reporting 133 citations. The number of citations reflected the composition of clusters in terms of size and year of publication.

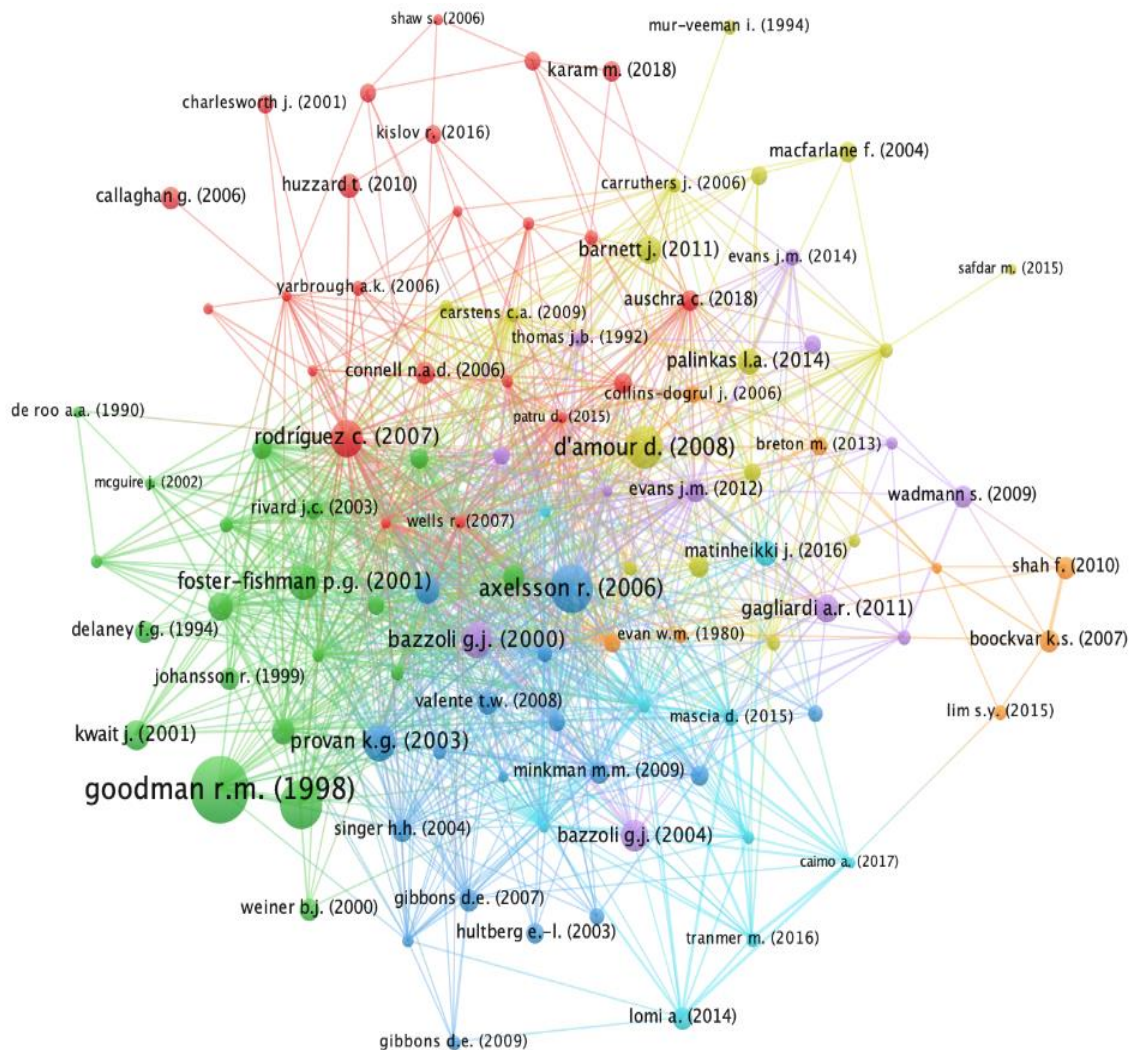


Figure 1. Visualization of the outcome of clusterization analysis ($n = 105$).

Table 1 shows an overview of the clusters, relating them to the research questions depicted above. *R.Q. 1* finds an answer in the “red”, the “yellow”, and the “orange” clusters, which, respectively, deal with the triggers of inter-organizational relationships, the hard and soft infrastructures underlying collaborative relationships, and the barriers to cooperation in the health care context. *R.Q. 2* is touched by the “purple” and the “green” clusters, which contextualize inter-organizational relationships in a perspective of integrated care and discuss the steps that may lead to the organization of an effective collaborative networks among health care organizations. Lastly, *R.Q. 3* is addressed by the “blue” and the “cyan” clusters, which focus on the direct and indirect implications of inter-organizational relationships on the appropriate functioning of the health care service system.

Table 1. An overview of the research items' clusterization.

Research Question	Cluster	Key Contents
R.Q. 1: What are the triggers of inter-organizational relationships in health care?	"Red" cluster	Two triggers to inter-organizational relationships can be retrieved. Firstly, they are engendered by the complexity of the external environment and they are solicited by the need of health care organizations to thrive in a continuously evolving institutional, epidemiological, and competitive context. Secondly, they are encouraged by internal triggers. Since partners may be interested to opportunistically participate in networking, trust and commitment to collaboration are key internal determinants of inter-organizational relationships in the health care domain.
	"Yellow" cluster	Partners have to align external pressures, features of organizational collaborations, and internal attributes to build successful collaborations. Governance models based on centrality and connectivity, formalization of exchanges, trust internalization, and shared goals and values are essential for the effectiveness of inter-organizational collaborations.
	"Orange" cluster	Goal conflicts, organizational and operational inconsistencies, and communication barriers amongst partners prevent effective collaboration. Such conflicts are triggered by the specificity of partners' policies, structures, cultures, and practices.
R.Q. 2: What are the attributes of inter-organizational relationships in health care?	"Purple" cluster:	Strategic and operational coordination, holistic and inter-professional networking, integrated financial management systems, and networked IT systems boost the implications of inter-organizational relationships in terms of integrated care.
	"Green" cluster:	Coordination is facilitated when interorganizational relationships fulfill both the internal agency needs for goal attainment and the external needs for exerting greater control over the larger policy and program environment. A mixture of integration and decentralization determines better results as compared with a fully-fledged centralization of inter-organizational practices.
R.Q. 3: What are the main implications of inter-organizational relationships in health care?	"Blue" cluster	Effective inter-organizational relationships require sound micro, meso, and macro-level interventions. The establishment of larger coalitions (networks of networks) and the participation of the community are essential to sustain the institutional legitimacy of inter-organizational relationships.
	"Cyan" cluster	Selfish interests may prevent the effectiveness of inter-organizational relationships. They are more likely to arise when leading actors are unable to affirm their centrality, when inter-organizational ties are weak, and when the partners do not perceive an adequate level of trust. This leads to competitive behaviors rather than to cooperative practices.

3.2. The "Red" Cluster: The Outer and Inner Triggers of Inter-Organizational Relationships in Health Care

Literature has widely acknowledged that the health care system should be conceptualized as an inter-organizational field (Gramm 1992). Both external and internal factors determine a need for inter-organizational relationships in health care. On the one hand, inter-institutional collaboration is required to deal with the challenges faced by health care organizations, including the evolution of the health needs of people ushered by the process of population aging, the limited availability of financial resources, and the growing expectations of patients (Karam et al. 2018). On the other hand, inter-organizational relationships encapsulate the idea "... that the interests of the client or

patient are privileged above all else and various care practices, from diagnosis to cure, should be integrated along patient pathways" (Huzzard et al. 2010, p. 294). This allows for achieving increased organizational performances due to better efficiency and effectiveness (Eiriz et al. 2010). From this point of view, it is not surprising that inter-organizational relationships are identified as a crucial solution to address the epidemiological transition from the prevalence of acute conditions to the predominance of chronic diseases.

Two groups of triggers of inter-organizational relationships can be identified in the health care domain. Firstly, the changed attributes of the competitive environment met by health care organizations shape the outer determinants of inter-organizational collaborations. The interaction between health care organizations permits achieving a more appropriate and sustainable use of available resources in order to satisfy the increasingly complex health needs of patients, avoiding the occurrence of overutilization or underutilization of existing assets and containing the overall costs of health services provision. Hardin et al. (2017) illustrate the case of high need, high cost patients, who report a constellation of chronic diseases and related pathologies: in this case, collaboration and inter-organizational relationships allow to design a comprehensive delivery system targeted to such patients, preventing duplication of services or inappropriate treatments, which produce increased costs and decreased health outcomes. In other words, inter-organizational relationships are urged from the complexity of the external environment, which encourages health care institutions to establish cooperative practices to minimize their vulnerability to the variety and uncertainty of health challenges addressed and to enhance their viability (Yarbrough and Powers 2006a). Moreover, the propensity of health care organizations to participate in collaborative networks is affected by the evolving expectations of relevant stakeholders, who may bind their institutional support to health care organizations to the involvement of the latter in inter-organizational relationships (Zou et al. 2012). Partnerships are the by-product of a reconfiguration of the governance framework that steer the functioning of health care organizations (Lewis 2009). The transition towards a governance approach that favors cooperation and networking is legitimized by the concurring aims of overcoming the burdens on integrated care imposed by traditional bureaucratic approaches (Rodriguez et al. 2007) and of upholding the primacy of public involvement and people-centredness (Callaghan and Wistow 2006). This is especially true as far as chronic conditions are concerned, such as diabetes and hypertension, which require the conjoint efforts of different health care organizations operating at both the hospital and territorial levels. In sum, inter-organizational relationships are intended to enhance the health care institutions' ability to obtain the resources and the competencies they need to thrive in a continuously evolving institutional, epidemiological, and competitive environment (Yarbrough and Powers 2006b).

Secondly, some inner triggers of inter-organizational relationships can be retrieved. It has been argued that the willingness of health care organizations to establish cooperative partnerships comes at the intersection of opportunism and trust (Meijboom et al. 2004). Whilst the complementarity of partners' resources nurtures an opportunism-based understanding of inter-organizational relationships (Marín-Idárraga and Campos 2015), shared values and consistent objectives boost the perception of trust amongst partners (Wells and Weiner 2007). However, opportunism and trust may collide, determining partners' aberrant behaviors (Connell and Mannion 2006). Hence, an additional internal ingredient is needed to boost networking practices, that is to say commitment to relationships (Cote and Latham 2006). It sustains the organizational propensity to merge diverging expectations and propositions; moreover, it minimizes the risk that inter-organizational relationships generate tensions that undermine the frequency and richness of exchanges (Laing and Cotton 1997).

It is worth noting that the establishment of inter-organizational relationships paves the way for unprecedented management challenges for health care organizations. The need for inter-institutional coordination produces relevant burdens, which affect issues related to the administration, funding, and delivery system of health care organizations. As illustrated by Charlesworth (2001) focusing on a collaborative partnership in primary care, cooperation implies the establishment of harmonized management structures, additional demands of audit, and integrated performance measurement, which

may disrupt conventional managerial practices. Limited ability to address such challenges may turn into barriers to the participation in collaborative networks (Auschra 2018), making inter-organizational relationships unsustainable (Shaw et al. 2006). The identification and the empowerment of boundary spanners within health care organizations is crucial to overcome this critical situation. Working both within and across organizations, boundary spanners create shared senses and understandings about inter-organizational relationships, sustaining trust and commitment to relationships (Patru et al. 2015). They act as bridges among partners, overcoming internal resistances through mobilization and negotiation (Kousgaard et al. 2015) and allowing rich exchanges of knowledge and information (Kislov et al. 2016).

3.3. The “Yellow” Cluster: The Hard and Soft Infrastructures of Inter-Organizational Relationships

The success of inter-organizational relationships in health care relies on the partners' ability to achieve alignment between the features of organizational collaborations, the external environmental pressures, and the internal attributes of partners (Palinkas et al. 2014). Tailored hard and soft interventions are required to realize this alignment. It has been argued that dense and poorly centralized network structures are more likely to generate trust and commitment amongst partners, sustaining their willingness to accommodate their inner attributes to the requisites of inter-organizational relationships (Retrum et al. 2013). Besides, participant governance approaches and shared network performance assessment tools should be devised in order to avoid the appearance of opportunistic behaviors and to further stimulate the density and the vividness of the collaboration (Willis et al. 2013). A fixer—that is to say, a leading partner that acts as a champion of the collaborative network and promotes the active engagement of all relevant participants—should be identified and empowered to foster the alignment between individual attributes of partners and the features of the network (Mur-Veeman and Raak 1994). Lastly, a shared and integrated Information Technology (IT) governance framework should be crafted and implemented to enact the exchange of knowledge and information amongst partners (King 2013). Alongside generating managerial alignment, the presence of an integrated IT framework permits building consensus and reliability due to the increased transparency of inter-organizational relationships and more reliable interactions (Safdar et al. 2015). Discussing the inter-organizational attributes of penitentiary care, Palumbo (2015) discussed these four hard attributes: whilst centralized network structures produce a strategic and operational alignment between health care organizations and penitentiary institutions, shared networking practices generate trust and commitment, encouraging collaboration and discouraging conflicting behaviors. Mediating agents—such as boundary spanners operating at the interface of health care organizations and penitentiary institutions—establish institutional and managerial links to sustain collaborative practices and reduce institutional clashes. Integrated IT solutions permit to timely acknowledge and address the health needs of patients, paving the way for a unanimous and integrated action of health care organizations and penitentiary institutions.

The hard factors may be ineffective if partners fall short in finding a balance between diverging organizational and professional cultures (Welsh et al. 2016). Therefore, soft infrastructures are also required to make inter-organizational relationships effective, preventing asymmetries and a lack of reciprocity to arise (Carruthers et al. 2006). The development of a sound inter-organizational leadership architecture generates cohesion and agreement amongst partners, which engender shared values, vision and goals (Carstens et al. 2009). Since the participation of individual partners to inter-organizational relationships may be motivated by selfish reasons (Dainty et al. 2013), attention should be paid to the management of the symbolic features of collaborative networks (Barnett et al. 2011), motivating partners to give priority to collective goals, rather than to egoistic aims (Macfarlane et al. 2004). The underlying informal relationships between partners should be elicited and managed, as happens for formal and explicit exchanges (Dearing et al. 2017). Tacit relationships embed the knowledge that build the effectiveness of inter-organizational collaboration (Secundo et al. 2019) and fill the physical gaps that exist between partners (Harris et al. 2012).

Drawing on the illustrative accounts of health managers and professionals operating in Canada, [D'amour et al. \(2008\)](#) found evidence of the hard and soft factors explaining the success of inter-organizational relationships in health care. More specifically, tailored governance models based on centrality and connectivity, formalization of exchanges, internalization of trust, and agreement of shared goals and values are essential for the success of inter-organizational relationships.

3.4. The "Orange" Cluster: The Barriers to Inter-Organizational Relationships

Health care organizations join collaborative networks to cope with the uncertainty and the unpredictability of their competitive environment. However, since the inter-organizational strategy of health care institutions may have drawbacks on their structural and managerial dynamics, several barriers prevent the success of networking practices ([Evan and Klemm 1980](#)). The participation of health care organizations in inter-organizational relationships basically involves the willingness of partners to accept limitations to the individual autonomy that derive from increased interdependencies. A lack of previous experiences of collaboration is a major barrier to inter-organizational relationships. As argued by [Dunlop and Holosko \(2004, p. 13\)](#), who investigated the case of a mandated inter-organizational collaboration of health and human service agencies, "... a previous history of collaborative relationships (in the formative phase) appears to be an important pre-condition that facilitates common goals". Actually, it increases the propensity to accept restrictions of individual autonomy and enhances the willingness to participate in collaborative relationships. However, previous experiences of collaboration are not enough. This is especially true when prospective partners belong to diverse institutional, professional, and cultural contexts, which imply heterogeneity of organizational and managerial activities, as it is in the case of penitentiary care reported above. Institutional differences may determine bureaucratic and cultural hurdles to collaboration ([Collins-Dogrul 2006](#)). Obstacles can also be produced by professional differences between partners, who may find difficulties in cooperating due to non-convergent strategic goals and managerial attributes ([Boockvar and Burack 2007](#)), as happens in collaboration between health care and social care institutions.

The specificity of partners' policies, structures, cultures, and practices is likely to trigger conflicts, rather than collaboration, which undermine the effectiveness of inter-organizational relationships ([McCloskey et al. 2009](#)). Conflicting interactions take a variety of shapes. Goal conflicts among partners constrain the opportunities for collaboration, creating pressures that detach health care organizations from cultivating inter-organizational relationships ([Lim et al. 2015](#)). Besides, organizational and operational inconsistencies between health care institutions prevent the exchange of knowledge and information, hindering collaboration ([Breton et al. 2013](#)). Lastly, yet importantly, communication barriers prevent building an engaging social capital, which is crucial to sustain the partners' involvement in networking ([Shah et al. 2010](#)).

3.5. The "Purple" Cluster: Inter-Organizational Relationships in a Perspective of Integrated Care

Inter-organizational relationships in health care are primarily intended to overcome structural and procedural issues, which fragment the health service delivery system and make it impossible to achieve patient centredness and integrated care ([Evans et al. 2014](#)). A variety of approaches can be undertaken to promote and support integrated care ([Bazzoli et al. 2004](#)). The first step to the establishment of an integrated health care system that relies on a thick network of inter-organizational relationships involves the construction of strategic and operational coordination among the stakeholders who are either directly or indirectly involved in the partnership. Strategic and operational coordination leads to a shared understanding of networking practices and boosts the commitment of partners to inter-organizational relationships ([Wistow et al. 2012](#)). A holistic, multi-modal, transdisciplinary, and inter-professional networking model should result from the strategic and managerial alignment of partners. Beyond allowing the integration of care in a patient-centred perspective, the holistic model paves the way for shared decision making and enhanced interactions amongst partners, which are fundamental to the success of inter-organizational relationships. This is what has been

found by [Gagliardi et al. \(2011\)](#) in complex and time-dependent health care settings, which requires a comprehensive integration of professionals with heterogeneous specializations and functions, as it happens to deal with life-threatening health-related conditions.

Holistic health care models would be unable to express their contribution to integrated care if not backed by the introduction of an inter-institutional financial management system, which, on the one hand, should support cooperation amongst partners and, on the other hand, should ensure adequate autonomy and flexibility to individual health care organizations ([Bazzoli et al. 2000](#)). Attention should be paid to the management of ambiguities and uncertainty that may impair partners' collaboration. Inter-organizational information processing activities are essential for this purpose, increasing the partners' ability to share relevant data and knowledge and to reduce the unpredictability of environmental challenges ([Thomas et al. 1992](#)).

The implementation of integrated care via inter-organizational relationships requires some interventions at the administrative and the operational levels in order to ensure the continuous coordination amongst the health services' providers who are involved in the integrated delivery process ([Wadmann et al. 2009](#)). Tailored web-based systems and tools should be designed to expand coordination beyond the organizational boundaries, involving patients in a pathway which is enacted by both synchronous and asynchronous interactions in a perspective of continuum of care ([Pettrakou 2009](#)). The development of a distributed leadership approach, which empowers all relevant interlocutors and elicits individual perspectives, is needed to foster collaboration at the operative level and to remove the hurdles to integrated care ([Touati et al. 2006](#)). Lastly, a patient-centred focus has been claimed to be essential for the transition of integrated care via inter-organizational relationships ([van Rensburg and Fourie 2016](#)). Integrated patient portals are especially useful for this purpose: alongside contributing to recompose fragmented care ([Otte-Trojel et al. 2015](#)), they facilitate relational coordination, reducing the perceived costs of inter-organizational interactions and emphasizing the benefits of integrated care ([Otte-Trojel et al. 2017](#)).

3.6. The "Green" Cluster: Organizing an Inter-Organizational Venture

Literature acknowledged that setting-up collaborative networks in health care involves many challenges, which concern both inter-organizational dynamics and stakeholders' expectations ([Weiner et al. 2000](#)). The need to overcome these challenges requires a careful organization of the partnership, in order to avoid potential side effects on the viability of the collaboration ([Delaney 1994](#)). The first challenge to address concerns the network governance. Vertical and horizontal ties should be concomitantly exploited to steer the collaborative relationship. Whilst hierarchical links are crucial to underpin the formal structure of the collaboration, horizontal links elicit informal and dependence-based ties, nurturing inter-dependency between partners ([Johansson and Borell 1999](#)). To effectively manage both the formal and informal exchanges, central actors should use their position in the network to identify and document local issues and to create shared understanding of inter-organizational relationships ([Bazzoli et al. 1998](#)). This promotes partners' reciprocal trust ([Goodman et al. 1998](#)) and enhances the whole network ability to meet the evolving expectations of the community ([Morrissey et al. 1997](#)). Moreover, as argued by [Rivard and Morrissey \(2003, p. 397\)](#) with reference to mental health service systems, "... coordination is facilitated when interorganizational relationships fulfill both the internal agency needs for goal attainment and the external needs for exerting control over the larger policy and program environment". This means that central agents should stress the network's contribution to the enhancement of the partners' ability to achieve their institutional aims, as well as the role of collaborative relationships in increasing the collective ability to control the external environment.

The appropriate management of horizontal and informal links requires central actors to delegate some strategic decisions and acknowledge autonomy to peripheral actors, improving mutual adaptation and encouraging alignment among partners ([De Roo and Maarse 1990](#)). The empowerment of peripheral actors enhances the individual awareness of the role of inter-organizational relationships in

reducing shortcomings determined by the scarcity of available resources (Provan et al. 1996). Moreover, it improves the partners' image in the networks, which trigger an increased engagement in collaborative practices (Schermerhorn and Shirland 1981). This is especially relevant when inter-organizational collaborations are temporarily or opportunistically exploited by partners to meet the needs of particular groups of organizations or to deal with the specific health needs of patients (Kwait et al. 2001).

Previous studies have stressed that "... a structure that promotes information exchange, encourages and formalizes joint service delivery initiatives, and develops an internal culture that values collaboration and keeps member organizations accountable" makes inter-organizational relationships more feasible and effective (Foster-Fishman et al. 2001, p. 901). In line with this proposition, it has been argued that a diversification of integration approaches—which should take into consideration local needs and expectation—determines better results as compared with a centralization of inter-organizational practices (Fleury et al. 2002). The focus on local dynamics generates two concomitant gains. On the one hand, it produces a greater commitment of peripheral actors to inter-organizational tasks, enhancing their connectivity in the network (Schumaker 2002). On the other hand, it involves a better integration of peripheral actors in inter-organizational relationships, increasing the thickness of the network (Morrissey et al. 2002).

Synthesizing these considerations, the organization of collaborative relationships should aim at the achievement of a twofold purpose: firstly, it should satisfy both the partners' internal need for goal attainment; secondly, it should meet their external need for getting control over the environment (Rivard and Morrissey 2003). From this standpoint, the key factors motivating partners to enter in an inter-organizational relationship primarily concern the potential gains in terms of organizational learning capacity and of institutional legitimacy (Weech-Maldonado et al. 2003). Successful organizational approaches to ensure the sustainability of inter-organizational relationships should acknowledge these issues, avoiding that they may nourish conflicts rather than collaboration. This is possible by: (1) introducing appropriate accountability mechanisms to ensure the partners' strategic and operational alignment (Mitchell and Shortell 2000), (2) supporting mutual understandings through bottom-up governance models (McGuire et al. 2002), and (3) implementing tailored resource allocation systems, which allow to reward positive behaviors and to sanction negative ones (Fleury 2006). As argued by Wells et al. (2005) focusing on partnerships in the field of drug abuse treatment, these interventions sustain the partners' motivation to participate to inter-organizational relationships, enabling collaboration.

3.7. The "Blue" Cluster: The Implications of Inter-Organizational Relationships

Since multiple interests and diverging purposes may characterize the participation of partners in inter-organizational relationships, it is not easy to identify the strategic, organizational, and management factors underpinning the effectiveness of networking practices (McDonald et al. 2009). Starting with a macro-perspective, differentiation and integration are concomitantly needed to enhance the effectiveness of inter-institutional collaborations (Axelsson and Axelsson 2006). Whilst differentiation enhances the partners' responsiveness and increases the network's ability to deal with the evolving demands of the population served, integration improves the quality and the frequency of inter-organizational exchanges (Willumsen 2008). This is especially true when temporary inter-organizational projects are concerned, like collaborations implemented to manage unforeseen health challenges that may undermine the appropriate functioning of the whole health service system. In this case, the demarcation of networking practices from ordinary institutional activities permits to nurture the commitment to collaborations, even though it prevents inter-organizational relationships from taking root out of their temporal and operational boundaries (Löfström 2010). Two additional macro-level factors contribute to the success of inter-organizational relationships (Walker 1992). Firstly, the participation of the community increases the network effectiveness and efficiency, being consistent with the transition towards a population health approach (Wendel et al. 2010). Secondly, the engagement of networks in larger coalitions may concur in improving institutional legitimacy at the individual and group

levels, involving partners in a complex value constellation (Valente et al. 2008). This is the case of inter-organizational relationships aimed at addressing cardiovascular diseases. Partners are likely to establish multiple collaborations that are specialized on specific health treatments or diseases. Such collaborations are included in larger coalitions, which increase the extent and the strength of the cooperation among partners. Obviously, the larger and the more comprehensive the network, the greater the partners' ability to involve patients in value co-creation.

The success of inter-organizational relationships at the meso-level depends on the partners' ability to establish a continuous and vivid exchange with the external environment; this is made possible by adapting the structure and the attributes of the network to the demands of relevant stakeholders (Leurs et al. 2008). Scholars have argued that the development of successful inter-organizational relationships generally evolves through four steps, consisting of: (1) initiative design; (2) execution; (3) monitoring; and (4) transformation (Minkman et al. 2009). The transformation ability of the network is fostered by two factors. It needs the active and mindful participation of all the partners, who should be aware that the participation in the network involve a sacrifice of decisional autonomy and the engagement in collective decision-making processes (Gibbons and Samaddar 2009). Besides, it requires that all partners—both central and peripheral ones—put their organizational learning capability at the service of the network, creating a distributed adaptability to the evolving challenges of the external environment (Faust et al. 2015).

The availability of adequate financial resources acts as a requisite for the success of inter-organizational relationships at the micro-level. Literature has emphasized the importance of external sources of financing. Beyond breaking the partners' inertia and launching the collaborative discourse (Provan et al. 2003), they awaken the awareness of relevant stakeholders and kick off the establishment of inter-organizational relationships (Schmidt et al. 2009). However, external funds should be accompanied by the participation of partners in co-financing the development of collaborative practices. Co-financing is essential to building commitment to the network and to legitimizing the common goals (Hultberg et al. 2003). In addition to financing, Casey (2008) identified seven success factors of inter-organizational relationships, which include: trust, leadership, change management, communication, involvement in decision making, power, and partnership coordination. Their contribution to the effectiveness of inter-organizational relationships is twofold. Whilst they promote the partners' engagement in the network through information exchange and knowledge sharing (Gibbons 2007), they pinpoint the reliability of inter-organizational relations and nurture the network's density and thickness (Singer and Kegler 2004).

3.8. The "Cyan" Cluster: Looking beyond Cooperation

Inter-organizational relationships give birth to a thick web of interdependencies, which are hard to monitor and investigate (Caimo et al. 2017). Even though interactions are generally directed to enact cooperative behaviors, they may turn into disruptive dynamics intended to achieve egoistic or particularistic aims of partners. Hence, the success of inter-organizational relationships can be impaired by competitive behaviors that are undertaken by organizations to enhance their particular success and to strengthen their long-term viability (Westra et al. 2017a). Selfish interests are more likely to arise and flourish when leading actors are unable to affirm their centrality in the network, when horizontal ties are weak, and when the partners do not perceive an adequate level of trust to gather around a shared vision. Needless to say, this has negative effects on the systemic value creation ability of partners (Matinheikki et al. 2016).

In spite of these considerations, inter-organizational relationships have been found to generate an increased competitive interdependency among partners, being critical for the financial and managerial sustainability of individual organizations (Mascia and Fausto 2013). Since such interdependencies may entail cooperative behaviors in addition to cooperative practices (Westra et al. 2017b), inter-organizational relationships characterized by strong ties are more likely to trigger positive effects on collective performances than networks tied by weak and thin exchanges (Yu and Chen 2013). A multi-level

approach should be designed to illuminate the multifaceted implications of inter-organizational relationships on partners' cooperative and competitive behaviors (Tranmer et al. 2016). Alongside assessing individual and collective performances, such an approach to performance measurement should account for the various effects of relations' centrality and density on cooperative and competitive behaviors (Mascia et al. 2015). Moreover, it should account for the multifaceted implications of network governance decentralization on the appropriate functioning of inter-organizational relationships (Lomi et al. 2014).

4. Discussion

Inter-organizational relationships and integrated care are high on the health policy agenda (Mohr and Dessers 2019). However, the establishment and the implementation of collaborative networks are ripe with challenges, meaning that may have relevant drawbacks on the partners' ability to deal with the evolving competitive issues that characterize the health care sector (Mervyn et al. 2019; Colvin et al. 2020). From this standpoint, it is useful to shed light on the triggers that incite health care organizations to accept these challenges and to participate in collaborative networks. Two propositions have been proposed to tentatively explain the willingness of health care institutions to enlance inter-organizational relationships. Firstly, it is assumed that the involvement of health care organizations in cooperative practices is influenced by the evolving characteristics of the environment, which urge health care organizations to collaborate in order to increase their control over their competitive contexts (Alexander et al. 1986). Secondly, it has been argued that the participation in collaborative networks is motivated by the health care institutions' intention to increase the portfolio of distinctive and valuable resources on which they can rely in order to meet the increasing health needs of the population served (Yarbrough and Powers 2006b).

Some internal triggers accompany the outer determinants of inter-organizational collaboration. Opportunism, trust, and commitment to cooperation are concomitantly needed to boost the cooperative propensity of health care institutions (Chakraborty 2018). Since opportunism may lead to a goal's paradox—that is to say, to diverging purposes embraced by partners in managing their involvement in inter-organizational relationships (Vangen and Huxham 2012)—trust and commitment to collaboration should be concomitantly exploited to align partners and to sustain their willingness to collaborate (Gray 2009). Boundary spanners operating at the intersection of partners are crucial to sustain trusted relationships and to foster individual commitment to the relationship, minimizing the occurrence of opportunistic and/or conflicting behaviors (van Meerkerk and Edelenbos 2018).

Effective inter-organizational relationships in health care should have specific hard and soft attributes. Hard characteristics primarily concern the governance of the network. Governance approaches should be intended to curb the partners' selfish interests and to encourage cooperative behaviors (Maurya and Srivastava 2019). This is possible by balancing centralization and decentralization in the governance of the network (Huxham and Vangen 2013). On the one hand, a leading actor should serve as a fixer of diverging and conflicting perspectives held by partners, promoting the alignment between the individual characteristics of organizations and the attributes of the network (Franco and Haase 2015). On the other hand, a participatory model should be embraced to empower partners and to enhance their willingness to actively participate in the network (Saltman et al. 2007). The introduction of an integrated IT system allows for addressing the requirements of centralization and decentralization, enabling a rich and continuous flow of information among the partners, which nourishes collaboration (Schooley et al. 2010). Soft attributes focus on the symbolic management of the partnership in an attempt to align values, cultures, and goals and promote the commitment to inter-organizational relationships and the identification with the collaborative network (Löfström 2010). The combination of hard and soft network attributes permits overcoming the obstacles to inter-organizational relationships that are produced by partners' distinguishing structures, cultures, and management approaches, nurturing their willingness to cooperate (Gray 2004).

The participation of health care organizations in inter-organizational relationships may have a variety of implications. The enactment of an inter-organizational relationship does not necessarily lead to collaborative behaviors. Rather, participation in more or less integrated networks can be motivated by egoistic and particularistic aims, which are not consistent with the collective interests. Targeted interventions intended to reduce the emergence of conflicting perspectives and diverging behaviours among partners are needed to support the success of inter-organizational relationships and to sustain cooperation (Karlsson et al. 2020). Among others, the creation of a greater interdependency among partners through an increased integration of financing, administrative activities, and health delivery processes in a perspective of integrated care has been argued to pave the way for better collaboration and lower opportunism in inter-organizational relationships (Li et al. 2018).

The study findings enlighten several promising areas for further research. Since inter-organizational relationships are nourished by trust and opportunism, future developments should be intended to illuminate the interplay between these two constructs, casting light on their implications on the partners' commitment to collaborative practices. In-depth, qualitative studies are especially relevant for this purpose, allowing for a rich and insightful account of the diverging effects produced by opportunism and trust on the viability of inter-organizational relationships. Moreover, additional efforts are required to advance what we currently know about the success factors that boost the sustainability of inter-organizational relationship at the individual and collective levels. The research results emphasized that a balanced mix of centralization and decentralization is needed to effectively manage collaborative networks, supporting integration between partners and accounting for the individual interests of participants. Empirical longitudinal studies may contribute to enlightening the approaches that are more fitting to balance centralization and decentralization, supporting the success of inter-organizational relationships. Lastly, yet importantly, future studies should be aimed at unravelling the multiple triggers that spur the health care organizations' willingness to participate in inter-organizational relationship. Qualitative and quantitative research is needed to figure out the determinants of collaboration and to examine their implications on partners' behaviors.

5. Conclusions

Several limitations affected the quality of this study. Firstly, the narrative approach used to systematize data was influenced by subjective interpretations of authors, which may have affected the objectivity of research findings. However, it allowed for a unique and original interpretation of extant scientific knowledge that contextualizes inter-organizational relationship to health care, soliciting some new insights into the establishment and management of collaborative relationships among health care organizations. Secondly, the use of a single citation database to collect relevant items constrained the breadth of this study. Nevertheless, since Scopus indexed most of the records listed in competing sources, it can be argued that this limitation did not affect the consistency of the study findings. Thirdly, the focus on inter-organizational relationships in health care was consistent with the purpose of collecting some general insights that can be broadly applied to inter-organizational relationships in health care. However, it prevented from obtaining targeted insights into the implementation of collaborative networks in specific health care contexts.

In spite of these limitations, the study implications are twofold. From a conceptual perspective, it emphasizes the ambiguities that characterize the establishment of inter-organizational relationships. Partners' involvement in collaborative networks derives from a mix of trust and opportunism, which are both essential to awaken the propensity of health care organizations to cooperate. Besides, the success of inter-organizational relationships relies on a balanced blend of centralization and decentralization, which results in a participatory governance approach. Finally, yet importantly, both integration and demarcation are required for the viability of inter-organizational relationships. Failure to acknowledge and address the ambiguities that are associated with the establishment of inter-organizational relationships will determine an impaired understanding of collaborative links between partners and the emergences of conflicting relationships.

Embracing a managerial perspective, this study's findings stress that inter-organizational relationships serve two concurring purposes. Whilst they are intended to increase the network control over the competitive environment, they are also directed to enhance the partners' access to distinctive and valuable resources, which are critical to increase the ability to address the evolving needs of patients. From this standpoint, the effective management of inter-organizational relationships requires the elicitation of the network's contribution to the achievement of collective and individual interests, promoting a greater commitment to collaborative practices among partners. Overlooking the egoistic needs of partners may determine an opportunistic participation in inter-organizational relationships. This, in turn, undermines the viability of the collaboration.

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