

Tandem Care: A Concept Analysis

Leonard Ivan T. Melana

College of Health Science, Ifugao State University, Lamut, Ifugao, Philippines

Abstract Human caring is universal; however, existing theoretical assertions are geared towards the patients and seldom for the nurses. The concept of “tandem” resolved this dilemma, but there are deficient definitions and applications of nursing concepts. Hence, a concept analysis using Walker and Avant (2011) is performed to provide a clear description of “tandem” integrated into nursing practice. In the study, the concept of tandem care has three critical attributes, including (1) interactive care, (2) personal care, (3) synchronous care, (4) patient-centered care. Before the occurrence of tandem care, the following attributes are necessary: (1) knowledge about the tandem care; (2) collaboration and communication; (3) engagement to self-care. On the other hand, both quantitative and qualitative methods can be utilized to test the concept empirically. Consequently, applying the principles of tandem care in nursing can result in healthy patients, nurses, and relationships among them. Further studies about the concept of tandem care are advised to verify and generate nursing knowledge that can be used as the basis for practice, education, and research.

Keywords Tandem care, Interactive care, Personal care, Synchronous care, Patient-centered care

1. Introduction

Difficulties arise, however, an attempt to rationalize nursing as an extension of caring human relationships as a result of theoretical evolution and paradigm shifts. While nursing is built on the basic premise of its ubiquitous existence in the society where all individuals are expected to care for each other (Watson, 2009; Bailey, Abdullah, et al., 2007), the foundation of caring and its practice is geared towards the benefit of the patients (Khalifehzadeh, Jahromi, & Yazdanmik, 2012; Longo, 2011; Turkel, Lynn, & Raton, 2015; Blum, 2014; Hernandez, 2009). Consequently, there is a wide range of interpretations of caring in nursing, but few address the nurse-patient relationship's authenticity and humanness. Although the nurse-patient relationship is a well-established topic in nursing, it focuses only on the health transformation of the patients (Granados Gamez, 2016; Halldorsdottir, 2008; Deane & Fain, 2010; Peplau, 1997). Nevertheless, by integrating new concepts in nursing from other disciplines, the knowledge and practice gap may be resolved. Hence, the author explored the concept of "tandem" and translated its content and application in nursing. Since the concept of "tandem" is poorly discussed in nursing, concept analysis is performed to develop a clear meaning of the concept in the nursing context.

In the concept of tandem care, all individuals must be literate with caring relationships. Watson (2009) posited a

lack of human caring in each person's personal and professional lives and both systems and society. This position is grounded based on the relational ontology of being-in-relation and connectedness of all. There are several theories rooted in human caring, which include the synergy model and theory of reciprocity. However, the relationship is seen as a one-way process where the nurses' role is always satisfying the needs of the patients and the families (Hardin, & Hussey, 2003; Khalifehzadeh, Jahromi, & Yazdannik, 2012; Falk, & Fischbacher, 2006; Sandhu, Arcidiacono, Aguglia, & Priebe, 2015). Moreover, nurses are humans too, and they also need care from others such as the patients and the community (Weyers, Peter, Boggild, Jeppesen, & Siergist, 2006; Erlen, 2004; Blum, 2014; Turkel, Lynn, & Raton, 2015).

Recently, studies show that when we neglect ourselves, it may result in burnout, decrease morale, job exit, the nursing shortage, and poor patient care (Blum, 2014, Turkel, Lynn, & Raton, 2015, Hernandez, 2009). While it is innate for nurses to care for their patients, they also have health care needs that are reciprocated beyond monetary value. Nurses are obliged to provide care to others, but related theories and legal reforms also lack to mandate their clients to care for them.

Subsequently, looking into how the concept of "tandem" through the various fields, the principles underlying it may serve as a solution so that both the nurse and patient will care for themselves and care for each other. For instance, discussions of the concept are reviewed in psychology, education, management and leadership, nursing, and science. The concept of "tandem" is generally used to explain significant systems, models, and devices to strengthen and

* Corresponding author:

ivantmelana@gmail.com (Leonard Ivan T. Melana)

Received: Apr. 1, 2021; Accepted: Apr. 28, 2021; Published: May 15, 2021

Published online at <http://journal.sapub.org/nursing>

improve relationships, services, and interventions. Similar concepts in "tandem" are discussed in psychology and education. Both fields relate "tandem" to a strategy to enhance partnership (Ritteinger, & Saver, 2000; Tandem Exchange, 2017) and improve mutual communication through principles of autonomy and reciprocity (de Vries et al., 2013; Franzmann et al., 2010). In management and leadership, the concept of "tandem" is specified through a model that involves an integrative and empirical clinical supervision method (Milne, & Dunkerley, 2010; Milne & Janus, 2005). The model enables to promote interdependence in facilitating a meaningful relationship. Consistent with strengthening human relationships, the concept of "tandem" in nursing describes a simultaneous caring of a mother to her children (Bryant, 2012; Flower, 2003; Van den Berg, & Ball, 2008). Moreover, the concept of "tandem" is used in various fields of science to describe supportive devices to optimize and assist structures (Agarwa et al., 2015; Jacobson et al., 2015; Kmonicek et al., 2009; Lee, Yu, & Su, 2014).

Based on the literature search conducted, discussions about "tandem" in nursing are deficient. Hence, this study aims to combine the information from various sources of knowledge through concept analysis. With this, the author came up with a distinct description of tandem care through identifying attributes, antecedents, and consequences of the concept. Ultimately, a new concept will enable further developmental studies emphasizing the importance of the tandem care approach in nursing practice, education, and research.

2. Methodology

2.1. Concept Analysis

Conducting a concept analysis is used to examine the concept of tandem care in the study. Concept analysis is a method that can contribute to a body of knowledge by systematically analyzing data from different sources (Bladwin, 2008; Duncan et al., 2007). The purpose of concept analysis is to clarify, refine, define, analyze, and develop concepts that will serve as a basis for knowledge development (Baldwin, 2008; Walker, & Avant 2011). Specifically, the study utilized the method of Walker and Avant (2011). This method of concept analysis is composed of an eight-step process: selecting a concept; determining the aims or purposes of analysis; identifying all the uses of the concept; determining the defining attributes; identifying a model case; identifying borderline, related, contrary, and invented cases; identifying antecedents and consequences; and defining empirical referents. This method allows the formulation of a precise definition of the given concept for use in nursing theory development. Moreover, as communication tools, concepts are critically analyzed to clarify their meaning and, with a clear understanding of their meaning, appropriately used (Baldwin, 2008; Walker, & Avant, 2011). Consequently, the analysis will provide direction for developing a framework or model after the

clarification of the tandem care concept.

2.2. Search Method

The search term "tandem" entered through EBSCO hosts to identify sources from a variety of disciplines. The search was limited to the English language, considering subject headings and thesaurus terms. The search terms nursing and care were subsequently added to refine the results. Article abstracts were reviewed, and those that did not discuss and define "tandem" were excluded from the analysis. It was noted that there is no single word definition of tandem care; hence, sub-concepts are defined separately. Additionally, a Google search was done considering references from dictionaries, thesauruses, and reviewed materials to ensure additional significant literature and uses of the concept.

3. Definition and Uses of Tandem

To understand the meaning and the uses of the concept being examined, "tandem" is viewed from several perspectives (Walker & Avant, 2011). The initial inquiry was made using standardized dictionary definitions. Subsequently, literature searches were conducted to look into the usage of the concept considering other disciplines such as education, psychology, management and leadership, physical and health sciences, biology, medicine, and nursing.

3.1. General

The origin of "tandem" is traced back to the year 1975. According to the Online Etymology Dictionary (n.d.), the noun "tandem" means a carriage pulled by horses harnessed one behind the other. It is a Latin word *tandem* meaning at length or at last from *tam* ("so") and *-dem*. In English, it is applied humorously (by someone who knew Latin) to two horses harnessed "at length" instead of side-by-side (Wiktionary, 2017). By the year 1884, it was transferred to bicycles with two seats. At present, the word "tandem" may refer to a noun, an adjective, or an adverb. With this, "tandem" means an association or a partnership (Dictionary.com, 2017), and it is used to describe a group of people or more arranged one behind or used or acting in conjunction (Merriam Webster Dictionary, 2017).

To provide a more explicit description of the word "tandem," its synonyms, related words, and adjectives were also obtained. Accordingly, "tandem" is synonymous with the following words: partners, connection, cooperation, combination, synchronism, synergy, union, and series (Thesaurus.net, 2017; Roget's 21st Century Thesaurus, 2017). It is also related to a bicycle-built-for-two, an aggregate or a team, a matched set, and a kayak pair (Thesaurus.net, 2017; Roget's 21st Century Thesaurus, 2017). Adjectives in tandem include excellent, endless, complex, similar horizontal, heroic and double standard (Thesaurus.net, 2017; Roget's 21st Century Thesaurus, 2017). The antonyms of the tandem are: single, individual, unshared, and one-man (Power Thesaurus, 2017).

On the other hand, the word “care” originated before the 12th century, and it means “charge, supervision under a doctor’s care” (Merriam-Webster’s 2000, p.172). This definition of care justifies why its concept was commonly utilized in nursing. Consequently, caring is a word that is often used to describe the nursing profession (Morrison, & Burnard, 1997). According to Watson (1979), caring is central to nursing; hence involves preserving human life through the health promotion, and disease prevention, and rehabilitation of health among individuals, families, and community. Consequently, caring is both a discipline and a profession, involves the nurturing of persons living to care and growing in caring. (Boykin & Schoenhofer, 2013).

Although several types and theories of care in nursing were already present, “tandem care” has never been conceptualized. While the definitions of “tandem” are robust in the following literature searches, its integration to nursing is deficient. Hence, the author examined various meanings and usage of the “tandem” concept in other disciplines and then later integrated the concept into nursing care.

3.2. In Education

In education, “tandem” is used to describe a strategy for language acquisition. Tandem learning involves a language-based communication activity between native speakers with different languages communicating regularly (Karjalainen, Rusk, Porn, & Bjorkskog, 2013; Woodin, 2010; O’Rourke, 2005; Brammerts, 2003; Cziko, 2004). Tandem arrangement aims to increase the understanding of words through the discussion of the participants. It also maximizes the interaction of the participants resulting in increased language competence.

According to Brammerts (2003), the two essential tandem principles are reciprocity and autonomy. Concerning reciprocity, “language learning occurs in partnership in which each partner contributes knowledge and skills that a person wishes to acquire and in both partners simultaneously support each other’s learning (Cziko, 2004). Consequently, the tandem partners share an equal amount of time and effort to support their learning needs. Despite the mutual relationship in tandem, the learner’s autonomy is also taken into consideration. Autonomy refers to a learner’s capacity for critical self-evaluation and self-determination (Schwienhorst, 2010). Specifically, it implies that the individual learners decide what and how they want to learn and monitor their learning (Karjalainen, Rusk, Porn, & Bjorkskog, 2013). The participants can choose the purpose, context of learning materials, methods, practical arrangements, and evaluating progress. However, autonomy should not be confused with working independence, alone or without a teacher (Karjalainen et al., 2013), but rather doing oneself (Little, 2007). Thus, the learners share common goals but at the same time recognize their own personal and learning needs.

Tandem learning started during prehistoric times due to a necessity to learn other people’s language for marriage,

religion, and trade. It first appeared in Europe in 1968 and was first put into practice as part of a French-German youth exchange program (Cziko, 2004). The teaching-learning process involved actual face-to-face contact. However, recent technological development allows interspace and online group discussion. Moreover, tandem learning is based on a socially interactive process that occurs in formal and informal settings.

Grounded by the principles of reciprocity and autonomy, the literature presented several benefits of tandem learning. First, the learners become more engaged in the learning process (Bruen, & Sudhershnan, 2016; O’Rourke, 2005; Cziko, 2004). It acknowledges the two-way process of teaching-learning where the individuals in pairs or groups are learning from each other. Consequently, both partners are more motivated and interested in participating in the activities as their learning needs are recognized. Additionally, learning becomes enjoyable, pleasurable, and fulfilling (Bruen, & Sudhershnan, 2016; Karjalainen et al., 2013). The learners experience immense support from each other as they actively work together to advance their knowledge and skills.

On the other hand, constant interaction enables them to be sensitive to the needs of others. Given the close connections between language and culture ((Bruen, & Sudhershnan, 2016), the participants will be interculturally competent (Woodin, 2010; Cziko, 2004; O’Rourke, 2005). Also, it improves communication exchanges between the partners by determining the factors that may contribute to language development. Overall, these perspectives of tandem learning involve mutual but independent learning, which makes the interaction more meaningful.

3.3. In Psychology

In psychology, “tandem” is related to the communication model by Rittinger & Saver (2000). The tandem model has mainly been applied in organizational psychology (Haberstroh, Neumeyer, Krause, Franzmann, & Pantel, 2011). However, it is used explicitly in enhancing communication among patients with dementia (Franzmann et al., 2010; Haberstroh et al., 2011; de Vries, 2013). This model involves a switching relationship between the sender and receivers as they convey the content of their message.

Watzlawick posited that every communication has content and relationship aspects (as cited by Haberstroh et al., 2011, p. 406). The content aspect is the type, meaning, and amount of information delivered, while the relationship aspect comprises the emotional values of communication. Both partners must agree on the content and relationship to avoid conflicting information.

Also, the tandem model includes several steps of information transmission. First, there is a presentation of the message by the sender to the receiver. With this, the receiver pays attention to the information, tries to comprehend it for him/ her to realize the meaning of the conveyed information. The last step is remembering before the receiver gives

feedback to the sender, and the communication process will start again with reversed roles.

It is worthwhile to emphasize the principles and issues concerning information transmission in a tandem model of communication. While communication involves social and formal including informal interactions between people (de Vries, 2013), cognitive deficits such as patients with dementia have difficulties in exchanging information with their caregivers (Franzmann et al., 2010; Haberstroh et al., 2011). However, the tandem model focuses more on comprehension of the relationship aspect than the content aspect to promote more effective communication. For example, the caregiver values more the sincerity of the partnership between the patients with dementia by supporting the remaining strengths of the patients and bypassing occurring weaknesses in communication. Moreover, there are concerns about the systematic and individualized communication strategies improved communication among people with dementia to easily express their needs, preference, and ideas (de Vries, 2013).

For this reason, the tandem model makes the caregivers more sensitive to the needs of the individuals by reviewing the patients' previous knowledge, value experiences, and confirming individual strategies. Through tandem training and interventions, the caregivers' competencies relevant for communication in dementia care were enhanced, and their burden was reduced. Also, the quality of life of the patients is improved. Hence, the caregivers in the tandem model need to become aware of the needs of the individuals, create an authentic relationship and be mindful of the information delivered for more meaningful feedback.

Furthermore, Tandem Exchange (2017) compared the model to riding a bicycle in tandem where synchronized collaboration between the client and the therapist will produce efficient and successful results. The group performs counseling and psychological evaluation to develop self-awareness and empower their clients. Similar to tandem learning, the Tandem Exchange group prioritizes the importance of partnership in exploring underlying feelings. Consequently, it gains the freedom for both partners to work, learn, play, and love.

3.4. In Management and Leadership

Supervision is a complex role of managers and leaders. However, through applying the tandem model in practice and administration, the organization's ultimate goal can be achieved. Hence, "tandem" in management and leadership is defined as an accessible, integrative, and empirical way of modeling clinical supervision (Milne, & Dunkerley, 2010; Milne & James, 2005). The concept views it like two cyclists on a tandem. By analogy, as the leader or the supervisor steers the tandem, the supervisee follows (Milne & Dunkerley, 2010). The model aims to provide "learning and development" to the supervisee by performing a needs analysis, formulating mutually learning objectives, and implementing specific learning methodologies and

evaluations.

Moreover, the supervisee is expected to have experiential learning as evidence by reflection, conceptualization, and planning. Although the supervisor needs to initiate the action, the tandem can be cycled solo, empowering the supervisee. Moreover, the tandem model of clinical supervision fosters interdependence among the individual to facilitate a meaningful relationship.

Similar to the tandem model of clinical supervision is Watson's peer group supervision model (1973). Both models consider two members who would like to have mutual consultation apart from the peer group forming a "tandem" (Tsu, & Hu, 2013). Through the arrangement, staffs become more sensitive to the needs and difficulties of others as they share common goals increasing the support to each other. However, unlike the tandem model of clinical supervision, there is no designated supervisor in the peer group supervision resulting in an increased partnership by all the staff. Everybody in the group is held responsible for their work exposing themselves to more learning opportunities.

On the other hand, the same model is used to derive the spherical practice model. This model increases the collaboration between the physician and nurse practitioner. It is described as a tandem between a physician and a primary care nurse practitioner, aiming to deliver patient-oriented care (Hermann, & Zabramski, 2005). In this model, the healthcare providers share mutual goals to ensure optimal patient care and outcome. Moreover, through working in tandem with the health care team, the patient, and the family, holistic care can be achieved. Collaboration as the central key to its practice means jointly participation of the neurosurgeon and the nurse practitioner represented by equally sized spheres overlapping each other. Therefore, the interaction represents a multifaceted experience across the continuum addressing both the personal and the organizational needs.

3.5. In Health Science

Tandem is related to musculoskeletal assessment and intervention in the field of health science. Physical therapists, pathologists, and clinical technicians described a tandem stance/ gait and walking test procedure. The tandem stance and walking test are used as diagnostic procedures and interventions for balance control and stability among patients. Accordingly, the tandem stance is a method where both legs, one foot in front of the other, form a line along walking direction to prevent fall using postural control (Teranishi et al., 2011; Jonsson et al., 2005; Suzuki et al., 2017). Specifically, it involves placing the feet in a toe-to-heel position along the midsagittal plane, with the toe of one foot touching the heel of the other, and is laterally unstable (Suzuki et al., 2017). Although a narrow base limits the degree of support, stability is increased by placing the dominant foot behind and parallel to the other foot bearing the body's weight. Thus, the postural steadiness through tandem stance depends on the inter-leg motor coordination

of both legs.

The use of tandem stance and the walking test was developed in the 1960s as “an ataxia test battery,” modifying the standard Romberg test (Mallinson, & Longridge, 2008). The “sharpened” Romberg test represents an easily implemented diagnostics to assess vestibular function and neuromuscular changes among elderly and pathologic situations. Consequently, it is also used as an intervention to improve gait performance through clinical and rehabilitative programs. Several literature suggests an improved postural steadiness, static balance, decreased force variability, and absence of fall (Dozza et al., 2007; Jonsson et al., 2005; Condon & Cremin, 2013; Howell et al., 2017). Through the simultaneous contractions, strength, and controlled adjustments of relevant muscles, balance is achieved. Additionally, integrating augmented sensory information in tandem stance and walking results in smoothness and efficiency of human movement.

3.6. In Physical Science

The principles behind the interventions and techniques used in physical science aim to make life easier by maximizing the output with minimal input. For this reason, “tandem” relates to a unique feature of a device that enhances the efficiency and effectiveness of results. Mainly, a tandem device is used for maximum power conversion of solar energy (Jacobson, Fjallstorn, Edoff, & Edvinsson, 2015). The device consists of interconnected cells where photo absorbers with gaps stacked on top of each other, increasing the potential photoreaction. Compared to a single-junction device, the construction of a tandem device provides a standard solution to the solar-spectrum mismatch by hastening reactions to obtain maximum overall power.

Like the tandem construction used in photo-driven catalysis, the same structure is built to optimize device efficiencies in organic electronics. Tandem light-emitting electrochemical cells possess several superior advantages: simple device structure, low operating voltages, and balanced carrier injection (Lee, Yu, & Su, 2014). The multilayer structures and low-work-function cathodes of the device support low power consumption by inducing oxidation and reducing the emission materials. Hence, the device produces a higher amount of energy while it requires a lesser amount of operational cost.

Further, “tandem” is also used to describe a charged weapon. Tandem charge projectile is an integrated warhead invented to increase the efficiency of detonation (Kramer, & Aschenbrenner, 1989; Rentzsch, Schildknecht, Rudenaven, Lindstadt, & Hahn, 1994). The patented invention consists of a projectile with bore a hole charge and a secondary firing charge located rearwardly. This structure delays the follow-up charge providing safety means to the individual using it. Further, the tandem charge is made of a thin-walled, light material that strengthens portions of the housing and enables transportation and stability in the warhead's flight.

3.7. In Medicine

Technological advancements served as precursors in providing alternative and efficient means of managing complicated medical cases. One of the most improved interventions to decrease mortality among patients with cardiogenic shock is Tandem Heart. Hence, the cardiologist relates “tandem” to a Left Ventricular Assisted Device (LVAD) that mechanically supports circulation indicated for the hemodynamic stabilization (Neuzil, Kmonicek, Skoda, & Reddy, 2009; Agarwal et al., 2015). The Tandem Heart provides a loading and unloading blood device by bypassing circuits between the aorta and left atrium. Through a centrifugal pump placed outside the patient's body, blood circulation is being supported and adjusted accordingly. Hence, evidence from case reports suggests that the use of Tandem Heart appears to provide superior hemodynamic support and improved metabolic functions compared with an intra-aortic balloon pump (Agarwal et al., 2015; Burkhoff, 2006; Neuzil et al., 2009).

3.8. In Biology

Although humans and all mammals belong to the same species, there are significant characteristics that differentiate them. In the study by Fondon, and Garner (2004), tandem repeats are sources of variation to another or between the same species. Thus, “tandem” in biology is associated with an essential part of DNA selection, contributing to an organism's unique and meaningful qualities. A tandem repeat is a directional orientation of multiple and adjacent DNA within a gene responsible for duplication, replication, and mutation (Lovett, 2001; Myers, 2007; Rao, Rodriguez, & Benson, 2005). While duplication and replication are common among organisms, differentiation occurs due to rearrangements of DNA lengths and numbers. The regulation depends on the on and off switching of the gene. However, tandem repeats are prone to a mutation causing strand mispairing; the changes can be beneficial or detrimental to the organisms. For instance, bacterial selection for increased resistance to specific antibiotics can amplify a drug-resistance gene (Lovett, 2001). Hence, the formation of tandem repeats plays a vital role in the evolution of organisms by acquiring the best characteristics due to gene manipulation.

3.9. In Nursing

The concept of “tandem” in nursing is evident; however, it is limited to the discussions on breastfeeding and caring. However, its concept is not theoretically grounded. Hence, the study explored the meaning and use of the word “tandem” in various disciplines.

In nursing, Van den Berg & Ball (2008) defines tandem nursing as a practice of simultaneously caring for two children. Its meaning was elaborated by Flower (2003), wherein the mother is breastfeeding during a subsequent pregnancy. Although there are some issues in tandem

nursing, its benefits outweigh the risk of caring for more than one child at the same time. 61% out of 171 mothers breastfed while they are pregnant, and with this, 38% went on to nurse both the newborn and toddler postpartum (Flower, 2003). Thus, mothers anticipated a positive response if they perform tandem nursing.

Tandem nursing is advantageous to both the mothers and the children (Bryant, 2012). Since tandem nursing involves a mutually desired interaction by the mother and child, it provides psychological benefits. Consequently, the trusting ability of the children is increased, and their level of anxiety is decreased while the mother feels more fulfilled and responsible for her new role. On the other hand, tandem nursing requires the mother to be patient, energetic, and have a personal commitment. Emotional fortitude is necessary to nurse the siblings, and at the same time, the mother needs to be physically healthy to accommodate the nutritional requirements of her and the breastfeeding children. However, nursing two children simultaneously is challenging; it can resolve sibling rivalry by increasing cooperation among the children leading to a peaceful and calming home environment (Hull, 2009). Furthermore, tandem nursing is a selfless act of love and rewarding experience in the life of both the mother and child.

4. Attributes

Defining attributes were formulated from identified themes based on the recessing characteristics found in the literature; hence they help recognize the concept (Walker, & Avant, 2011). These characteristics must be present in a nursing context where the concept is applied. Based on the definition presented, the concept of tandem care has four critical attributes: (1) interactive care; (2) personal care; (3) synchronous care; (4) patient-centered care.

4.1. Interactive Care

Interactive care is an essential attribute of tandem care that emerges from a mutual relationship between the nurse and the patient. A partnership can be observed between the nurse and the patient as they work interdependently and share common goals to achieve optimum health. Through a switching relationship, both of their efforts are reciprocated, aiming to maximize their caring potentials. Hence, both of them shall contribute to promoting a caring environment necessary for satisfying their unique health needs.

While the interaction in tandem is a complex two-way process of learning and development between the nurse and the patient, it can become meaningful through effective communication strategies. In this regard, constant interaction is a need that can be facilitated by either face-to-face physical contact or through interspace and online arrangement. As the contact between the nurse and the patient becomes accessible, it requires them to benefit from the relationship. Overall, interactive care relates to overlapping roles between the nurse and the patient to

support and help each other attain their desired health outcomes.

4.2. Personal Care

Tandem care is also dependent on personal care. Based on the premise, to care for others, the individual needs to care for himself first. Hence, the nurse, as well as the patient, are held responsible for their health. The nurse and the patient have the autonomy to determine their personal needs and decide how they can achieve them. Moreover, they should be capable of critically evaluating their selves through recognizing their unique needs, strengths, and weakness which could make one way or another affect their optimum level of functioning. By keeping in touch with their values, beliefs and practices, and culture, they will become aware of how they do self-care. Thus, personal caring shall empower and motivate them to work together to realize their health goals.

4.3. Synchronous Care

Providing tandem care is a synchronous caring process where there is a simultaneous collaboration instead of competition between the nurse and the patient. Synchronous care requires the nurse and the patient to have coordinated actions and controlled adjustments for a stable, caring relationship. Hence, an authentic relationship and a strong connection between the nurse and the patient are necessary. It can be achieved through effective communication exchanges and by being sensitive to both their needs. Their capacity to work together with less friction shall sustain a caring relationship so they can move in unison in a similar direction towards their ultimate goals.

4.4. Patient-centered care

Tandem care also advocates the central role of nurses, just like with the other concepts of caring. Hence, an essential attribute of the concept is patient-centered care. While the nurse and the patient jointly participate in achieving maximum health potentials, tandem care requires the nurse to initiate the nurse-patient caring relationship. Nurses shall be rearwardly positioned to assist and guide their prospective clients. In particular, nurses are steers of health engaged in heroic actions and selfless acts of love for their patients. While nurses prioritize the needs of their patients, they shall be required to do self-care. It is crucial to keep in mind that they cannot provide quality nursing care to other people if they cannot take care of themselves first. Overall, patient-centered care makes nursing unique from other disciplines.

5. Cases

5.1. Model Case

To demonstrate the concept's defining attributes, the use of the concept is presented in a hypothetical model case as

suggested by Walker and Avant (2011). In celebration of Nurse's Week last October, the Veterans Regional Hospital recognized the endless effort of the nurses who are working in every department. The Medical Ward was declared to be the most outstanding unit. With this, the nurse supervisor elaborated on why their performance is well appreciated. Nurses in the medical ward are active members of the self-care group for the health professionals and the patients. Therefore, he is practicing self-care and advocating the importance of doing self-care among the patients. The patients, upon admission, were instructed to participate in self-care activities such as early ambulation, deep breathing, and eating recommended diet. As patients are held responsible for themselves, together with the nurses, their relationship becomes meaningful.

Moreover, through patient's understanding of the nurse's job and their sincere relation to them, nurses become more committed to caring. Consequently, both partners feel appreciated since they are taking care of each other. Also, caring is well coordinated as evidence of the smooth relationship between the nurse and the patient. Through a tandem care approach, it allows them to work in unison to achieved shared health goals.

5.2. Contrary Case

A contrary case represents an instance where the concept is not present (Walker & Avant, 2011). However, the OB Ward placed last during the evaluation. The reasons were justified through the feedback given by the nurses and patient. There were many complaints in the unit due to the lack of coordination among nurses and patients. Nurses do not have the time to do self-care; that is why they do not usually initiate change and make a move to improve the health of the patients. Subsequently, nurses feel tired and unmotivated since the patients always rely on them. For example, the mothers constantly asked the nurses' assistance, although pain is expected during the labor process. Also, the family lacked cooperation as they do not understand their responsibilities in providing care to their patients. The misunderstanding between them can be observed as evidenced by their uncaring attitude toward each other. Consequently, there is friction between the nurse and the patient leading to frustrations and unhealthy outcomes.

5.3. Borderline Case

A borderline case is a case that contains some of the defining attributes of a concept but not all of them (Walker & Avant, 2011). Next to the rank with the highest performance evaluation is the Surgical Ward. Although the nurses exert all their efforts to deliver quality care, there is insufficient participation. It is noted that patients always depend on their health needs to the nurses on duty even though it involves simple, caring actions such as doing their ADLs. As evidence, a survey conducted revealed that there is impaired communication and relationship between the nurses and the patients. Nevertheless, nurses did not forget to take care of

themselves first to render nursing care to others. They also reported satisfaction in their job since they are very committed to their chosen career.

5.4. Related Case

Related cases are instances of concepts similar to the concept being studied but do not contain the critical attributes (Walker & Avant, 2011). On the other hand, the Private Ward placed second to the last base on the evaluation. Although both nurses and patients report satisfaction through their caring relationship, it was found out that the nurses are motivated only due to the reward is given by the relatives of the patients in exchange for the faster and more favored caring actions towards the patient. The evaluation also revealed various responses from the patients wherein nurses prioritize only those who are wealthy or connected with the province's officials. While self-caring and partnership among them are notable, no one reported that they consistently share common health goals.

5.5. Invented Case

An invented case is a case that uses the ideas of the concept but outside our own experience (Walker & Avant, 2011). The wife of the chief of the hospital and the regional director of the Department of Education shared her experience regarding the teamwork of their organization. According to her, the teaching-learning process occurs in a two-way direction between the teachers and the students. Both are held responsible for their learning, although education is magnified if they cooperatively work together inside the classroom. She also emphasized that the teacher is initiating learning, but in the process, they share mutual goals to work in unison. Further, she praised the nurses for their heroic act of love to their patients and ended her message by saying that "nursing and teacher education is considered to be the noblest professions."

6. Antecedents

According to Walker and Avant (2011), antecedents of a concept are the elements that are present "before the occurrence of the concept." The concept of tandem care has three principal antecedents: (1) knowledge about tandem care; (2) collaboration and communication; (3) engagement to self-care.

6.1. Knowledge about tandem care

To provide tandem care, the nurses and the other healthcare team members and the patients, the family, and the community should be educated. Accordingly, education is a potent vehicle for health promotion and clinical prevention through enhancing patient's involvement in nursing care (Chase, 2001; Mbnaso, 2006). Therefore, teaching about tandem care should not be conducted solely among the nurses and the healthcare members

and most especially to the prospective clients. This knowledge regarding tandem care should apply relevant teaching-learning principles and methods to increase awareness of the new approach to nursing care. Also, sharing this knowledge among the nurses, patients, and the organization represents a step toward their partnership. Notably, patients who feel that they are well-informed trust the health care system, and they are most likely to be satisfied with their care (Murdock, & Griffin, 2013).

6.2. Collaboration and Communication

The multidisciplinary approach to tandem care requires collaboration and practical communication skills among the nurses and the patients and other members of the healthcare team communicated. They must value cooperation and feel a commitment to share responsibility, beliefs, experiences, power, and accountability (Gallant, Beaulieu, & Carnevale, 2001; Sandhu et al., 2015). Hence, it entails that recognition of each individuality plays a significant role in the collaboration. Moreover, the partners must have meaningful communication exchanges to convey the relational aspect of mutual interaction. In particular, egalitarian communication must be exhibited in tandem care. Beyer and Marshall identified that egalitarian and communication has elements of respect, confidence, trust, open communication, and freedom from a threat (as cited by Cahill, 1996, p.868). Consequently, through effective communication, the collaboration will be enhanced, and the goal of tandem care will be fully realized.

6.3. Engagement to Self-care

Nurse's and patient's involvement in self-care represents the last antecedent that is essential to the concept of tandem care. Gallant, Beaulieu, and Carnevale (2002) posited that the progress of the nurse-patient relationship depends on the mastery of intrapersonal skills. Several attributes of self-care repeatedly emerged, including having self-awareness and preconceptions about others, acceptance of one's strengths and limitations, involvement in self-regarding behaviors, and fulfillment of an individual's unique needs (Pembroke, 2016; Turkel, Lynn, & Raton, 2015; Blum, 2014; Hernandez, 2009; Norcross, & Guy, 2009; Chow, & Kalischuck, 2008; Stark, Walsh, & Vliem, 2005). It is assumed that the ability to care for oneself reflects the capacity to care for others. to provide care to others.

7. Consequences

The consequences of a concept are the outcomes resulting from the concept's occurrence (Walker & Avant, 2011). If the concept and principle of tandem care will be adopted as a basis for nursing care, the following may be achieved: (1) healthy patient; (2) healthy nurse; (3) healthy nurse-patient relationship. In this case, the consequences of tandem care are not directly presented by the literature. However, its benefits are derived from the similar concepts of the other

disciplines reviewed. The application of tandem care in nursing may improve the health of the patients and, at the same time, the nurse's health. Based on the principle of autonomy as they recognize their own needs and take responsibility for doing self-care (Bruen, & Sudhershan, 2016; O'Rorke, 2005; Cziko, 2004; Turkel, Lynn, & Raton, 2015; Blum, 2014; Hernandez, 2009), nurses and patients feel more motivated and interested in taking care of themselves as well as in participating in the caring relationship. Consequently, they are more committed to achieving desired health goals as they prioritize their own health needs while maintaining a mutual relationship with their partners.

Tandem care also improves the individuals as there is increased self-esteem, confidence, and competence due to the trust given by both partners. Kieffer suggested that through partnership, people gain participatory competence, which further develops their sense of empowerment (as cited by Gallant, Beaulieu, & Carnevale, 2002, p. 155). The immense support to each other and reciprocity of actions also lead to a healthy, enjoyable, and fulfilling nurse-patient relationship (Bruen, & Sudhershen, 2016; Karjalainen et al., 2013; Sandhu et al., 2015). Moreover, it creates balance and a more stable relationship between the partners as they both adjust when faced with challenges in the healthcare process (Jonsson, Seiger, & Hirschfeld, 2005; Howell, 2017). As a result, the nurse-patient relationship becomes more meaningful as they both engaged in achieving common health goals. Overall, the relationship is authentic as both the nurse and the patient benefit from each other.

8. Empirical Referents

Tandem care also improves the individuals as there is increased self-esteem, confidence, and competence due to the trust given by both partners. Kieffer suggested that through partnership, people gain participatory competence, which further develops their sense of empowerment (as cited by Gallant, Beaulieu, & Carnevale, 2002, p. 155). The immense support to each other and reciprocity of actions also lead to a healthy, enjoyable, and fulfilling nurse-patient relationship (Bruen, & Sudhershen, 2016). Identification of the criteria used to measure the presence or existence of the concept's attributes, known as the empirical referents, is the final step in conducting a concept analysis (Walker & Avant, 2011). The best way to determine the effect of employing tandem care as a basis for nursing practice is by evaluating the outcomes, including staff, patients, and institution's outcomes. Many tools be can be accessed to measure the intended results. These include staff working satisfaction, as in "Burnout, role conflict, job satisfaction, and psychosocial health among Hungarian healthcare staff: A questionnaire survey (Piko, 2006) and Job stress, job performance, and social support among hospital nurses (AbuAlRub, 2004) patients satisfaction of nursing care like "The patient satisfaction with nursing care quality (Milutinović, Simin

Brkić, & Brkić, 2012) and institution outcomes like the performance assessment tool for quality improvement in hospitals developed by World Health Organization (2007). In particular, in the study of Weyers, Peter, Bogglid, Jeppesen, and Siegrist (2006), nurses' job satisfaction, motivation, commitment, self-esteem, and caring behaviors are measured using the Effort-reward imbalance (ERI) questionnaire. The 23-item ERI questionnaire consists of two scales measuring its extrinsic components' effort' (six Likert scale items) and 'reward' (11 Likert scale items with three subscales' esteem', 'salary and promotion prospects' and 'job security) and one scale measuring its intrinsic component overcommitment, a short version with six Likert scale items defining a one-dimensional.

Moreover, it creates balance and a more stable relationship between the partners as they both adjust when faced with challenges in the healthcare process (Jonsson, Seiger, & Hirschfeld, 2005; Howell, 2017). As a result, the nurse-patient relationship becomes more meaningful as they both engaged in achieving common health goals. Overall, the relationship is authentic as both the nurse and the patient benefit from each other.

It is also worth considering qualitative measurement, especially considering the experiences of the nurses and the patients regarding the caring relationship. Such method includes meta-ethnographic and phenomenology research that utilizes interview, reflective journaling, written accounts, and diary (Rolfe, & Gardner, 2006; Bridges et al., 2012; Hallorsdottir, 2008; Wilson & Grams, 2005; Forchuk et al., 2000). For instance, a synthesis of qualitative studies to describe nurses' experiences of the nurse-patient relationship in the acute hospital setting was reviewed through a meta-ethnographic method (Bridges et al., 2012). Moreover, Forchuck (et al., 2000) conducted an interview, transcribed recorded data, and analyzed the results using Martin qualitative software to develop nurses' perceptions about developing a good nurse-patient relationship.

9. Implications for Nursing

Tandem care proposes a new approach to the nursing practice nursing education. It revisits the capacity of a nurse to relate to the patients, student learners, and prospective subjects. Tandem care envisions promoting a caring attitude and behavior for both the nurses and patients. The concept provided a framework to establish a meaningful nurse-client relationship and built authentic caring. In the concept of tandem care, when the nurse and patient are expected to care for each other, optimum health is achieved. Consequently, creating a caring model based on tandem care will address nurses' increasing stress levels in the work setting, decrease morale, and job exit. Nurses become more motivated to take care of themselves so they can render care more effectively to others.

Moreover, the attributes formulated through the concept analysis shall serve as a basis in developing guidelines

for caring in nursing. As clearly demonstrated in the cases, it enables the nurses to rationalize and qualify nursing interventions in promoting interactive, personal, synchronous, and patient-centered care. In the end, the knowledge formed through concept analysis shall evaluate new perspectives in caring as a basis to enhance the quality of nursing care in all settings.

10. Conclusions

Caring is everybody's responsibility. To provide care to others, individuals need to care for themselves first. However, if their ultimate goal is to sustain and attain excellent care to achieve optimum health, individuals have to work in tandem. Exploring the concept of tandem care through Walker and Avant (2011) enables nurses to see other perspectives of caring despite the wide range of caring theories, models, and frameworks. Subsequently, synthesizing the definitions and usage of tandem from various literature gives a new meaning to the concept. Hence, tandem care consist of the following attributes: (1) mutual care, (2) personal care, (3) synchronous care, and (3) patient-centered care. As both the nurses and the patients are involved in self-care, they can reciprocate caring behaviors. With this, cooperation is increased, and a more meaningful relationship is achieved through the partners' common health goals. Overall, integrating the tandem concept into nursing allows the generation of knowledge as a basis for nursing practice, education, and research.

REFERENCES

- [1] Abdullah, L., Sulaiman, Z., Ahmed, N., Lalji, S., Damani, S., & Merchant, A. (2007). Perception of caring: Patients, nurses, physicians, and administrators. *International Journal for Human Caring*, 11(4), 33.
- [2] AbuAlRub, R. F. (2004). Job stress, job performance, and social support among hospital nurses. *Journal of nursing scholarship*, 36(1), 73-78.
- [3] Agarwal, R., Raina, A., Lasorda, D., Moraca, R., Bailey, H.,... Benza, R. (2015). Successful treatment of acute left ventricular assist device thrombosis and cardiogenic shock with intraventricular thrombolysis and a tandem heart. *American Society for Artificial Internal Organs*. 61, 98-101.
- [4] Bailey, D. N. (2009). Caring defined: A comparison and analysis. *International Journal for Human Caring*, 13(1), 16-31.
- [5] Baldwin, M. A. (2008). Concept analysis as a method of inquiry. *Nurse researcher*, 15(2).
- [6] Blum, C. (2014). Practicing self-care for nurses: a nursing program initiative. *Online Journal Of Issues In Nursing*, 19 (3), 3.
- [7] Boykin, A., & Schoenhofer, S. (2013). Nursing as caring: a model for transforming practice. Jones and Bartlett Publishers:

London.

- [8] Bryant, T. (2012). Tandem Nursing: A Review and Guidelines. *International Journal of Childbirth Education*, 27(4).
- [9] Bridges, J., Nicholson, C., Maben, J., Pope, C., Flatley, M., Wilkinson, C., ... & Tziggili, M. (2013). Capacity for care: meta-ethnography of acute care nurses' experiences of the nurse-patient relationship. *Journal of Advanced Nursing*, 69(4), 760-772.
- [10] Bruen, J., & Sudhershnan, A. (2015). "So They're Actually Real?" Integrating E-Tandem Learning into the Study of Language for International Business. *Journal of Teaching in International Business*, 26(2), 81-93.
- [11] Burkhoff, D., O'Neill, W., Brunckhorst, C., Letts, D., Lasorda, D., & Cohen, H. A. (2006). Feasibility study of the use of the TandemHeart® percutaneous ventricular assist device for treatment of cardiogenic shock. *Catheterization and cardiovascular interventions*, 68(2), 211-217.
- [12] Cahill, J. (1996). Patient participation: a concept analysis. *Journal of Advanced Nursing*, 24, 561-571.
- [13] Chase, T. M. (2001). Learning styles and teaching strategies: enhancing the patient education experience. *SCI nursing a publication of the American Association of Spinal Cord Injury Nurses*, 18(3), 138-141.
- [14] Chow, J., & Kalischuk, R. (2008). Self-care for caring practice: student nurses' perspective. *International Journal for Human Caring*, 12(3), 31-3.
- [15] Condon, C., & Cremin, K. (2014). Static balance norms in children. *Physiotherapy Research International*, 19(1), 1-7.
- [16] Cziko, G. A. (2004). Electronic Tandem Language Learning (eTandem): A Third Approach to Second Language Learning for the 21st Century. *Calico Journal*, 25-39.
- [17] Deane, W. H., & Fain, J. A. (2016). Incorporating Peplau's Theory of Interpersonal Relations to Promote Holistic Communication Between Older Adults and Nursing Students. *Journal of Holistic Nursing*, 34(1), 35-41.
- [18] De Vries, K. (2013). Communicating with older people with dementia. *Nursing older people*, 25(4), 30-37.
- [19] Dozza, M., Wall III, C., Peterka, R. J., Chiari, L., & Horak, F. B. (2007). Effects of practicing tandem gait with and without vibrotactile biofeedback in subjects with unilateral vestibular loss. *Journal of Vestibular Research*, 17(4), 195-204.
- [20] Duncan, C., Cloutier, J. D., & Bailey, P. H. (2007). Concept analysis: the importance of differentiating the ontological focus. *Journal of advanced nursing*, 58(3), 293-300.
- [21] Falk, A., & Fischbacher, U. (2006). A theory of reciprocity. *Games and economic behavior*, 54(2), 293-315.
- [22] Flower, H. (2003). Adventures in tandem nursing: breastfeeding during pregnancy and beyond. La Leche League International. *Illinois, USA*.
- [23] Forchuk, C., Westwell, J., Martin, M. L., Bamber-Azzopardi, W., Kosterewa-Tolman, D., & Hux, M. (2000). The developing nurse-client relationship: Nurses' perspectives. *Journal of the American Psychiatric Nurses Association*, 6(1), 3-10.
- [24] Franzmann, J., Haberstroh, J., Krause, K., Neumeyer, K., Schmitz, B., & Pantel, J. (2010). Communication trainings for caregivers of dementia patients: TANDEM project. *Alzheimer's & Dementia*, 6(4), S132.
- [25] Gallant, M. H., Beaulieu, M. C., & Carnevale, F. A. (2002). Partnership: an analysis of the concept within the nurse-client relationship. *Journal of Advanced Nursing*, 40(2), 149-157.
- [26] Granados Gámez, G. (2009). The nurse-patient relationship as a caring relationship. *Nursing science quarterly*, 22(2), 126-127.
- [27] Haberstroh, J., Neumeyer, K., Krause, K., Franzmann, J., & Pantel, J. (2011). TANDEM: Communication training for informal caregivers of people with dementia. *Aging & mental health*, 15(3), 405-413.
- [28] Haberstroh, J., Neumeyer, K., Schmitz, B., Perels, F., & Pantel, J. (2006). Communications tandem development, implementation and evaluation of a communication T trainings for care An associated by The enzpatischen. *Journal of Gerontology and Geriatrics*. 39(5), 358-364.
- [29] Halldorsdottir, S. (2008). The dynamics of the nurse-patient relationship: introduction of a synthesized theory from the patient's perspective. *Scandinavian journal of caring sciences*, 22(4), 643-652.
- [30] Hardin, S., & Hussey, L. (2003). AACN synergy model for patient care case study of a CHF patient. *Critical care nurse*, 23(1), 73-76.
- [31] Herrmann, L. L., & Zabramski, J. M. (2005). Tandem practice model: A model for physician-nurse practitioner collaboration in a specialty practice, neurosurgery. *Journal of the American Association of Nurse Practitioners*, 17(6), 213-218.
- [32] Hernandez, G. (2009). The HeART of self-C.A.R.I.N.G.: a journey to becoming an optimal healing presence to ourselves and our patients. *Creative Nursing*, 15(3), 129-133.
- [33] Howell, D. R., Oldham, J. R., Meehan III, W. P., Difabio, M. S., & Buckley, T. A. (2017). Dual-Task Tandem Gait and Average Walking Speed in Healthy Collegiate Athletes. *Clinical Journal of Sport Medicine*.
- [34] Jacobsson, T. J., Fjällström, V., Edoff, M., & Edvinsson, T. (2015). A theoretical analysis of optical absorption limits and performance of tandem devices and series interconnected architectures for solar hydrogen production. *Solar Energy Materials and Solar Cells*, 138, 86-95.
- [35] Jonsson, E., Seiger, Å., & Hirschfeld, H. (2005). Postural steadiness and weight distribution during tandem stance in healthy young and elderly adults. *Clinical Biomechanics*, 20(2), 202-208.
- [36] Karjalainen, K., Pörn, M., Rusk, F., & Björkskog, L. (2013). Classroom tandem-outlining a model for language learning and instruction. *International Electronic Journal of Elementary Education*, 6(1), 165.
- [37] Khalifehzadeh, A., Jahromi, M. K., & Yazdannik, A. (2012). The impact of Synergy Model on nurses' performance and the satisfaction of patients with acute coronary syndrome. *Iranian journal of nursing and midwifery research*, 17(1), 16.
- [38] Kramer, S., & Aschenbrenner, G. (1989). *U.S. Patent No.*

- 4,803,928. Washington, DC: U.S. Patent and Trademark Office.
- [39] Lee, C. L., Cheng, C. Y., & Su, H. C. (2014). Enhancing device efficiencies of solid-state near-infrared light-emitting electrochemical cells by employing a tandem device structure. *Organic Electronics*, 15(3), 711-720.
- [40] Longo, J. (2011). Acts of caring: Nurses caring for nurses. *Holistic nursing practice*, 25(1), 8-16.
- [41] Lovett, S. (2001). Tandem repeats. *Encyclopedia of Genetics*, 3, 1932-1933.
- [42] Mallinson, A. I., & Longridge, N. S. (2008). Increasing the usefulness of tandem walking evaluation. *Journal of otolaryngology-head & neck surgery= Le Journal d'oto-rhino-laryngologie et de chirurgie cervico-faciale*, 37(6), 860-864.
- [43] Mbanaso, U. (2006). Enhancing the effectiveness of patient education. *West African Journal of Nursing*, 17(1), 48-51.
- [44] Milne, D., & Dunkerley, C. (2010). Towards evidence-based clinical supervision: The development and evaluation of four CBT guidelines. *The Cognitive Behaviour Therapist*, 3(2), 43-57.
- [45] Milne, D., & James, I. (2015). Clinical supervision: 10 test of the tandem model. *Clinical Psychology Forum*, 151, 6-9.
- [46] Milutinović, D., Simin, D., Brkić, N., & Brkić, S. (2012). The patient satisfaction with nursing care quality: the psychometric study of the Serbian version of PSNCQ questionnaire. *Scandinavian journal of caring sciences*, 26(3), 598-606.
- [47] Morrison, P., & Burnard, P. (1997) What is caring?. *Caring and Communicating Facilitators Manual*. Palgrave, London.
- [48] Murdock, A., & Griffin, B. (2013). How is patient education linked to patient satisfaction?. *Nursing2016*, 43(6), 43-45.
- [49] Myers, P. (2007). Tandem repeats and morphological variation. *Nature Education*, 1(1).
- [50] Neuzil, P., Kmonicek, P., Skoda, J., & Reddy, V. Y. (2009). Temporary (short-term) percutaneous left ventricular assist device (Tandem Heart™) in a patient with STEMI, multivessel coronary artery disease, cardiogenic shock and severe peripheral artery disease. *Acute cardiac care*, 11(3), 146-150.
- [51] Norcross, J., & Guy, J. (2009). Leaving it at the office: a guide to psychotherapist self-care. *Journal of Trauma & Dissociation*, 10(1), 120-122.
- [52] O'Rourke, B. (2005). Form-focused interaction in online tandem learning. *CALICO journal*, 433-466.
- [53] Piko, B. F. (2006). Burnout, role conflict, job satisfaction and psychosocial health among Hungarian health care staff: A questionnaire survey. *International journal of nursing studies*, 43(3), 311-318.
- [54] Power Thesaurus. (1969). *tandem thesaurus*. Retrieved November 7, 2017, from <http://www.powerthesaurus.org/tandem/antonyms>.
- [55] Premboke, N. (2016). Contributions from Christian ethics and Buddhist philosophy to the management of compassion fatigue in nurses. *Nursing and Health Sciences*, 18, 120-124.
- [56] Rao, S., Rodriguez, A., & Benson, G. (2005). Evaluating distance functions for clustering tandem repeats. *Genome Informatics*, 16(1), 3-12.
- [57] Rentzsch, M., Schildknecht, M., Rudenauer, W., Lindstadt, K., & Hahn, M. (1994). *U.S. Patent No. 5,309,843*. Washington, DC: U.S. Patent and Trademark Office.
- [58] Rolfe, G., & Gardner, L. (2006). 'Donot ask who I am.': confession, emancipation and (self)-management through reflection. *Journal of Nursing Management*, 14, 593-600.
- [59] Sandhu, S., Arcidiacono, E., Aguglia, E., & Priebe, S. (2015). Reciprocity in therapeutic relationships: a conceptual review. *International journal of mental health nursing*, 24(6), 460-470.
- [60] Stark, M., Manning-Walsh J., & Vliem, S. (2005). Caring for self while learning to care for others: a challenge for nursing students. *Journal of Nursing Education*, 44(6), 266-270.
- [61] Smith, S. (2012). Nursing competence: a concept analysis. *International Journal of Nursing Knowledge*, 23(3), 172-182.
- [62] Suzuki, M., Fujisawa, H., Suzuki, H., Kawakami, S., Murakami, K., & Miki, C. (2017). Frequency analysis of the center of pressure in tandem stance in community-dwelling elderly. *Journal of Physical Therapy Science*, 29(5), 828-831.
- [63] Tandem. (n.d.). Retrieved November 25, 2017, from <http://www.thesaurus.net/tandem>.
- [64] Tandem. (n.d.). *Dictionary.com Unabridged*. Retrieved November 7, 2017 from Dictionary.com website <http://www.dictionary.com/browse/tandem>.
- [65] Tandem. (n.d.). Retrieved November 7, 2017, from <https://www.merriam-webster.com/dictionary/tandem>.
- [66] Tandem (n.d) Online Etymology Dictionary. Retrieved November 7, 2017 from <https://www.etymonline.com/word/tandem>.
- [67] Tandem (n.d.) Wiktionary the Free Dictionary. Retrieved November 7, 2017 from <https://en.wiktionary.org/wiki/tandem>.
- [68] Tandem Exchange (2017). Tandem partnership. Retrieved November 7, 2017 from <https://www.tandemexchange.com/>.
- [69] Team (n.d.) Roget's 21st Century Thesaurus, Third edition. Retrieved November 07, 2017 from Thesaurus.com website <http://www.thesaurus.com/browse/team>.
- [70] Teranishi, T., Kondo, I., Sonoda, S., Wada, Y., Miyasaka, H., Tanino, G., ... & Saitoh, E. (2011). Validity study of the standing test for imbalance and disequilibrium (SIDE): Is the amount of body sway in adopted postures consistent with item order?. *Gait & posture*, 34(3), 295-299.
- [71] Tsui, M. S., & Ho, W. S. (1998). In search of a comprehensive model of social work supervision. *The Clinical Supervisor*, 16(2), 181-205.
- [72] Turkel, M., Lynn, C., & Raton, B. (2015). Caring for self. *Scandinavian Journal Of Caring Sciences*, 29 (4), 613-614.
- [73] Van den Berg, M., & Ball, H. L. (2008). Practices, advice and support regarding prolonged breastfeeding: a descriptive study from Sri Lanka. *Journal of Reproductive and Infant Psychology*, 26(3), 229-243.

- [74] Walker, L. O., & Avant, K. C. (2011). *Strategies for theory construction in nursing* (5th ed). Philadelphia, PA: Lippincott Williams & Wilkins.
- [75] Watson, J. (2009). Caring science and human caring theory: Transforming personal and professional practices of nursing and health care. *Journal of health and human services administration*, 466-482.
- [76] Weyers, S., Peter, R., Bogglid, H., Jeppesen, H., & Siegrist, J. (2006). Psychosocial work stress is associated with poor self-rated health in Danish nurses: a test of the effort-reward imbalance model. *Scandinavian Journal Caring Science*, 20, 26-34.
- [77] Wilson, A., & Grams, K. (2007). Reflective journaling and self-care: the experience of MSn students in a course on caring. *Caring International Journal for Human Caring*, 11(1), 16-21.
- [78] Woodin, J. (2010). Cultural categorisation: what can we learn from practice? An example from tandem learning. *Language and Intercultural Communication*, 10(3), 225-242.
- [79] World Health Organization. (2007). Performance assessment tool for quality improvement in hospitals. WHO Regional Office for Europe.