

Concept Analysis of Uncertainty

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Abstract

Uncertainty can be uncomfortable and sometimes unavoidable. It can be in various settings, not limited to one specific thing or discipline. This paper is a concept analysis of the concept of uncertainty. Within this analysis, several definitions of uncertainty will be addressed as well as usages of the concept. Wilson's Method will aid in the steps to complete in order to effectively analyze uncertainty. Antecedents such as lack of information, ambiguity, unpredictability, stimuli frame, and structure providers are discussed. Defining attributes of uncertainty are found to be probability, perception, and temporality. Uncertainty can cause many consequences, which can include anxiety, depression, frustration, anger, fear, agitation, and information seeking. Empirical referents can be used to help measure the concept, and this analysis discusses Mishel's Uncertainty in Illness Scale and the Illness Perception Questionnaire as tools to help measure people's uncertainty. Case illustrations are further used to see examples of uncertainty to gain a better understanding, tying all of the components together. To conclude, implications for clinical practice are discussed to help a patient cope when faced with uncertainty. Open communication and information giving are great ways to manage uncertainty.

Concept Analysis of Uncertainty

Health Care Reform is mentioned everyday on news channels, in businesses, and in households across America. The Reform has many supporters, as well as many skeptics. Supporters have faith and hope that it will be a solution to the problems of health care in America, and the skeptics doubt it because, after all, it is not certain it will actually work. President Obama has suggested that his new administration will take science back to its rightful place, raise the quality of health care, and lower the costs associated with health care (Pronovost & Goeschel, 2010). How will this happen? Is it possible to attain all of these goals? It is not possible to know everything, leaving many uncertainties in life. Uncertainty can be seen everywhere. Some may even argue that nothing is certain. Understanding the concept of uncertainty is vital in knowing effective means to aide in handling life's situations in which cause one to be uncertain.

Aim of the Analysis

The aim of the analysis is to understand what the concept of uncertainty plays on individuals in different disciplines. Whether it ranges from every day life to nursing to the weather outside, there are varying degrees of uncertainties. This analysis will take a glimpse into factors leading to uncertainty, positive and negative outcomes that can be associated with being uncertain, as well as defining attributes of the concept. After literature is analyzed, implications for nursing will be addressed, as it is important to better understand the concept of uncertainty, not only to provide the best care to patients, but also to effectively handle unexpected situations that cause one to feel uncertain.

Definitions

Merriam-Webster (2011) defines uncertainty as a state or quality of not being certain: doubt. Uncertainty is not being capable of assigning probabilities for outcomes (Vaismoradi, Salsali, & Ahmadi, 2011). When outcomes cannot be controlled, there is uncertainty. Natural disasters or crisis situations also possess a great deal of uncertainty in people. A crisis is an unexpected, but specific and non-routine series of events or an event creating high levels of uncertainty which threaten or are perceived to potentially threaten high priority goals such as security of life, property security or even the well being of individual or community (Spence, Lachlan, & Burke, 2007). Mishel (1988) has an uncertainty in illness theory and defined uncertainty as not having the ability to distinguish the meaning associated with illness-related events (McCormick, 2002). Uncertainty occurs when sufficient cues are lacking causing the person to not be able to adequately categorize or structure an event (McCormick, 2002). Attributes consistent with uncertainty are perception, probability, and temporality (McCormick, 2002). Uncertainty can be positive and/or negative, given then situation and person who is uncertain (McCormick, 2002). Regardless of where the definition of uncertainty is derived from, each definition serves a similar meaning.

Usages of the Concept

Uncertainty can be used in many disciplines. It can be found in military families sending a loved one to war, pregnancy, law, flying in a plane, illness, marriage, and even schoolwork as well as many other areas. Possibilities of situations resulting in uncertainty could be endless; however, this concept analysis will focus on uncertainties in nursing and in environmental science.

Nursing.

Uncertainty is unavoidable for people working in health care, especially in decision-making (Vaismoradi et al., 2011). Nurses are currently more autonomous, so when faced with uncertainty, moral distress could occur as a result of deciding or helping the patient and family determine the best action (Vaismoradi et al., 2011). There can be uncertainty about the risk from patients, professional identity, nursing roles in relation to leadership strategies and training (Vaismoradi et al., 2011). When in a nursing position, it is easy for one to become overwhelmed and also uncertain about a patient or situation. Patients expect nurses to be able to answer their questions regarding a specific illness when the physicians are not present. In answering the patient's questions, the nurse could feel uncertain in knowing what is an appropriate and accurate response. Along with this uncertainty, feelings can accompany uncertainty such as frustration, agitation, fear, and even anger (Vaismoradi et al., 2011). Not only can a nurse feel uncertain, the nurses' patients are often uncertain of their illness. If a nurse practitioner gives an unexpected diagnosis, uncertainty can occur simultaneously (Penrod, 2001). Patients often recount their stories of uncertainty to nurses, making it possible for the patient's uncertainty to be transferred to the nurse (Penrod, 2001). Therefore, it is imperative that the nurse remains composed so that the feelings do not jeopardize patient care.

Environmental Science.

Along with nursing involving various uncertainties, the environment can also bring about uncertainty. Environmental factors such as floods, fires, hurricanes, and tornados are often times unavoidable. The current knowledge of the environmental system and the ability to predict the future changes caused by them will never be complete, even after vigorous research; however, there should be ways to reduce the associated degrees of uncertainty about the complex systems

(Berkes, 2007). Ecosystems are increasingly being seen as inherently unpredictable, not stable and uncontrollable (Berkes, 2007). If an adverse event is predicted, there is uncertainty associated in what to anticipate the extent of the damage could be. If an event happens, there is uncertainty in how to cope with the situation. When a natural disaster strikes, such as Hurricane Katrina, people affected often have a high degree of uncertainty in not having adequate knowledge of how to now obtain necessary items, free time that was not planned, unclear pressing future, no means of obtaining needed information, and in many instances, lost homes and possibly loved ones (Spence et al., 2007). Berkes (2007) states that building a memory of past occurrences, leaving the notion of stability, expecting the unexpected, and increasing the ability to learn from a crisis situation are all requirements of learning how to live and cope with uncertainty.

Analysis of Concept

In doing a concept analysis, the process utilized is important to identify. This concept analysis utilizes a simplified version of Wilson's concept analysis procedure following eight basic steps (Walker & Avant, 2011, p.159). First, a concept of interest must be selected, and in this analysis, the concept is uncertainty (Walker & Avant, 2011, p.160). Uses of the concept, for example nursing and environmental science are addressed following the aim of the analysis (Walker & Avant, 2011, p.160). Antecedents will be addressed within the analysis of the concept and defining attributes will follow (Walker & Avant, 2011, p. 160). A model case will then be brought to light followed by borderline and related cases (Walker & Avant, 2011, p.160). To conclude the analysis, the consequences of uncertainty will be identified and the empirical referents will be defined (Walker & Avant, 2011, p. 160). Wilson's method is easy to follow and

facilitates in the thorough development of an analysis of uncertainty. The concept map labeled figure 1 provides a visual representation of this analysis process.

Antecedents

Walker and Avant (2011) define antecedents as incidents or events that have to happen or be in place before the concept can occur (p.167). Lack of information could be a major antecedent of uncertainty. When information is not readily available, people are insecure about their own knowledge, leading to uncertainty (McCaughrin & Mattammal, 2003). Lack of information may lead to feeling a loss of control, stress, and uncertainty; however, information seeking updates knowledge and understanding of a situation, reducing uncertainty (Spence et al., 2007). If sufficient information is not provided, a person is being denied the ability to be able to form a frame of reference (McCormick, 2002). Ambiguity or a difference in interpretation could be another source of uncertainty and another form of lack of information. If ambiguity occurs, there is a double meaning that may or may not be deliberate, leaving information to be interpreted in different ways and uncertainty could result (McCormick, 2002). Uncertainty could be contagious, that is if one is uncertain of something, the one's surrounding could also become uncertain. A situation where this occurs could be in the case of parental uncertainty if a child is diagnosed with cancer (Stewart, Mishel, Lynn, & Terhorst, 2010). Parental uncertainty about their child's diagnosis might undermine their confidence that helps to appraise the child's health accurately, interfere with normal routines of the family, and may limit the capacity in providing support and information to the child, which could all in turn increase children's uncertainty (Stewart et al., 2010). Mishel identified two antecedents in uncertainty in illness as stimuli frame and structure providers (Stewart et al., 2010). Stimuli frame is the degree that the trajectory of the illness is congruent, familiar, and patterned with expectations (Stewart et al., 2010).

Structure providers serve as resources to interpret the stimuli frame and are in the patient's care giving networks (Stewart et al., 2010). Without structure providers, it can be seen why uncertainty could result. Unpredictability is yet another source of uncertainty because the outcomes cannot be weighed appropriately. The ability to predict future dynamics will not ever be complete, especially in the sense of the ecological system, producing uncertain environments (Berkes, 2007). Predictions are never certain, because after all, they are only predictions. Even in a common illness that is typically predictable, events could happen causing the predictable to suddenly become unpredictable, leading to a grey area of uncertainty. Many antecedents, which are not limited to the ones listed above, can contribute to various uncertainties in life.

Defining Attributes

Walker and Avant (2011) define the defining attributes of a concept to be attributes that are most frequently associated with that concept and essentially are the main component of a concept analysis (pg. 162). Throughout analyzing multiple articles on the concept of uncertainty, a few characteristics were evident whether explicitly or implicitly implied.

Probability.

The first defining attribute of uncertainty is probability. Uncertainty can be defined as a dynamic state in which one is unable to adequately assign probabilities for proper outcomes (Vaismoradi et al., 2011). Probability is not certain; probability is stating that something could happen, something is probable to happen. There are no guarantees with probabilities or the outcomes. Information theory says uncertainty is related to the alternatives and available choices in a situation and to the probability that a certain alternative will actually occur (McCaughrin & Mattammal, 2003). Information, in turn, reduces or even removes uncertainty (McCaughrin & Mattammal, 2003). In relation to the weather and environment, it is said that the culture in

regard to certainty has given way to a culture of probability, and it has been accepted by the Weather Bureau that uncertainty is a key of forecasting weather (LÜBKEN & MAUCH, 2011). Sometimes probability can even be manipulated in certain situations to maintain a sense of uncertainty because what is already known is threatening (McCormick, 2002). This can be especially true in illness to help deal with the reality of not knowing the outcome (McCormick, 2002). Patients tend to weigh all of the potential odds of an outcome, making probability the center of the prognosis and treatment in an uncertain illness situation (McCormick, 2002). In many situations that arise throughout life, there will be a probability of the outcome going in one direction or another.

Perception.

Another defining attribute to the concept of uncertainty is perception. Merriam-Webster (2011) define perception as an observation; an awareness of environmental elements through sensation; cognition; capacity of comprehending something. In order for something to be uncertain, first it has to be recognized and perceived as uncertain (McCormick, 2002). Uncertainty is embedded in an individual's perception of meaning or outcomes of a situation (Vaismoradi et al., 2011). These perceptions can present a challenge to one's confidence or control yielding various types and forms of uncertainty (Vaismoradi et al., 2011). Perception is how one perceives a situation, and that perception can vary according to the person. One individual may perceive the news of a car accident as upsetting, and another individual may feel relieved to be alive. Mishel's theory specifies that a person's cognitive abilities influence the way the individual perceives the understanding of a concept which influences the level of uncertainty (Stewart et al., 2010). Mishel also stated that uncertainty is a perceptual variable (McCormick, 2002). Perception is important to the concept of uncertainty because individuals

perceive different patterns of occurrences that cannot be linked to an existing frame of reference and that are contrary to what is expected (McCormick, 2002). A structure of cognitive events cannot be determined when a stimulus is not classified, making an individual's ability to appraise a situation and the ability to choose the suitable action become inadequate for the circumstance (McCormick, 2002). Perception can change as a situation changes, leading to more or less uncertainty given the condition.

Temporality.

The final defining attribute is temporality. Temporality is defined by Merriam-Webster (2011) as the state or quality of being temporal, which essentially is time related. If an individual does not know what is in the future, or the amount of time needed until the vagueness, unpredictability, or ambiguity of a given circumstance is cleared, uncertainty will prevail (McCormick, 2002). This can especially be true in the case of nursing related to illness and in unexpected environmental conditions because the ability to plan ahead is no longer the case (McCormick, 2002). Individuals are able to solve current issues based on possible future matters because it is taken into consideration what has been previously learned through past events (McCormick, 2002). In relation to health, uncertainty has a large temporal component because an illness can be acute or short lived; or a condition can be chronic or long term (McCaughrin & Mattammal, 2003). Temporality can also be related to the uncertainty of nursing staff turnover, in that it could be continual or episodic (McCaughrin & Mattammal, 2003). In the event of a natural disaster and the associated uncertainties, there is a large temporal portion associated with questions such as knowing when the disaster will happen, how long will it last, and how long will the recovery take. Temporality in uncertain situations can arise as a part of perhaps a child diagnosed with cancer. There is a great temporal component in the time since the diagnosis and

the probability of the outcomes (Stewart et al., 2010). Uncertainty will succeed when temporal issues cannot be adequately addressed.

Empirical Referents

Empirical referents can be defined as the means a person measures or recognizes defining attributes of a concept and are useful because they can help determine if the concept exists by observable occurrences (Walker & Avant, 2011, p. 168-169). Tools can be used to measure attributes such as using a pain scale to measure pain, the Richter scale to classify an earthquake, anxiety scales, and depression scales. Methods to measure uncertainty and perception will further be discussed.

Mishel's Uncertainty in Illness Scale.

Mishel's Uncertainty in Illness Scale (MUIS) consists of 33 items on a Likert-type scale and was originally formulated to measure stress and uncertainty that can accompany hospitalization (Decker, Haase, & Bell, 2007). Four elements are included within this questionnaire to aid in measuring uncertainty, including complexity, ambiguity, unpredictability, and lack of information (McCormick, 2002). These elements are consistent with antecedents of uncertainty. Emotional outcomes are not included (McCormick, 2002). MUIS is finished by having the person being measured respond to the questions by giving a score of 1-5, one meaning strongly agree and five meaning strongly disagree (Decker et al., 2007). The numbers are totaled to give the uncertainty score (Decker et al., 2007). There are some variations of this scale depending on the circumstance with one being the Parent Perceptions of Uncertainty Scale (PPUS) (Stewart et al., 2010). The same factors are still measured in this scale. MUIS is overall an easy way to measure uncertainty in a given person.

Illness Perception Questionnaire-Revised.

Perception is one of the key attributes of uncertainty and the Illness Perception Questionnaire-Revised (IPQR) was formed to essentially see how a patient perceives their illness (Chen, Tsai, & Lee, 2008). The IPQR consists of three components, which are identity or how the patient links themselves with an illness, the IR or the patients belief about the illness, and the causes or acknowledgment of the illness threat (Chen et al., 2008). In the IR component there are 38 items within seven subscales including timeline, timeline-cyclical, personal control, consequences, illness coherence, treatment control, and the emotional representations; the identity component has three subscales which are the cause of the symptom, prediction of symptom, and symptom occasion; the cause portion has four subscales including risk factors, psychological attribution, accident or chance, and immunity (Chen et al., 2008). Items are scored based on a 5-point Likert scale with one meaning strongly disagree and five meaning strongly agree (Chen et al., 2008). By having a greater understanding of how a person perceives an illness, it has been shown to help assess and manage outcomes of a patient's health (Figueiras & Alves, 2007). IPQ-R has been adapted in various ways to determine perceptions in healthy people, people with high blood pressure, people with mental illness among many more.

Consequences

Within the context of uncertainty, there can be many consequences that can either be positive or negative. Within a clinical setting, it may be common for health care providers, such as nurses, to feel uncertain leading to feelings of anger, frustration, fear, and agitation (Vaismoradi et al., 2011). If a situation presented where something happened unexpectedly, a nurse might feel agitated due to not knowing what to do (Vaismoradi et al., 2011). In another instance, a nurse could be fearful of what will happen if a situation arises that is outside their

scope of practice, and they are the only person there to help (Vaismoradi et al., 2011). Nurses may feel obligated to support their physician in uncertain situations, even if the nurse believes it is contributing to the patient's despair, thus resulting in moral distress (Vaismoradi et al., 2011). If coping mechanisms are inadequate to manage uncertainty, psychological distress, manifested as depression and anxiety, can result (Stewart et al., 2010). Moral distress, fear, agitation, frustration, anger, depression, and anxiety are typically perceived as negative consequences of uncertainty; however, not everything has to be negative. A positive consequence of uncertainty could be information seeking (McCaughrin & Mattammal, 2003). When uncertainty results due to lack of information, a person is more motivated to seek out the needed information (McCaughrin & Mattammal, 2003). Consequences typically are manifested different ways, depending on the situation that caused the uncertainty.

Case Illustrations

Case illustrations are used to help better understand a concept, comprising some or all of the defining attributes of a concept (Walker & Avant, 2011, p. 163). Model cases demonstrated all of the defining attributes, borderline cases show most of the attributes, and related cases are connected to the concept itself; however, they do not contain all of the attributes (Walker & Avant, 2011, p. 163-165).

Model Case.

Cindy is a nine-year-old girl who is taken to see the nurse practitioner (NP) by her parents because she has been increasingly tired, had recurrent infections, losing weight, and complaining of her bones hurting. During the assessment, the NP notes swollen lymph nodes and an enlarged spleen. The NP tells the parents that cancer is suspected but she is not certain. She refers the family to see an oncologist. Cindy's mother cries and asks questions about the

likelihood of it being leukemia, what the chances are of it being something else, and what is the rate of beating cancer in a child so young. She also wants to know how fast it could progress and how long Cindy will have to be treated if it is cancer. Cindy's mother continues to weep stating that she knows this is all happening because she had not been going to church for the past few years and had been smoking around Cindy.

Cindy's case is an example of a model illustration as it encompasses all of the listed defining attributes of uncertainty. The first questions asked relate to probability of it being leukemia and the chances of beating cancer. Cindy's mother wants to know the likelihood of something happening and the odds of the outcome. She then asks how fast and how long questions which are relating to time and temporality of the situation. Finally Cindy's mother perceives Cindy's illness to be her fault, blaming herself. Antecedents of the mother's uncertainty are lack of information, ambiguity, lack of stimuli frame, and unpredictability. Consequences Cindy's mom faces are information seeking, fear and frustration at self as evidenced by blaming herself, anxiety, and depression. Useful tools to measure Cindy's mother's uncertainty would be MUIS/PPUS, IPQR, a scale for anxiety, and a depression scale.

Borderline Case.

Cindy is a nine-year-old girl who is taken to see the nurse practitioner (NP) by her parents because she has been increasingly tired, had recurrent infections, losing weight, and complaining of her bones hurting. During the assessment, the NP notes swollen lymph nodes and an enlarged spleen. The NP tells the parents that cancer is suspected but she is not certain. She refers the family to see an oncologist. Cindy's mother cries and asks questions about the likelihood of it being leukemia, what the chances are of it being something else, and what is the rate of beating cancer in a child so young. She also wants to know how fast it could progress and

how long Cindy will have to be treated if it is cancer. The family then leaves to set an appointment with the oncologist.

In this example, probability and temporality are clearly defined; however, perception is lacking. Since there is an attribute that is not defined, it is classified as a borderline case.

Antecedents of the mother's uncertainty are unpredictability of illness, lack of information, and ambiguity. Consequences for Cindy's mother are information seeking, fear, anxiety, and possible depression. MUIS/PPUS would be useful for Cindy's mother as well as an anxiety scale. A depression scale may be beneficial later.

Related Case.

Cindy is a nine-year-old girl who is taken to see the nurse practitioner (NP) by her parents because she has been increasingly tired, had recurrent infections, losing weight, and complaining of her bones hurting. During the assessment, the NP notes swollen lymph nodes and an enlarged spleen. The NP tells the parents that cancer is suspected but she is not certain. She refers the family to see an oncologist. Cindy's mother panics wanting to know what she can do to help, what she did to cause this, and how she can control the progression if it is cancer. She then begins to cry hysterically saying that she does not know what to do and has never felt so out of control of a situation.

Essentially, Cindy's mother feels a complete loss of personal control over Cindy's possible illness. Loss of control is closely related to uncertainty; however, the two are not the same. Uncertainty is not an emotional state; it is a neutral state of cognition (McCormick, 2002). Therefore, this example is a related case. Antecedents for the mother's uncertainty include, but are not limited to lack of information, unpredictability, and ambiguity. Consequences are

anxiety, moral distress, fear, and possible depression. The MUIS/PPUS would be beneficial; however in this case, an anxiety scale would be of most importance.

Summary of Analysis

Within this concept analysis, uncertainty was analyzed in various disciplines from nursing to environmental science. Uncertainty is not limited to these two topics, as it can be seen in nearly every walk of life. Antecedents were found to be lack of information, unpredictability, ambiguity, structure providers, and stimuli frame. Some consequences of uncertainty were found to be anxiety, depression, moral distress, fear, agitation, frustration, anger, and even information seeking. Three defining attributes of uncertainty were found to be probability, perception, and temporality. Empirical referents used to help measure attributes were listed and case illustrations were presented to help understand real world example of uncertainty.

Implications for Practice

From this concept analysis, there can be several implications for nursing practice. It is important to be involved in patient care and pay attention to the feelings expressed by them. An open environment for communication can be beneficial for the patient and families to voice concerns and talk through any feelings they have. Many consequences can stem from not having the needed information to feel secure; therefore, nurses should strive to give all available information to reduce that uncertainty. Attention to patients can often times key a nurse into what the patient is feeling, so screening early for possible consequences such as depression and anxiety may be beneficial, as discussed under empirical referents. In the case of parental uncertainty, it is especially important to reduce that uncertainty to a minimal level early as it could also lead to uncertainty in the child involved. Looking for potential adverse outcomes early could prevent further distress in a patient and patient families.

References

- Berkes, F. (2007). Understanding uncertainty and reducing vulnerability: lessons from resilience thinking. *Natural Hazards, 41*(2), 283-295. doi: 10.1007/s11069-006-9036-7
- Chen, S. L., Tsai, J. C., & Lee, W. L. (2008). Psychometric validation of the chinese version of the illness perception questionnaire-revised for patients with hypertension. *Journal of Advanced Nursing, 64*(5), 524-534. doi:10.1111/j.1365-2648.2008.04808.x
- Decker, C., Haase, J., & Bell, C. (2007). Uncertainty in adolescents and young adults with cancer. *Oncology Nursing Forum, 34*(3), 681-688. Retrieved from EBSCOhost.
- Figueiras, M. J., & Alves, N. C. (2007). Lay perceptions of serious illnesses: an adapted version of the revised illness perception questionnaire (IPQ-R) for healthy people. *Psychology & Health, 22*(2), 143-158. doi:10.1080/14768320600774462
- McCaughrin, W., & Mattammal, M. (2003). Perfect storm: Organizational management of patient care under natural disaster conditions. *Journal of Healthcare Management, 48*(5), 295. Retrieved from EBSCOhost.
- McCormick, K. M. (2002). A concept analysis of uncertainty in illness. *Journal of Nursing Scholarship, 34*: 127–131. doi: 10.1111/j.1547-5069.2002.00127.x
- Mishel, M. H. (1988). Uncertainty in illness. *Image: Journal of Nursing Scholarship, 20*, 225-231.
- Penrod, J. (2001). Refinement of the concept of uncertainty. *Journal of Advanced Nursing, 34*(2), 238-245. doi:10.1046/j.1365-2648.2001.01750.x
- perception. 2011. In *Merriam-Webster.com*. Retrieved June 29, 2011, from <http://www.merriam-webster.com/dictionary/perception>

- Pronovost, P., & Goeschel, C. (2010). Viewing health care delivery as science: challenges, benefits, and policy implications. *Health Services Research, 45*(5 Pt 2), 1508-1522. doi:10.1111/j.1475-6773.2010.01144.x
- Spence, P. R., Lachlan, K. A., & Burke, J. M. (2007). Adjusting to uncertainty: Coping strategies among the displaced after hurricane Katrina. *Sociological Spectrum, 27*(6), 653-678. doi:10.1080/02732170701533939
- Stewart, J., Mishel, M., Lynn, M., & Terhorst, L. (2010). Test of a conceptual model of uncertainty in children and adolescents with cancer. *Research in Nursing & Health, 33*(3), 179-191. doi:10.1002/nur.20374
- temporality. 2011. In *Merriam-Webster.com*. Retrieved June 29, 2011, from <http://www.merriam-webster.com/dictionary/temporality>
- uncertainty. 2011. In *Merriam-Webster.com*. Retrieved June 6, 2011, from <http://www.merriam-webster.com/dictionary/uncertainty>
- LÜBKEN, U., & MAUCH, C. (2011). Uncertain environments: Natural hazards, risk and insurance in historical perspective. *Environment & History, 17*(1), 1-12. doi:10.3197/096734011X12922358301012
- Vaismoradi, M., Salsali, M., & Ahmadi, F. (2011). Nurses' experiences of uncertainty in clinical practice: a descriptive study. *Journal of Advanced Nursing, 67*(5), 991-999. doi:10.1111/j.1365-2648.2010.05547.x
- Walker, L. O., & Avant, K. C., (2011). Concept analysis. *Strategies for theory construction in nursing* (pp. 157-179). Upper Saddle River, NJ: Pearson.

Figure 1

