A Conceptual Model of Nurses' Workplace Social Capital: A Theory Synthesis

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Abstract

Background: Research has confirmed the importance of workplace social capital in the nursing workforce. It is necessary to integrate the mounting empirical evidences about nurses' workplace social capital into a scientific collection to provide a comprehensive presentation of this concept which can be a conduit for furthering research and advancing the practice of nursing management and leadership. The purpose of this paper, therefore, is to discuss the process of developing a conceptual model of nurses' workplace social capital, an effective and concise approach to illustrate a scientific phenomenon.

Methods: The model of nurses' workplace social capital was developed following Walker and Avant's strategy of theory synthesis. Empirical evidence relevant to nurses' workplace social capital was synthesized by systematically examining the existing literature. PubMed, CINAHL, Web of Science and Google Scholar were searched periodically from October 2017 to July 2020.

Results: Our proposed conceptual model lays out the determinants and outcomes of nurses' workplace social capital and specifies the relational statements among these concepts. Nurses' workplace social capital is influenced by the organizational and individual determinants shaped by multiple layers of sub-concepts. The development and implementation of nurses' workplace social capital has three themes of consequences: 1) nurses' outcomes; 2) patients' outcomes; and 3) organizational outcomes. All the concepts and statements have been organized and aligned with the principles of "inventory of determinants or results" and "theoretical blocks".

Conclusion: Our theoretical synthesis offers a comprehensive picture of the current knowledge of nurses' workplace social capital. Efforts should be dedicated to evaluating, revising, and revamping this newly developed model based on future empirical evidences. Our synthesized conceptual model is the segue to more comprehensive studies about nurses' workplace social capital. Interventional programs for the development of social capital can be structured based on the identified determinants.

Introduction

The healthcare industry is a complex and yet an adaptive system [1]. Nurses comprise the majority of healthcare professionals in any healthcare organization and weave their relational networks in their organizations through their interactions among themselves and with the other healthcare providers. These relational networks have been described as "workplace social capital" or "organizational social capital". The global intensification of work-life and the importance of the quality of work environment on the workforce have put an unprecedented attention on workplace social capital [2].

Research portends the positive and promising influences of nurses' workplace social capital [3, 4]. The value of findings from single studies is nil if the knowledge gained is not integrated into a network to present a more comprehensive understanding of the reported phenomenon [5, 6]. Despite extensive single studies on the concept of nurses' workplace social capital, there is a lack of an evidence-based on its comprehensive presentation. A conceptual model (a graphic form of theory), that is based on the

synthesis of previous work provides an effective way to depict and to develop a deeper understanding of the nurses' workplace social capital [6].

Background

The term "social capital" was originated from the domain of sociology and is regarded as an important element for organizational success through the networks of relationships [7]. Several social scientists have made significant contributions to the development of social capital; however, Bourdieu was the first who formally defined this concept in his 1986 publication entitled "*The forms of capital*". He defined the concept of social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition - or in other words, to membership in a group" [8]. About a decade later, Putnam introduced the notion of social capital to the field of empirical studies [9, 10]. Various dimensions with shared attributes have been proposed by scholars based on their interests in different facets of this phenomenon [11]. In the field of nursing, Read [12] first coined the term "nurses' workplace social capital". Xu et al. [4] expanded on this concept to capture the contemporary changes, e.g. diversity in the demographic structure of the nursing workforce, or the assumption of more autonomy in the delivery of healthcare services by the nursing professionals.

An abundance of research findings has illustrated the considerable influence of nurses' workplace social capital on nurses' mental and physical well-being, quality and efficiency of patient management and the overall healthcare organizations [13-15]. Despite the extend of research on the workplace application, the theoretical work on this phenomenon is still in its infancy. Therefore, it behooves the academic nursing to contribute to theory construction of the nurses' workplace social capital; theories are the integral components of research and they can increase merits and values of scientific findings [5]. Model construction permits concepts and statements to be arranged into a graphic form and can concisely and effectively demonstrate a phenomenon [6]. The aim of this paper, therefore, is to develop a conceptual model of nurses' workplace social capital on which a framework for future research and practice can be based.

Methods

The approach adopted to develop this model is based on the theory synthesis proposed by Walker and Avant [6]. This strategy enables to transform the results of empirical studies about a phenomenon of interest into an integrated whole; in other words, it brings the pieces of knowledge together in a logical way to form a more useful and coherent presentation. It is considered a step beyond the concept analysis and a specified approach for development of a theory. The process of theory synthesis consists of three iterative steps: specifying the focal concept(s), identifying factors related to the focal concept(s) and their relationships, and constructing an integrated presentation [6].

Theory synthesis is grounded in empirical evidence. In this paper, literature served as the source for synthesis of the theory in which the notion of nurses' workplace social capita was grounded. The databases of PubMed, CINAHL, Web of Science were searched, and Google Scholar search was used without time limitation, to identify relevant publications. Search strategies were developed based on the combinations of search terms "social capital", "nursing", "nurses" and "nurs*" with proper Boolean operators. We began our literature search by restricting findings to full-text, peer-reviewed English journals. The identified publications were scanned by their titles and abstracts. The selected publications were vetted according to the aim and process of the theory synthesis. Reference lists of eligible articles also were checked to identify additional sources of information. Different types of studies addressing nurses' workplace social capital, including quantitative, qualitative and theoretical, were used to draw evidence for the development of the model based on the principles of a theory synthesis. The initial search was conducted in October 2017 and the literature review was conducted periodically until July 2020 to refresh and gather new information.

Results

Assumptions are beliefs about a phenomenon or an event acting as a premise to understand a theory [5]. The four assumptions that were the pillars of our work in knowledge synthesizing and model construction of the nurses' workplace social capital theory are: 1) The essentiality of and the necessity for a comprehensive understanding of this phenomenon before interventions; 2) The necessity of a comprehensive understanding of the constitution of nurses' workplace social capital itself, the potential determinants for its occurrence and the ensuing outcomes; 3) A conceptual model with a graphic display, supported by empirical evidences, can help to produce a compact representation of a phenomenon which could enable to form a framework for future investigations and practical applications; and 4) The necessity for a continuous evaluation of nurses' workplace social capital to propel the evolution of the model in response to the rapid changes in the profession of nursing.

The focal concept of the conceptual model

Focal concept(s) specification is the first step in the process of theory synthesis. The focal concept of "nurses' workplace social capital" was specified as the beginning of developing our conceptual model. We justified our approach because the workplace social capital is a relatively new concept in the field of nursing and yet, it increasingly has gained traction and importance in influencing work-life of the nursing profession.

Relational networks (structure of relational networks) and the assets embedded in these networks (e.g. trust, reciprocity) are the key attributes to social capita; the attribute of relational network indicates the "doing" among people who are weaving the fabric of workplace social capital, whereas the assets suggest the "feeling" among them [2, 16, 17]. These theoretical notions have been adopted by researchers in the field of academic nursing, indicating their validity and applicability within the concept of nurses' workplace social capital [14, 18–20]. Meanwhile, nurses' workplace social capital can be classified into

three types, bonding, bridging, and linking. Bonding and bridging in the context of social capital describe relationships established within and/or among groups at the same professional and power level and, therefore, is regarded as horizontal social capital; in contrast, linking social capital represents relationships across different strata of power and is considered vertical social capital [4, 14, 21]. The diagram of the constitution of this focal concept is depicted in Fig. 1.

Related factors and relational statements in the conceptual model

The second step in the process of theory synthesis is to identify factors that are related to the focal concept and to analyze how these factors influence each other; while, the third step is to logically organize all the concepts and statements in a diagrammatic form [6]. The ideas of "inventory of determinants or results" and "theoretical blocks" are the underpinning principles of these two processes [6, 22]. We also benefitted from Miller's theory of human thought and cognition [23] to implement the second step in our theory synthesis. Social capital is the subjective perceptions of individuals about their relationships with others at work; in other words, social capital can be interpreted as a conglomerate of the complex interactions among our thoughts, perceptions, and cognitions about our work environment. According to Miller, emerging cognitive events such as nurses' workplace social capital, arise when certain existing inputs (determinants) lead to outcomes. Therefore, we have arranged all the influencing factors on social capital under the themes of inputs (determinants), events (nurses' workplace social capital) and outcomes, and have specified their relationships

(Fig. 1).

Accordingly, we developed a template to record the summarized empirical evidences in which the "Focal Concept (event)" was set in the middle column, while "Inputs" (determinant) and "Outcomes" were placed into the left and right columns, respectively. We identified the related concepts by reviewing the selected literature and then classified these concepts under the categories of Event, Inputs or Outcomes, per their content meaning and conveyed membership. Furthermore, similar but less general, sub-concepts were collapsed into more comprehensive summary concepts to reach the parsimony of the newly synthesized model. For example, different types of leadership and overall leadership quality were categorized under the summary concept of "leadership". This summarized concept then was grouped under the high-order concept of "organizational factors" along with sub-concepts of "nurse management", "workplace activities" and "hospital type".

Similarly, relationships between inputs/outcomes and the focal concept were collapsed and classified to higher-order relational statements. Five major relational statements, illustrating the relationships among these related concepts and the focal concept, were proposed for our conceptual model. These related concepts and relational statements are discussed below.

Determinants of nurses' workplace social capital and their relationships

The first recommended relational statement in our proposed conceptual model is the organizational factors that influence the development of nurses' workplace social capital. In the nursing literature, two types of leadership have been described as the determinants of nurses' workplace social capital: 1) Transformational leadership has been recognized as a strong predictor of nurses' workplace social capital [24]; 2) Authentic leadership has been identified as a significant influencer of workplace social capital [25]. Additionally, research suggests that overall leadership quality significantly influences workplace social capital over time [26]. Amicable and situation-responsive nurse management at a unit has a positive and chronic influence on the development of workplace social capital [27].

Nurses' workplace social capital is influenced by workplace behaviors and/or activities. We would like to use the term "Effect Modifiers" to describe the variables that influence, either negatively or positively, the nurses' workplace social capital. For example, communication can be classified as an effect modifier of the nurses' workplace social capital; poor quality and ineffective communication at work can quickly destroy nurses' workplace social capital [18]. The style of communication, which endorses understanding and effective comprehension of messages, can strengthen the nurses' workplace social capital. The impact of constructive communication, as a positive effect modifier, was reported by Vardaman et al. [28]. The authors reported on the long-term positive effects of the communication tool, Situation-Background-Assessment-Recommendation (SBAR) on nurses' workplace social capital [28].

The spectrum of effect modifiers of nurses' workplace social capital is broad and not exclusive to communication. For example, visual management tools in nurses' daily work have been reported to positively modify nurses' workplace social capital [29]; research has supported the positive effects of the organizational intervention of participatory workshops on the topic of utilizing assistive devices in patient handling, or group-based physical exercise on nurses' workplace social capital [21, 30]. Finally, urgency, efficiency, and immediacy of delivery of healthcare services can be viewed as a positive effect modifier on nurses' workplace social capital. Research supports the notion of higher workplace social capital among nursing professionals working in critical care hospitals compared with those working in community or academic hospitals [31].

The second recommended relational statement in our proposed conceptual model is the individual factors that influence the development of nurses' workplace social capital.

Shin and Lee [32] reported that the score of workplace social capital varied among nurses' groups with different levels of education, years of experience and years in the present unit. The scores of workplace social capital perceived by nurses with a graduate degree, providing direct care (work role) and having full-time employment status were lower than those who had bachelor's education, provided non-direct care and had part-time/casual work employment [31]. Moreover, employees with higher emotional intelligence are more dexterous in establishing constructive communication [33], in their interactions with others [34] and in developing interpersonal relational networks [35]. The positive influence of emotional intelligence on workplace social capital has been confirmed in the nursing population [24].

Outcomes of nurses' workplace social capital and their relationships

Eighteen outcomes, 17 positive and one negative, were identified in the nursing literature. These outcomes were then collapsed under the summary concepts to reach theoretical succinctness. Three summary concepts were abstracted from the more concrete outcomes: nurses' outcomes (positive and negative), patients' outcomes and organizational outcomes (Fig. 1).

The third relational statement of the conceptual model is nurses' outcomes, which is influenced by the nurses' workplace social capital. The less general concepts, under the summary term "nurses' outcomes", are 13 positive and one negative outcomes. The 13 positive nurses' outcomes range from attenuation of emotional exhaustion, lower burnout and mental distress, increase in healthy self-behaviors, improvement in job satisfaction, strengthening the intention to stay, knowledge sharing, organizational commitment, professional commitment, motivation to improve professional capabilities, willingness to mentor/be mentored, adoption of evidence-based practice and prevention of occupational injuries and accidents; while, social exclusion is the only negative outcome of nurses' workplace social capital.

Nurses' workplace social capital is negatively related to emotional exhaustion and burnout [15, 36]. Additionally, it may relieve nurses' mental distress and can improve nurses' health status [14]. Furthermore, nurses' workplace social capital is positively associated with job satisfaction [15, 19, 32] and intention to stay [19]. Nurses who perceive higher workplace social capital are more likely to share their knowledge with others [37] and develop higher organizational and professional commitments [38, 39]. Meanwhile, they have the willingness to improve their professional capabilities [38], mentor/be mentored at work [40] and adopt evidence-based practices [7]. Finally, workplace social capital is described by nurses as a major strategy for prevention of occupational injuries and accidents [3]. However, workplace social capital is also reported to result in social exclusion; strong bonding among the nursing staff can create strong relational ties that may influence their acceptability of newcomers [41, 42].

The fourth relational statement is patients' outcomes which is influenced by the nurses' workplace social capital. "Patients' outcomes" is a summary of two sub-concepts. First, a higher nurses' workplace social capital leads to a better quality and more efficient delivery of care [13, 15, 32]. Second, nurses' self-report of patient safety also is indicative of the positive impacts of high nurses' workplace social capital on patients' outcomes [37].

The fifth relational statement is organizational outcomes which is influenced by *nurses' workplace social capital.* Under the summary concept of "organizational outcomes" we have listed two distinct outcomes, better clinical risk management and improved unit effectiveness. Nurses' workplace social capital is positively correlated with the betterment of clinical risk management [43, 44]; also, improved unit effectiveness, which has been defined as the capability of a unit to effectively and timely provide healthcare services, is positively correlated with the nurses' workplace social capital [13].

An integrated representation of the conceptual model

Finally, all the related concepts and relational statements were integrated into four "theoretical blocks" [6, 45] in our conceptual model (Fig. 1). This conceptual model illustrates the determinants, constitution and outcomes of nurses' workplace social capital and specifies the relational statements among these concepts. Our conceptual model, with both graphic and narrative presentations, provides an updated and comprehensive information about nurses' workplace social capital. The definitions of the main concepts in the synthesized conceptual model are presented in Table 1.

Nurses' workplace social capital (Block 3) may be influenced by both organizational factors (Block 1) and nurses' individual factors (Block 2). Organizational factors include leadership (transformational leadership, authentic leadership and leadership quality), nurse management, workplace activities (communication, daily visual management tool use, participatory workshops and group-based physical exercise) and hospital type. Nurses' individual factors comprise the less general concepts of educational level, years of experience, years in current unit, work role, employment status and emotional intelligence. We also have demonstrated the interactions between these two categories of determinants, marked by a double arrow line in the model. These interactions are indicatives of the mutual supplementary effects of organizational factors and individual factors.

Eighteen variables were identified as the less general outcomes, which were classified under three themes: nurses' outcomes, patients' outcomes, and organizational outcomes (Block 4). The improvements in nurses' workplace social capital can lead to 17 positive outcomes. However, the strengthening of bonding social capital may lead to social exclusion.

We have demonstrated the possible interactive relationships among these variables; we emphasize the term "possible" because most of the outcomes were identified from cross-sectional studies which have limitations in discerning the symmetry (direction) of a statement [25, 32, 38, 40, 44]. Future prospective studies can either support or refute our proposed model.

Discussion

We conducted a theoretical synthesis and developed a theoretical model to amalgamate the current knowledge about nurses' workplace social capital. The theory synthesis process, proposed by Walker and Avant [6], was used as the blue-print to develop our conceptual model. This model has four distinct, but interrelated blocks, with specified relationships among them. To our knowledge, this is the first theoretical model of nurses' workplace social capital grounded on empirical evidences through an intensive literature review.

A synthesized model can be applied in research, practice, and teaching in nursing science [6]. This synthesized model may point some clues for further research; for example, other potential determinants may be explored through both quantitative and qualitative investigations, especially for nurses' individual factors. Or, new concepts and statements could be entered into the conceptual model with further

development of this theory and accumulation of more evidences. The other venues for advancing research in this arena include: 1) Assessment of interactional effects of the two categories of determinants on the focal concept. 2) Further assessment of the mediators between the determinants and nurses' workplace social capital; more attention may be added to mediators and moderators between related variables and nurses' workplace social capital; and 3) Implementation of longitudinal and interventional research to confirm the causal relationships among the focal concepts and outcomes.

This conceptual model also can be applied in nursing practice. When seeking to improve the relevant outcomes in the healthcare organization, nursing administrators could try to achieve their goals through interventional programs on nurses' workplace social capital with consideration of the determinants listed in this model. Meanwhile, the compromising outcome of social exclusion among the nursing workforce should be noted. However, an appropriate level of bonding may increase "togetherness" among group members. The balance between restricting and formulating bonding social capital among nurses needs further exploration. Additionally, this model also is conducive to teaching programs for nursing students and clinical nurses. The concept of workplace social capital is a subjective and abstract concept; therefore, it is not easy to illustrate and understand its whole realm which involves the constitution of the construct, its related concepts and the interrelationships among them. Our proposed summarized conceptual model with graphic and linguistic presentations makes the process of teaching and learning more manageable.

The process of developing our conceptual model has some limitations. First, the literature search was restricted to English language, peer-reviewed journal articles. Thereby, some information about nurses' workplace social capital could have been missed. Second, the body of evidence of influencing factors is limited because we only focused on the nursing literature. Identifying determinants of workplace social capital in the other disciplines should be considered in future studies as nurses' workplace has similarities with other work settings. Further, the hypothesized interactional relationships (marked by the double arrow line in the model) need empirical confirmation. Despite the limitations of our manuscript, our work is the segue to future research and new findings and could provide new insights into the theory construction of nurses' workplace social capital.

Conclusion

In recent years, the precipitous attention of nursing scholars and researchers to nurses' workplace social capital has made it necessary to capture a comprehensive insight into this phenomenon. Our newly synthesized conceptual model provides an effective way of approaching this goal. The strategy used for developing our conceptual model of nurses' workplace social capital is the theory synthesis proposed and developed by Walker and Avant [6]. Our proposed model can be used as a foundation for further research based on identified gaps of current knowledge in the literature and the proposed propositions. Nursing practices that aim to strengthen nurses' workplace social capital can consider the identified determinants. More studies are required to continuously enrich the current pool of evidences to address

complexity of this conceptual model [6]. New knowledge should be integrated into our proposed model based on the evidences from model testing and the expansion of empirical investigations.

Declarations

Ethics approval and consent to participate

Not applicable

Consent for publication

Not applicable

Availability of data and materials

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study

Competing interests

The authors declare that they have no competing interests

Finding

None

Authors' contributions

JMX conceptualized and conducted the literature search. Both authors drafted and approved the final manuscript.

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Tables

Table 1
Definitions of main concepts in the model of nurses' workplace social capital

Concept	Definition
Determinants	Factors that can influence the development of nurses' workplace social capital, including, but not limited to, the two summary concepts - organizational factors and nurses' individual factors, which were generated from the less general concepts from empirical evidence.
Organizational factors	Influencing factors related to organizations, an umbrella term to capture the less general concepts of leadership, nurse management, workplace activities and hospital type.
Individual factors	Influencing factors relevant to individual nurses grouped by the less general concepts of education level, years of experience, years in current unit, work role, employment status and emotional intelligence.
Nurses' workplace social capital	"A relational network configured by reciprocated respectful interactions among nursing professionals and between the other healthcare professionals. These interactions are characterized by the norms of trust, reciprocity, shared understanding and social cohesion" [13]. It consists of two components (structural and cognitive) and three types (bonding, bridging and linking).
Structural social capital	The structure of social capital (what people do; the extent and intensity of their social interactions in the relational network).
Cognitive social capital	The assets embedded in and mobilized by the relational structure (what people feel: e.g., trust, reciprocity, shared understanding, social cohesion).
Bonding social capital	The relationships among people with similar positions and functions at work (nurses to nurses).
Bridging social capital	The relationships between people with different positions and functions at work (nurses to physicians, receptions and other staff).

Table 1
Definitions of main concepts in the model of nurses' workplace social capital (continued)

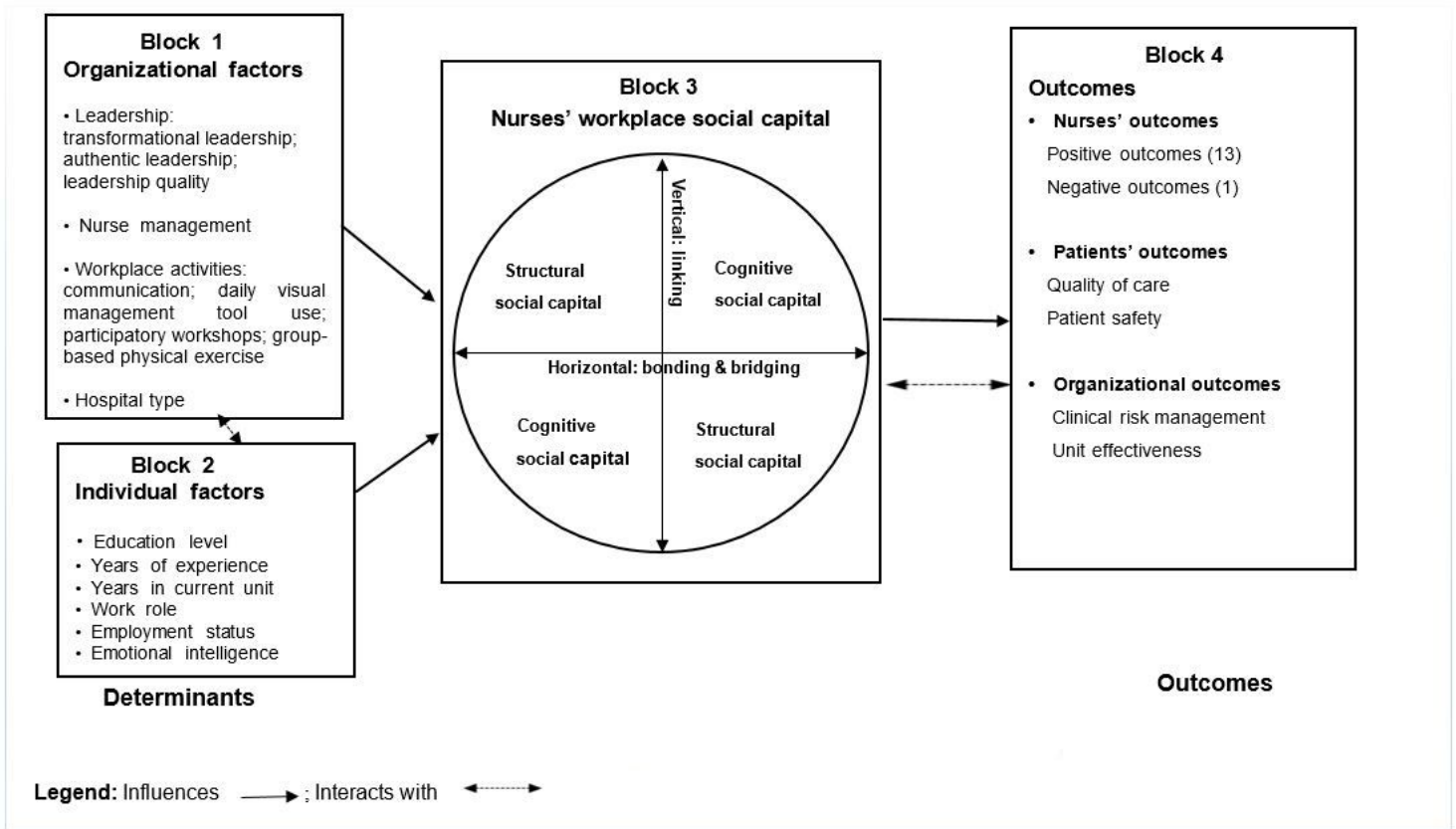| Concept	Definition
Linking social capital	The relationship between people who are at different hierarchical level (nurse to head nurses).
Vertical social capital	Same as linking social capital [2].
Horizontal social capital	The sum of bonding and bridging social capital [2].
Outcomes	Results of the development of nurses' workplace social capital, incorporating three summary themes - nurses' outcomes, patients' outcomes and organizational outcomes which are collapsed cross less general variables from empirical studies.
Nurses' outcomes	Results related to nurses which include more concrete positive outcomes (e.g. increase of job satisfaction, professional commitment) and one negative outcome (social exclusion).
Patients' outcomes	Results relevant to patients: the increase of quality of care and patient safety.
Organizational outcomes	Results pertinent to healthcare organizations: the improvement of clinical risk management and unit effectiveness in healthcare organizations.

Figures

Figure 1

Conceptual model of nurses' workplace social capital