

# State of Science, “Intuition in Nursing Practice”: A Systematic Review Study

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## ABSTRACT

**Introduction:** There were many attempts for introducing “intuition” to nursing practice, But despite the efficacy, it has been ignored as a valid way of knowing. Therefore the current study was conducted for evaluating the state of sciences to intuition in nursing practice.

**Materials and Methods:** In a systematic review study, all researches, published from 1995 to 2014, were searched in the databases of “PubMed”, using “intuition” and “nursing” keywords. The abstract of articles were read in scrutiny, then the related researches selected, thereafter the full text of them was assessed carefully.

**Results:** From searching the databases, 144 articles with “intuition and nursing” were found, 53 as original research, and 15 with inclusion criteria were selected. Most of the studies had qualitative approaches design as phenomenology (N=4), content analyses (N=2) and grounded theory (N=1), six was done for developing the instrument, and two studies have been conducted as descriptive method.

**Conclusion:** The results revealed the researches about intuition in nursing mostly were conducted with qualitative and instrument developing methodology and there is a lack of quantitative and trial studies.

**Keywords:** Clinical decision-making, Intuitive judgments, Rational

## INTRODUCTION

Judgment and decision are made on “rational” and “intuition” approaches [1]. The rational is assessed by many researches, but intuition has been known as a questionable method [2,3]. However, due to high quality and accuracy of intuitive judgments, the researchers believe in its privilege to rational [1,4], some also have featured that the decision-making ability of a person is related to the intuitive power [4].

Intuition is literally defined as “presence”, “visible”, “clear” and “insight”. In other word, it is a human ability for knowing or doing without adequate reasons [4] also, is a way to recognition of the truths without rational thinking [5]. The electrophysiological studies confirmed the existence of intuition, and proved its emanation from the frontal cortex of brain [6-10]. Further investigations with using Electrocardiography (ECG), heart rate variability and Electroencephalography (EEG) concluded that the human brain can predict some especially risky and threatening events in the future; in this case the brain and heart have interactional relationship for receiving, processing and decoding the intuitive messages [11-13].

Recently intuition has been considered as a way of learning [14,15], also as a type of legitimate knowledge in nursing [16], this is differ to determined philosophical underpinnings of other disciplines [17]. Nursing knowledge is achieved through empirical, aesthetic, personal and ethical knowing [18,19], while intuition demonstrated as “art of nursing” or aesthetic knowing [2], other believed intuition is a “tacit or personal knowledge” [20-22]. Benner stressed on using intuition by expert nurses for providing patient care, but there are low evidences to verify it [23].

Nowadays, nursing has been focusing on evidence base practice; hence, this positivist way causes neglecting the tacit or intuition knowledge [24]. Lack of attention to all approaches of knowing with solely focusing on “rational” is an obstacle to enhance intellectual abilities of nursing students [25]. In this regard Rew and Barrow stated, intuition is a main component of decision-making and judgment in nursing [26], while, proper decision-making and judgment are the main characters of a knowledgeable and skillful

nurse [27]. Intuition also has a significant role to recognize the best nursing ethical measures [28,29], reducing mortality rate of patients [30], managing the crises in undetermined conditions [31] and diagnosing the deterioration of client's vital signs [32]. However, due to the lack of evidences, the concept of intuition is no obvious completely in nursing [33].

The researches maintained the Intuition could be information-based and measurable [10,34], moreover a few data are available [35]. Given, the difficulties related to scrutiny and quantifying the intuition, and analytic orientation of health systems, intuition has been offered as an invalid and nonscientific thought [36,37], accordingly, for incorporating this concept in educational curriculum and increasing the confidence to its results, the researchers believed that “intuition” must completely be understood in nursing [38]. With regard to the benefit effects of intuition over nursing care, lack of related comprehensive information, and dispersion of the documents, this study was aimed for assessing the state of science to intuition in nursing practice by reviewing the literature.

## MATERIALS AND METHODS

This study was conducted as a systematic method by reviewing the literatures for twenty years, from 1995 to 2014. Garrard approach [39] was applied for investigating the related researches from authentic scientific databases of “PubMed”, and “SID” by using the key words of “Intuition” and “nursing” in English and Persian languages. The inclusion criteria consisted of; the researches that have been conducted as original studies such as qualitative, quantitative or mixed methods design during twenty years from 1995 to 2014; there are “Intuition” and “nursing” in their title or abstract, and “intuition” is the main concept of them. The manuscripts with non-nursing area, review and meta-analysis investigations excluded from the study. For selecting the related articles, first the “intuition” and “nursing” were searched to the databases, then the title and abstract of the quested papers (144 cases) were scrutinized, thereafter the related articles which had inclusion criteria were chosen, in order to extract the key martials, the researcher read the full text of them carefully.

## RESULTS

From the 144 articles published between 1995 and 2014 [Table/Fig-1], 53 had original research design, 15 which met the inclusion criteria and focused on "Intuition in nursing" were selected, all of them have written in English, there was no published article about intuition in Persian databases. Seven of the researches had qualitative methodology including; phenomenology (4 cases), grounded theory (1 cases) and content analysis (2 cases), Six have been conducted for developing an intuition instrument, and 2 remained were as descriptive- analytical [Table/Fig-2]. There are many definition about "Intuition in nursing" some of them noted in the [Table/Fig-3].

Date →	1995-1999	2000-2004	2005-2009	2010-2014	total
Study ↓					
Commentaries	20	29	13	15	77
Case study	0	0	0	1	1
Original research	9	21	13	10	53
Review	2	2	1	3	8
Systematic review	1	1	2	1	5
Total	32	53	29	30	144

**[Table/Fig-1]:** The documents from literature review cited intuition and nursing in their abstracts/title.

### Phenomenology

Four of the studies had phenomenological approach, which aimed to reduce the abstraction level of intuition by describing meaning of intuition in nursing. The participants were ten to sixteen who had a history of intuition experience, recruited from emergency and primary care units as purposive method. The central concept of all descriptions was "feeling" which usually demonstrated in negative term for predicting deterioration or death of patients. The feeling was not justifiable by rational reasons, it has demonstrated in Kosowski and Roberts study [40] as "having a very bad feeling", "feeling uncomfortable", "feeling there was something terribly wrong", "something missing" or there was "something they had not done". Following these negative perceptions, some reported visceral reactions, including feeling "twisted inside," "churned up," and "haunted" to certain clients. In Lyneham studies also these feelings were accompany to gastrointestinal signs such as vomiting and worries which differ to other stressful situations on fight and flight [41,42]. Ruth Shad et al., also concluded intuition is a "gut feeling", and an unknown fear to describe the intuition, which would attributed to the God, individual internal wisdom, and personal characteristics such as having clinical experience, being open mind, being curiosity, creativity and empathy to patients [43]. These feelings were entered to the brain unconsciously, without prior background, following that the nurses would effort to validate their senses by more assessing and caring of patients until being satisfied, but in some case, due to its obsessive state, yielded the blame of colleagues [4]. In Ruth Sahd et al., viewpoint, "relationship to patients" is a prerequisite to form the intuition that stated as "being in time and space", means proximity of nurses to patients in all level and more communicating to them [43]. Lyneham et al., have pointed, this relationship is not as physical, but it is in spiritual state when both nurses and patients are in beside of each other in the same space [42]. For verifying the intuition feelings by objective data, nurses have more dealing with the patients, in opinion of Kosowski and Roberts [40]. There is a special "trust" to the intuition in all researches which was various based on the setting conditions. This trust is intensified by gathering the objective information and being concurring with the counterpart's ideas about patients. Finally the intuition made more carefully attention to patients by doing holistic caring, also caused the nurses satisfaction. In counter, neglecting the intuition resulted in failing to patient's therapeutic process.

### Content Analysis

These researches included two studies, explored the understanding of "intuitive knowledge", "intuitive ability", "intuition and clinical competency" and decision-making process among nurses. The participants were nurses working in cancer, fertility, surgery and critical care units which recruited as purposive method. Data was gathered using focus group, interview and observation. In Traynor et al., study, intuition was considered as a personal character that guided the first stage of rational decision-making process of nurses, meanwhile this intuitive decision-making have been reduced by high workload and organizational strict bureaucratic laws, clinical experiences also led intuitive feeling to take best decision [22]. King and Clark concluded the novice nurses have stressed more on working duties and monitoring the patient's objective symptoms, after that they received intuitive feelings as vague unpleasant or enjoyable thoughts; consequently they experience many confusion and anxiety about negative thoughts. They were unaware of the meaning of their feelings and how to respond them, so refused to express about it. With increasing the clinical expertize the nurses have more confident to intuitive feelings for making judgment and decision in complicated nursing conditions. Avoiding the worsening of patients, intuition stimulated expert nurses to scrutiny the patients and being ready to take appropriate immediate action [44].

### Grounded Theory

There was only one research about intuition in nursing conducted through grounded theory approach during the period time of study, which aimed to "evaluate intuition role, explore nurse understanding of intuition and its application in nursing fields, and determine the effectiveness of intuition in nursing practice". With discussion to 262 nurses, the researchers found the intuition is not a phenomenon that will been happen immediately, moreover it is the result of complex interaction of knowledge, experience, expertise, personality, environment, accepting the validity of intuition, and relationship between nurse and patient. The core concepts of the theory were knowledge, experience and expertise, which in a synergic engagement, they lead to emerging the intuition and following it the physical and sensory response will be occurred. The environments as a secondary agent could have positive or negative effect; in improper environments, the intuition ability of nurses will be reduced [45].

### Instrument Developing

Six study have been executed to develop instrument about "use of intuition to decision-making by nurses" [46,47], and "application of intuition in nursing students" [14,48-50]. The sample size was varied from 79 to 421 individuals. The items were between 7 in Rew instrument [46] to 26 in Smith et al., tool [50]. The conceptual framework of Smith instrument was formed based on literature review, whereupon three main concept of "physical awareness", "emotional awareness" and "making connection" have been emerged, which there was a non-linear connection among them. In Smith study these concepts increased to seven factors including "physical sensations", "premonitions", "spiritual connections", "reading of cues", "sensing energy", "apprehension", and "reassuring feelings". Smith concluded Intuition is applied and comprehended as same as expert nurses by nursing students [49]. Due to the shortcomings and high attrition in sampling, Smith revised her instrument in 2006 with participating 326 nursing students for psychometric process. The modified version was found with 6 factors and 26 items, in which two items of "premonitions" and "apprehension" have been removed and "Feelings That Forewarn" was added [50]. Smith and Glaser conducted a study to confirm the factor analysis of Smith instrument over nursing students, while 7 factors have been found [14], in another study, this tool also used to registered nurses, in which it was declined to 18 items in 4 factors [48]. In Demir

Author/authors	Aim	Sample size	Results	Ref.
<b>Phenomenology (N=4)</b>				
Lyneham, Parkinson, Denholm	exploring the experience of intuition in emergency nursing	14 emergency nurses	three distinct phases about intuition was emerged: cognitive intuition, transitional intuition, embodied intuition,	[41]
Lyneham, Parkinson, Denholm	Exploring the experience of intuitive knowing in emergency nursing practice	14 emergency nurses	the results revealed six emerging themes as knowledge, experience, connection, feeling, syncretism and trust	[42]
Kosowski, Roberts	discover, describe, and analyse the stories of novice NPs who use intuitive decision making with clients	10 registered nurses	Six themes were emerged: reflecting, backing it up, knowing the rules, playing the game, learning lessons, and taking care	[40]
Ruth-Sahd, Tisdell, Elizabeth	determine the meaning and use of intuition in novice nurses	16 novice nurses	three dimensions have been revealed: prior experiences were influencers to novice nurses; connections were central to making meaning through intuition; time, space, and touch proved to be significant in facilitating intuition	[43]
<b>Content analysis (N=2)</b>				
King, Clark	Exploration of nurses understanding and use of intuition in the context of their practice.	61 critical care nurses	The most fluent and effective use of intuitive and analytical components of decision-making was found in the expert group	[44]
Traynor, Boland, Buus	examine how nurses represent professional clinical decision-making processes	26 registered nurses	The nurse's decision-making influenced by both indeterminate and technical features. They pointed out their personal 'experience' and intuition as final arbiter of decision-making.	[21]
<b>Grounded theory (N=1)</b>				
McCutcheon, Pincombe	Evaluating the role of intuition, examining nurses' understanding of intuition and assessing the impact of intuition on nursing practice.	262 registered nurses	The theory that emerged from this study provides nurses with a way of articulating their understanding of intuition and their perceptions of its use in nursing practice.	[45]
<b>Instrument development (N=6)</b>				
Demir, Denat, Khorshid, Eser	testing the validity and reliability of the Turkish version of the Scale of Use of Intuition by Nursing Students	250 nursing students	a valid and reliable questionnaire of Intuition was developed, including 25 items and 4 factors of "emotional awareness", "physical awareness", "spiritual connections" and "physical sensations"	[48]
Smith, Thurkettle, la Cruz,	Describing the development and psychometric testing of an instrument to measure use of intuition by nursing students.	349 nursing students	A twenty five items questionnaire with 7 factors was emerged, the factors including, physical sensations, premonitions, spiritual connections, reading of cues, sensing energy, apprehension and reassuring feelings.	[49]
Smith	evaluate the psychometric properties of a revised intuition instrument developed for nursing students	326 nursing students	A 26-item intuition instrument with 6 factors was developed. The factors were labeled as "Feelings That Reassure", "Spiritual Connections", "Feelings That Alert", "Feelings That Forewarn, Physical Sensations That Alert, and "Reading Physical Cues".	[50]
Smith, Glaser	confirming the factor structure of the Smith Intuition Instrument for Nursing Students	421 nursing students	A seven-factor model obtained the best fit. The factors were labeled as "Good Feelings", "Spiritual Connections", "Reading Cues", "Bad Feelings", "Physical Awareness", "Physical Feelings that Alert", and "Sensing Energy"	[14]
Rew	developing and validating a scale to measure nurses' acknowledgment of using intuition in clinical decision making	112 nurses	A one-dimensional Instrument with Seven items was developed	[46]
Smith	administering the Smith Intuition Instrument to a sample of registered nurses	79 registered nurses	A 18 Items instrument with four factors including spiritual connections, reassuring feelings, physical sensations and bad feelings was confirmed	
<b>Descriptive-analytical (N=2)</b>				
Pretz, Folse	examining the relationship between domain-specific and domain-general intuition among practicing nurses and student nurses to determine the role of intuition in nurses' decision making	175 nursing students and registered nurses	Results revealed that preference for intuition in nursing was not related to general preference for intuition and the use of nursing intuition in domain-specific of skilled innovator increased with experience. But not about Physical/Spiritual Intuition	[35]
Cork	Exploring the validity of nurses' use of intuition in traumatic patients to predict the severity of their injuries.	419 records	There was a significant relationship between using the intuition and diagnosing the severity of traumatic patients injuries	[51]

[Table/Fig-2]: Scientific data set of intuition in nursing.

et al., study, who performed a study for cultural validation over Smith instrument in nursing students, also 25 item was placed in 4 factors [48]. Rew Instrument which have been made in 2000, for confirming intuition in decision-making, also has 7 items in one factor, so, respecting the low sample size to construct validity, and improper process of sampling, additional researches for reforming its structure have been recommended [46].

### Descriptive-Analytical

During the literature review two studies were found with descriptive-analytical methodology about the role of intuition

in decision-making [35], and nurses use of intuition to prediction the severity of trauma injuries [51]. In Pretz and Folse study, domain-specific and domain-general intuition among practicing nurses and student nurses were determined by some questionnaires such as Rational Experiential Inventory (REI) and Myers Briggs Type Indicator (MBTI) for domain-general intuition, also The Miller Intuitiveness Instrument (MI), Rew and Smith intuition tools for domain-specific intuition. The results showed there are differences between intuition concept in nursing compared to its general domain, reflecting its specialty in nursing, thus clinical experience just upgrade the domain-specific

Researcher/ researchers	Intuition definitions	Ref.
Lyneham, Parkinson, Denholm	Feel of knowing that something terrible is happening	[42]
Kosowski, Roberts	An immediate unconsciousness perception	[40]
King, Clark	Receiving something about somebody which no justified by reason	[44]
McCutcheon, Pincombe	Direct perception of truths independent to analytical process	[45]
Smith, Thurkettle, la Cruz	A non-linear process of knowing through physical awareness", "emotional awareness" and "making connection between them"	[49]
Rew	the act of synthesizing empirical, ethical, aesthetic, and personal knowledge	[46]
Pretz, Folse	Get a response unconsciously with a least effort	[35]
Cork	Awareness about "something wrong about patients" which not explained by existence data	[51]

**[Table/Fig-3]:** Definitions of intuition in nursing in scientific data set.

areas like "skilled innovator" and "self-confidence as an expert", while has no related to domain-general scopes such as spiritual and energy connection [35]. In Cork study, diagnosing the severity of trauma patients by intuition was correlated to performing it based on objective data, significantly, this represent the validity of intuition approach to evaluate the clinical status of the traumatic patients [51].

## DISCUSSION

The more concentration of reviewed studies was on qualitative approaches in order to legitimate the entity of intuition in nursing, reducing its abstraction level and recognizing its areas. Because the intuition is a more complex multidimensional abstract concept, hence for its understanding, the intuitive experiences of nurses must be intended [52]. Miller stated "Intuition" have incorporated to nursing from 1970s coincided with using qualitative researches to explore the non-objective constructs of nursing [53]. The reasons for using qualitative methods in these studies included undefined of intuition state in literatures and clinical areas of nursing, difficulties related to express the intuitive experiences [42], indistinctive the role of intuition in nursing [40], lack of evidences to using the intuition by expert nurses, and understanding the meanings of intuition in nursing more deeply [43]. With respect to non-generalizability of qualitative approaches, and carrying out the studies onto specialist groups of nursing, it is recommended more assessment over various groups and settings of nursing.

The ultimate goal of the studies was to create adequate theoretical base of intuition for incorporating it to nursing curriculum, in this case, for making the intuition more concrete, six of the studies performed to develop a valid and reliable questionnaire [35]. Indeed five of them were conducted in order to design the factor structure of the Smith instrument which four was undertaken by Smith et al., [14,47,49,50] and one by Demir et al., [48]. During the verification of this instrument in more studies, the factors have changed from 4 to 7 and Items were between 18-27. Due to a low sample size for validation and lack of items (7 cases), the Rew instrument also need to be revalidated [46]. Given the tool development is prerequisite for entering the intuition to nursing curriculum [14], it appears more valid and reliable instruments are required.

Two of the studies were undertaken to confirm the Benner theory [35,41]. Benner theory considered five stages of nursing competency, which commence from novice (first stage) to expert (fifth stage), accordingly, expert nurses have enriched experiences and more stressed on intuition for making judgment and decision in clinical Practice rather than analytical process [54]. Coincided this, Lyneham et al., classified intuition in expert stage into three distinct phases; cognitive intuition, where assessment is processed

subconsciously and can be rationalized in hindsight; transitional intuition, where a physical sensation and other behaviours enter the nurse's awareness; and embodied intuition, when the nurse trusts the intuitive thoughts [41]. In Pretze and Folse study, unlike the domain-general, only domain-specific of intuition was affected by competency level [35] and contrary to Benner theory, Smith et al., stated the intuitive experiences of nurses are similar to nursing students [49]. There are two problems to verify the Benner theory in view point of Cork [51] included; difficulties about assessing and measuring the abstract concepts of the theory and inadequate quantitative information about them. It seems using the Benner theory is very benefit for proceeding the clinical competency of nurses, hereof, for its verification more authentic qualitative, quantitative and trial studies are demanded.

Although some studies have been conducted, yet there are many restraints to understand intuitive thoughts among nurses, accordingly Ruth Sahd (2014) have indicated some of them: 1) Lack of a clear definition of intuition; 2) Strong belief in scientific rationalism; 3) Lack of understanding of how non-rational ways of knowing complement the rational; 4) Failure to identify how the intuitive mind may inform evidence-based practice; 5) Lack of discourse about intuition in education, research, or practice, even to acknowledge its efficacy; 6) Nurses' reluctance to appear foolish or engender conflict if they cannot provide a rationale for their actions; 7) Self-perception of lack of intuitiveness; 8) Overreliance on technology to validate the clinical picture; and 9) Fear that an intuitive action may be wrong [52]. Due to being more abstract nature of intuition, and inability of nurses to discuss about its vicinities, Rew and Barrow, in a review study, concluded intuition is still in descriptive and qualitative stage in nursing, in this case they suggested more quantitative researches with predictive and correlational methodology [3]. Truman have pointed intuition is the result of merging knowledge, skill and expertise which puts the nurses in higher level of competency [36], in this regard, for improving the intuitive ability of nurses some educational techniques such as "mind quieting exercises", "journal writing", "group brainstorming", "sharing intuitive exemplars", "creating a climate of curiosity and questioning that focuses on the experiences of the student", "promoting creativity with a futuristic perspective, and tolerance for uncertainty among the students", "developing objectives that focus on process and pattern recognition", "including intuitive experiences within the nursing process", and "encouraging students to assess patients using their sense and intuitive hunches" have been proposed [15,55,56], however there are no trial and quantitative studies to support this educational techniques, which may be returned to lack of valid and reliable instruments.

## LIMITATIONS

Searching the articles was done in PubMed and SID databases, and solely original researches were included to the review study, so it can be considered as a limitation, therefore it is recommended for conducting further investigations.

## CONCLUSION

The ultimate goal of the nursing researchers was to incorporate intuition in the educational curriculum, for this purpose the qualitative studies tried to reduce the abstract layers of the concept with classification of intuition in more clearly notions such as: "gut feeling", "knowing without reason", "apprehension", "spiritual connection", "fear with unknown origin" and "sharing energy", also in all researches, a type of "confidence to intuition" was mentioned. In instrument development studies, a more objective image of intuition has been considered and quantitative study concluded the expert nurses use intuition more than other qualified nurses. For reinforcing the nurses intuitive power, several educational methods have been suggested but regarding the lake of information and trials, "intuition" is not yet accepted as a plausible way of knowing in nursing education and practice, therefore, it is recommended the



next generation of research should move beyond description, be based on representative samples of nurses and nursing students, and include physiologic measures as correlates of subjective experiences. It is also recommended that nurses collaborate with members of other disciplines such as psychology, education, and medicine to design more complex studies that will further our understanding of this unique phenomenon.

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