



Laura Morán, EdD, EdM, BSN, RN Titular professor, Escuela Nacional de Enfermería y Obstetricia, Universidad Nacional Autónoma de México, Mexico. [eneolm@yahoo.com](mailto:eneolm@yahoo.com)  
& Yarisbeth Quezada, MSN, BSN,RN Programa de Maestría en Enfermería, Universidad Nacional Autónoma de México, Mexico. [yarisquezada@gmail.com](mailto:yarisquezada@gmail.com)

## Introduction

Clinical decision-making (CDM) is a complex process involving information processing, evaluation of evidence, and application of relevant knowledge to select nursing interventions that provide safe and high quality care, and reduce the risk of patient harm (Standing, 2007). A variety of analytical and intuitive conceptual models have been used to describe the CDM process focusing on critical thinking skills, reflection, clinical judgment, and problem solving (Tiffen, Corbridgen, Slimer, 2014).

CDM skills are developed in new nursing graduates as they face challenges in responding to challenging patient health problems, new technologies, and complex health care environments (AL-Dossary, 2013). It has been suggested that novice nurses tend to use analytical models in their decision-making processes, which are characterized as being more structured, slow, and often based on only a partial view of the total situation. (Benner & Tanner, 1987; Bjørk & Hamilton, 2011).

Lauri and Salanterä (2002) proposed four CDM models based on cognitive continuum theory (Hammond, 2000), and Benner's model outlining the stages of clinical competence (1984). Include a **fully analytical model**, a **fully intuitive model**, an **analytical-intuitive** model, and an **intuitive-analytical** model. In addition, they identified four stages of the CDM process (Figure 1).

In Mexico, bachelor nurses spend the first year after graduation providing social service, but usually it doesn't include structured orientation and mentorship.

## Purpose

The purpose of this study was to describe the cognitive models and skills used by new graduates in their social service, to guide their clinical decision-making during the four stages of the CDM process.

## Methods

A descriptive cross-sectional design was used.

The sample: 119 new nursing graduates in their one year of social service. They completed the "Nursing Decision-making Instrument" (Lauri & Salanterä, 2002), with 56 items ranked on a Likert scale to describe the predominant cognitive models used during the four stages of the CDM process, and to provide a measure of CDM skills (ranging from 0-224).



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Figure 1. Clinical decision making stages

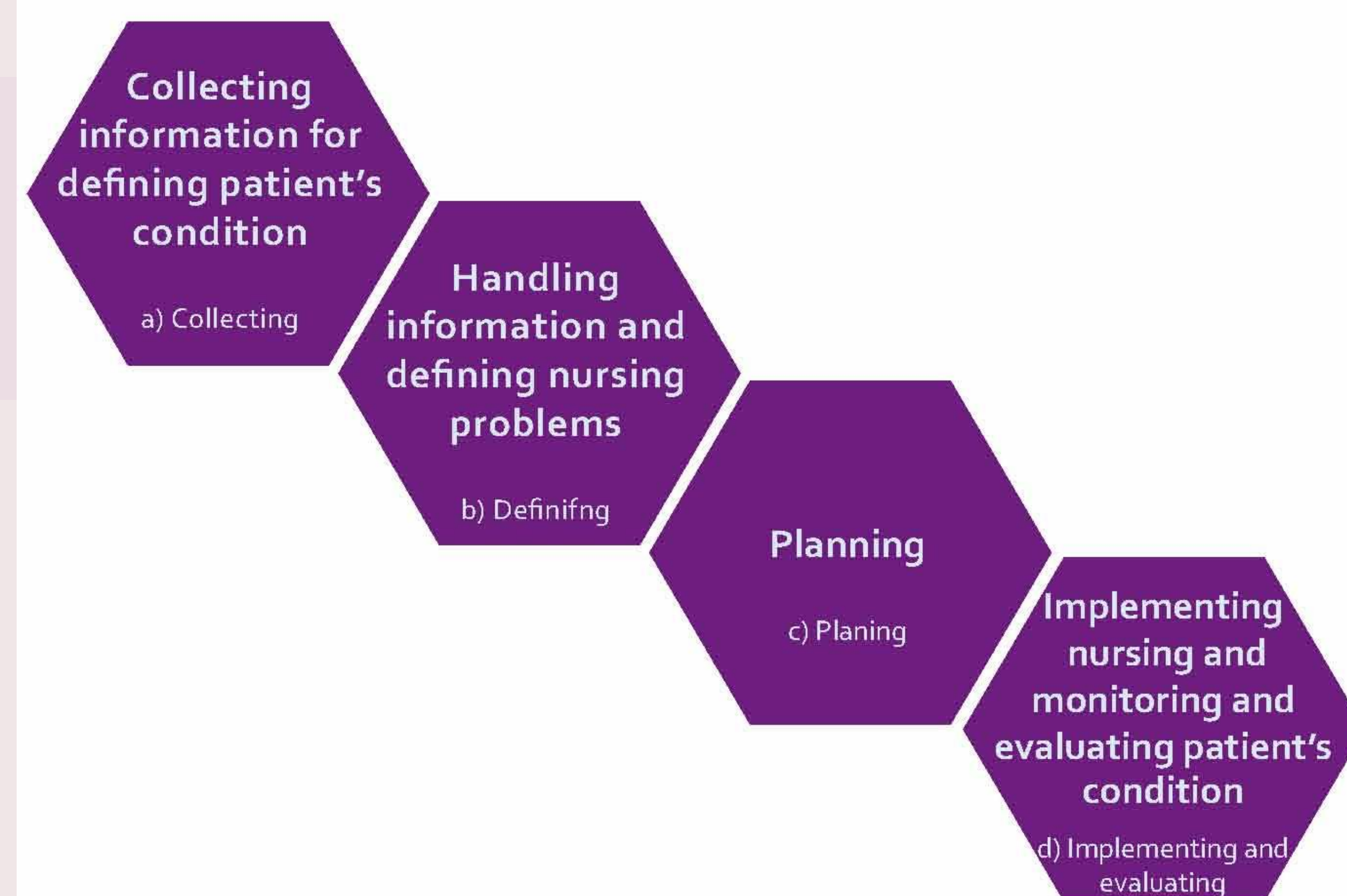
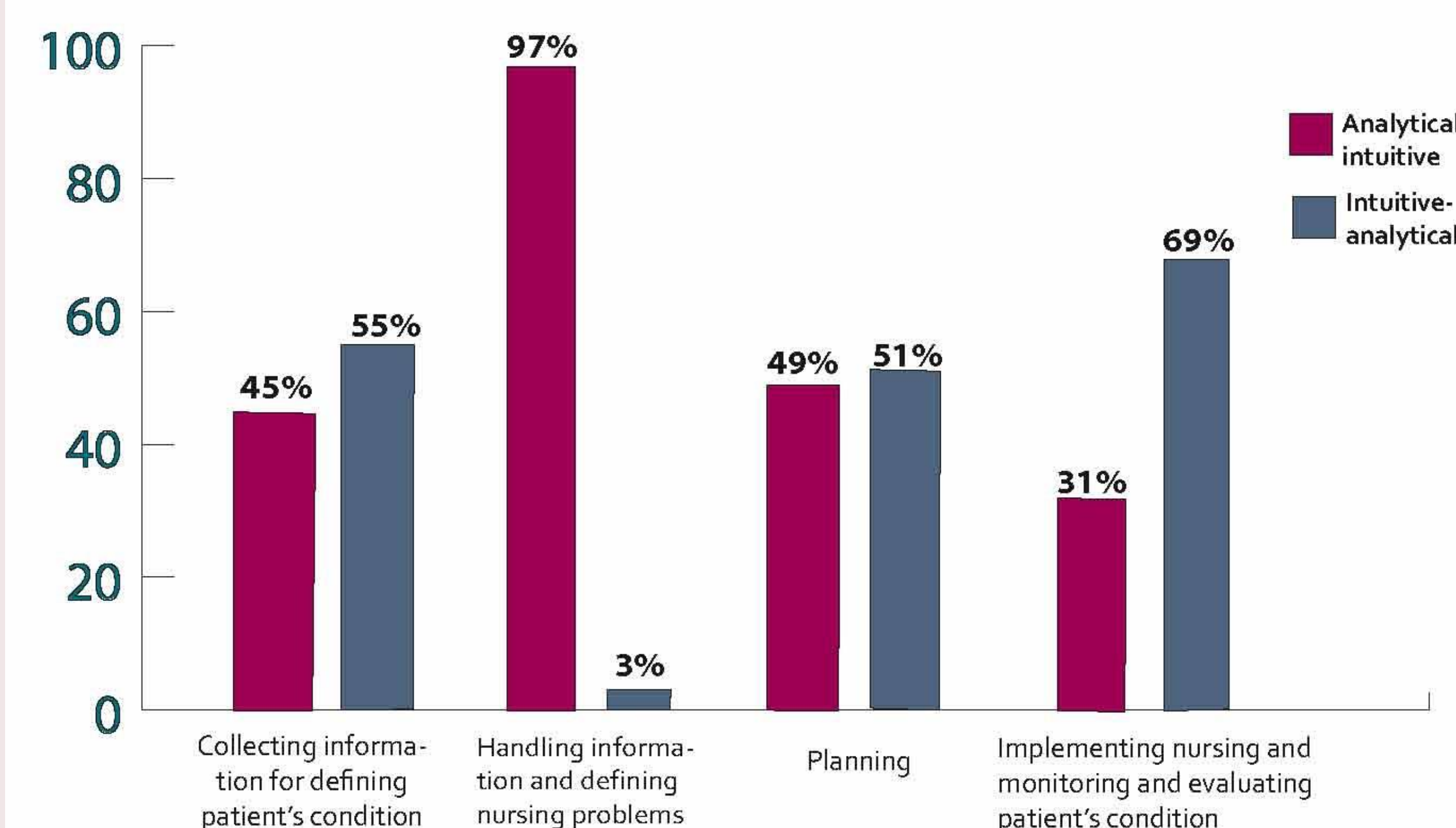


Figure 3. Predominant cognitive model by stage of clinical decision making



## Results

Figure 2. Predominant cognitive model in clinical decision making

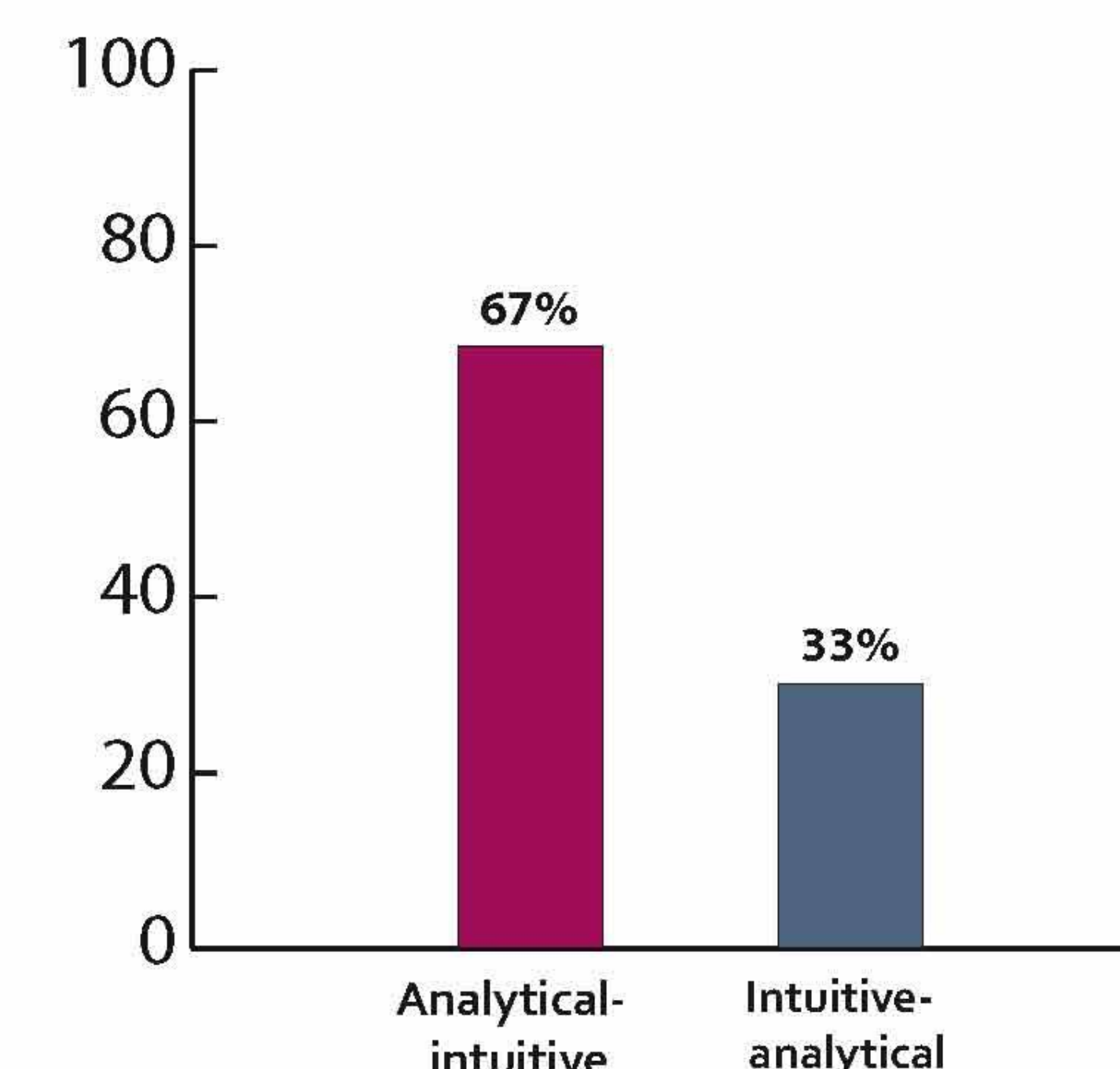


Table 1. Predominant cognitive clinical decision making skills

n= 119					
Dimension	Min	Max	Mean	SD	
Collecting information for defining patient's condition	36	54	42.69	3.154	
Handling information and defining nursing problems	31	45	37.70	2.812	
Planning	37	48	42.24	2.544	
Implementing nursing and monitoring and evaluating patient's condition	37	50	43.27	2.560	
Total	152	178	165.89	4.765	

## Conclusions

This study suggest that the primary analytical model used by the new graduates was the analytical-intuitive model, consistent with the stages of clinical competence proposed by Benner (1984).

The finding of low CDM skills in **identifying patient problems** suggests that basic and continuing nursing education programs should focus on helping students and new graduates learn to use clinical data to identify priority problems and plan patient care.

Also they need guidance to progress using more intuitive models so they can better recognize patterns and initiate nursing actions to solve complex patient problems.

Teaching strategies such as problem-based learning, case studies and simulated clinical experience can help them to develop more effective CDM skills and cognitive models.

Mentorship could support their professional development as critical thinkers who incorporate effective CDM models.

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