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Reconstructing the Thinking Process of Midwifery Care Management: An ADDIE Study

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ABSTRACT

Background: Midwifery management process has been used as a guideline in midwifery clinical learning. However, the management process that is used until currently has still been literally adopted from foreign sources which are not necessarily compatible with the understanding of most Indonesian midwifery student.
Purpose: this ADDIE study was therefore intended to formulate steps in the thinking process of clinical midwifery care. From this series of research steps, Nine Steps of J.M. Metha had been successfully composed.
Methods: This ADDIE (Analyze, Design, Develop, Implement, Evaluate) study was to formulate a clinical management mindset in midwifery. In the 'develop' section, R&D was used to create a product that could be used, for example, in the clinical learning of student midwives. In the 'implement' part, snow-ball sampling was used to extract the same anticipated data from the increasing number of participants. Finally, through FGD, participants' opinions, which were selected from 3 people because of data saturation, were analyzed using a phenomenological approach to see the phenomena that existed in the use of the created products.
Results: The Nine Steps of J.M. Metha were formulated, i.e., see who comes, listen to the client, examine the client, asses the client's condition, inform the client about their condition, plan actions for care, implement care having planned, evaluate the care having implemented, and return to number 1. Based on the opinions of the respondents, these nine steps had already resembled the real midwifery sequences in daily practices. It is then necessary to disseminate this simple, easy to apply midwifery thinking process for the sake of better quality of student midwives and midwifery practitioners.
Conclusion: These Nine Steps of J.M. Metha is likely to be suitable for use on the thinking process for midwifery care measures. A further study is therefore recommended with a larger scope of place and participants.

Keywords: *midwifery management process; nine steps; midwifery care; ADDIE.*

BACKGROUND

A clinical action , including in midwifery, must be based on critical thinking and clinical reasoning as it is the basis of all clinical decisions that midwives, for example, make (Cioffi, 1998). This makes the clinical actions carried out will prioritize client safety because this is the basis for all clinical actions, including those in the field of midwifery. To achieve this, a mindset that fits a logical sequence in handling clinical actions (Brady et al, 2018), needs to be formulated in a clear and simple manner that can be understood by all he alth professionals, in this case the midwives . Clinical process management here consists of a coherent and consistent set of methods and tools to discover, model, analyze, measure, improve, and optimize direct and indirect treatment processes.

Thinking processes that are in accordance with critical thinking and clinical reasoning will guide midwives in formulating realistic midwifery clinical management. Therefore, teaching this thinking process should not be carried out arbitrarily but must emphasize aspe cts of complete understanding in the heads of all midwifery students (Carter et al, 2017). By being given a thinking process that is not confusing, students will be able to better outline each case they face in clinical learning. In addition, the thinking is also beneficial when they handle clinical cases in real practice later when they become a midwife.

OBJECTIVE

It is therefore necessary to formulate a thinking process in proper clinical midwifery care that is adapted to the thinking patterns of Indonesians. Based on the sequence of clinical actions by health professionals towards clients, this study was aimed at reconstructing several sources of midwifery management (Varney et al, 2013; Nadiyah& Faaizah, 2015), so that the thinking abilities of prospective midwives in Indonesia as well as midwifery practitioners can be framed in a clearer and more directed way.

METHODS

This study was to formulate a clinical management mindset in midwifery using the AD DIE (Analyze, Design, Develop, Implement, Evaluate) method, which is one of the methods in research and development (R&D). ADDIE adopts the Input -Process-Output (IPO) paradigm as a way to complete the stages. The input phase reacts to the variables identif ied in the learning context by receiving data, information and knowledge (Robertson and Thomson, 2018). To conduct this research, the steps are carried out in accordance with the sequence:

I. **Analyze:** In accordance with the needs analysis, the thinking process in midwifery management for both students and midwife practitioners in Indonesia had to be made by promoting a pattern that was easily understood. Therefore, based on the management of midwifery a s read in the international literature, a simplification of this thinking process needed to be formulated.

II. **Design**: The design applied in this study was to look carefully at the sequence of clinical actions taken by one of the authors who had practiced well in a maternity home affiliated with doctors from Germany, teaching hospitals, and health centers in a span of more than 20 years.

III. **Develop**: After discussing with midwifery practitioners on the design of a thinking process formulation in midwifery man agement, the steps that midwives should have in mind were based on:
   1. Preparation of the initial (first) steps
   2. First validation from the practitioners
   3. Revision as an early stage development
   4. Second validation of the practitioners
   5. Revision as the final stage of development
   6. Third validation of practitioners (final)

   The authors acted as a research instrument asking practitioners based on interview guides about the clinical course of action of midwifery. Respondents at this stage were midwifery practitioners who met the following criteria:
   a. having worked in practice fields for more than 30 years regardless of academic level and
   b. being active in clinical learning of midwifery students as a clinical instructor.

IV. **Implement:** The results at the development stage were implemented in a limited way to midwives to find out whether the developed steps could be applied or not as a basis for thinking processes in clinical midwifery care.

V. **Evaluate:** Based on the 'implement' process, an evaluation using a phenomenological appr oach Gardiner (2018), to analyze what phenomena were obtained as long as the respondents used clinical sequential steps that had been successfully formulated. Respondents were selected by snowball sampling until the opinions of all respondents were the sa me or experienced saturation. Finally, the selected respondents who were presented in this study were 3 midwives collected through focused group discussion (FGD) activities regarding their opinions on the steps.

RESULTS

Each result of each step of ADDIE is presented descriptively to provide clarity about the process of compiling the 9 Steps of the thinking process in determining appropriate midwifery care.

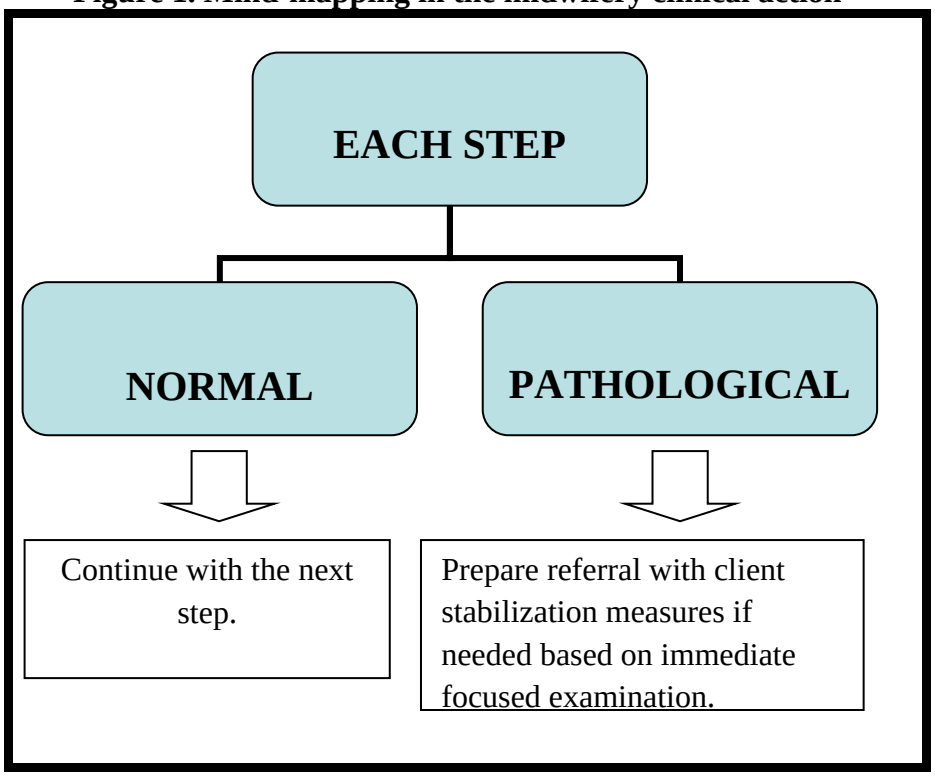
I. **Analyze:** The result of this step was that there was a need to reformulate the midwifery management as most sources used by Indonesian teacher midwives were taken from non -Indonesian ones. Therefore, after observation reading through some sources, the authors came to conclusion of the aforementioned statement.

II. **Design:** The design was based upon the tho ughts of three main ideas, i.e., what happened during the initial time of the midwife -client encounter, what midwife should do, and what to follow-up. From these ideas, the development would be easier to make as the breaking down of the ideas were determined.

III. **Develop:** After the series of the composition, validation, and revision, the final formula obtained in the ADDIE at the 'develop' stage was as follows (later decided to be named after the first author 'The Nine Steps of J.M. Metha):

1. See who comes,
2. Listen to the client,
3. Examine the client,
4. Assess the client's condition,
5. Inform the client about their condition,
6. Plan actions for care,
7. Implement care having planned,
8. Evaluate the care having implemented, and
9. Return to number 1

Figure 1. Mind-mapping in the midwifery clinical action



These nine steps contain ed separate philosophies in enforcing decisions based on critical thinking and clinical reasoning. With a simple and easy to understand explanation of each step, these steps were easier for midwives to perform their care in every phase of their encounter with clients. In addition, each step must include a screening process whether the client obtained is a client with a normal case or a pathological case that is no lon ger a case handled by a midwife (Figure 1). This screening wa s manifested in a "mind -mapping" which dire cted midwives or student midwives to think systematically and critically.

1. **Look who comes**: This step was the gateway to the midwife -client meeting. The midwife's 'inspection' skills were emphasized at this st age so that this stage provided data for the 'initial diagnosis' that occurred at the midwife -client meeting.

2. **Listen to the client:** This second step was collecting client's subjective data. The midwife then developed an anamnesis related to the reasons wh y the client comes or the complaint the client had. The complaint which was the main reason for the client to come was known as the main complaint. In addition to the main complaint or the reason for the visit, it might still require additional data relate d to the reasons for visiting or additional complaints (focused data).

3. **Examine the client** : It was objective data collection that was the result of developing 'see and listen' through examinations. Examinations carried out were general examinations (genera l physical examinations) related to complaints, midwifery examinations (for example, breast, abdominal, anogenetalia), and supporting examinations (for example, Hb, proteinurine, urine -reduction, ultrasound, or other examinations).

4. **Assess the client's con dition**: From the findings through seeing, listening, and examining, midwives had to be able to establish the conclusions of the client's condition which were facts and required follow-up.

5. **Inform the client's condition:** This was necessary for clarification so that misperceptions between client and midwife would not occur. One thing that midwives had to master was communication skills about "delivering bad news".

6. **Plan the treatment:** This step was to solve the client's problem that had been informed or clarified, so that the midwife planned actions according to the client's condition. Likely, the client needed follow -up, promotive, curative, preventive, and repeat visit information.

7. **Implement the care having planned:** What had been agreed/rejected by the client (with informed consent or informed refusal either orally or in writing that the client accepted or rejected) had to be implemented immediately.

8. **Evaluate the care having implemented** : Evaluation of what had been done consisted of evaluating data, processes, and results.

9. **Return to number 1:** The mindset (midwifery management) was a rapid sequence that occurred in the mind of a midwife. Lecturers had a very big responsibility in training the intuition and ability of each student to have a 'clinical logic' w hich 'works and is right'. Step 9 was expressed as a cycle if there was a change in data (both subjective and objective) after the implementation of the action and evaluation.

IV. **Implement***:* The authors implemented these steps in a forum called 'Midwifery Update' when a number of midwives gathered for the same purpose, i.e., to obtain knowledge about the most recent information on midwifery sciences. The participants in the forum (n=30) pract iced the steps by being provided some midwifery cases and were asked to order the client's care steps according to their daily midwifery measures.

V. **Evaluation:** Through the phenomenological approach, meaning that a qualitative study was being applied, all participants gave their opinions through FGD activities

with questions that had been directed by the authors (Table 1). However, based on snowball sampling, three midwife practitioners were selected to voice out their experience doing the Nine Steps (Table 1).

Table 1. The Respondents' Comments on the Final Product

No	Respondents	Comment
1.	Respondent 1	**Simplicity**: This formulation is easy to understand and in accordance with the midwifery clinical practice that is faced daily.
		Application: The Nine Steps of J.M. Metha is very easy to apply in clinical action in midwifery practices.
		Alertness: I have seen that, at every step, screening for normal or pathology has been much emphasized. That means, we are trained to always have a mind-mapping of all the cases we face and this makes us always alert even though we don't fall into a paranoid level.
		Conformance to real practice: It is particularly suitable when used as thinking processes in the management of clinical treatment in midwifery.
2.	Respondent 2	**Simplicity**: I am very easy to understand these Nine Steps and it is not complicated, like when we have to omit steps or even go back and forth (referring to the specific book commonly used in Indonesia for midwifery thinking processes.
		Application: It is really easy to apply as I do it every day.
		Alertness: The mind-mapping is what I like from these Nine Steps. Our alertness can clearly be initiated from the very first meeting with the client. This is one thing that builds our critical thinking. Yes, indeed we must always be alert, but we do not take this precaution as a rule if all midwifery cases are pathologies.
		Conformance to real practice: These Nine Steps are indeed in accordance with what midwives do in caring for clients.
3.	Respondent 3	**Simplicity**: I see these Nine Steps as a simple, purposeful sequence.
		Application: I understand these Nine Steps easily without having to think complicated, and I can also easily apply these steps in the clinical course of obstetrics.
		Alertness: With a clear explanation that every step contains alertness, I have become interested in honing my critical thinking and clinical reasoning skills at all times.
		Conformance to real practice: I am sure that the formulated Nine Steps of JM Metha is very much in line with real clinical

No	Respondents	Comment
		practice by midwives.

The comments given form ed the basis that the Nine Steps of J.M. Metha corresponded to a real sequence of events in midwifery clinical practices. Therefore, a more detailed explanation of each step is provided in the discussion section which will provide a clearer picture of each step of the Nine Steps. The three respondents revealed that the steps in 9 Steps not only seemed simple but also easy to do. In clinical situations, this is especial ly necessary when the clinician's thinking is guided by clear and unambiguous steps.

One respondent stated, "It is really easy to apply as I do it every day." This implied that these 9 Steps were very easy to perform in daily midwifery practice when they were dealing with clients. This prove d that something simple made everything easier to understand when a midwife should take an action. In addition, the screening included in each step meant that clients would be categorized into n ormal case clients or pathological case clients. This provided an opportunity for every midwife practitioner to always be alert and practice their reasoning skills as stated by one respondent, "With a clear explanation that every step contains alertness, I have become interested in honing my critical thinking and clini cal reasoning skills at all times."

Overall, the respondents concluded that the Nine Steps were very well suited to guide their thinking pro cesses. One respondent stated, " I am sure that the formulated Nine Steps of JM Metha is very much in line with real clinical practice by midwives." Therefore, this study, which can be called a study of product manufacturing, is ready for testing on a larger scale.

DISCUSSION

A. The explanation of the Nine Steps of J.M. Metha

When the client enters the examination room, the midwife should be able to obtain important initial instructions that may be useful in establishing the client' s condition at a later sta ge through inspection measures (Kee et al, 2018). It can also assist the midwife in asking focused questions in the anamnesis following this initial inspection. Inspection, or in other words, observation, is sometimes missed when the midwife is not focused on this midwife -client meeting or the midwife is in a hurry. The bottom line is that the first meeting between the midwife and th e client should be the midwife' s initial info rmation about the client with ' See who comes'.

Step two of Nine Steps of J.M. Metha is 'Listen to the client' . At this stage, midwives must begin to learn to understa nd the client' s complaints that are expressed to them (Biglu et al, 2019). This stage requires qualified communication skills so that the data obtained from this history is accurate. In fact, the communication skills of a health professional can also be related to the level of client satisfaction (Sleijser-Koehorst, 2020). Therefore, the ability to detect clients at the beginning of the meeting through inspection skills must be followed by effective communication skills in this second step.

The accuracy in the subjective data of the client from the results of the anamnesis will greatly affect the examination that will be carried out by the midwife. This will give the midwife room to think that the examination having to be done in step three 'Examine the client' should

be an examination that focuses on reaching an accurate conclusion. Conformity between the results of the anamnesis and examination and diagnosis is also an important part in other fields such as that of a study by Sleijser-Koehorst, et.,al. (2020).

Midwives must be able to infer the client's condition from the two types of data they have obtained, namely subjective and objective, so that conditions that may involve a particular problem or midwifery diagnosis can be enforced (Hage, 2014). This is what midwives should do in step 4 of Nine Steps of J.M. Metha (Assess the client's condition). From the correct conclusions, the midwife should also re-clarify the findings to the client included in the fifth step, namely 'Inform the client's condition'.

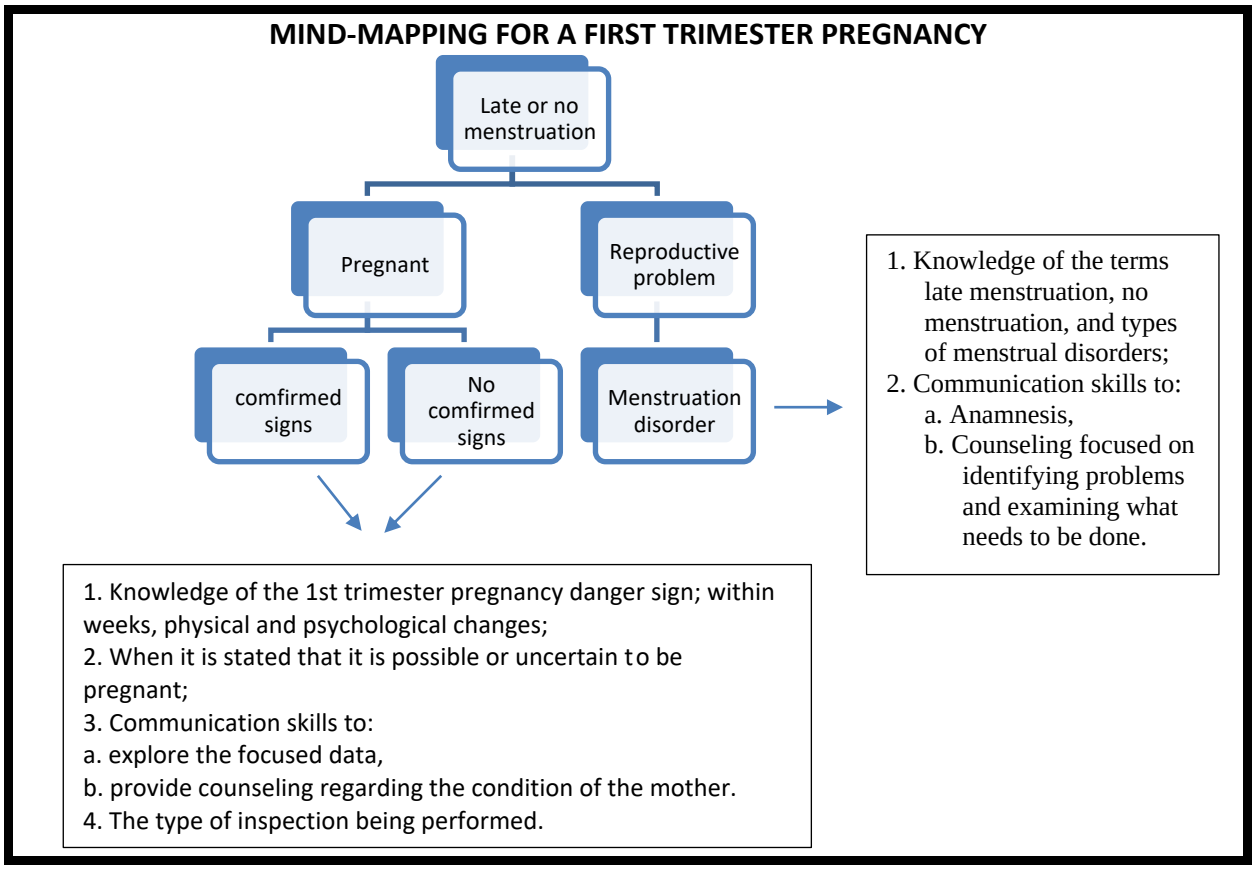
After the midwife informs the client's condition accompanied by clarification measures, the midwife must plan the care that will be provided together with the client (Step 6). This is emphasized because it is beneficial for the sake of clients' treatment when their participation is to be involved to determine their preferences in the planned treatment. The consequence is that the client can accept certain care or even refuse the care (Elwy et al, 2019). This will be proven by the presence of informed consent and informed refusal. Once the midwifery clinical action plan has been agreed upon by the client, the midwife will implement the action plan (Step 7).

Accompanying the implementation of actions, evaluation of actions should also be carried out by midwives (Step 8) (Arocha et al, 2005). At the Nine Steps of J.M. Metha, evaluation is divided into three. The first is data evaluation. The midwife should check if the data obtained is in doubt. As soon as possible, this check is carried out so that there are no mistakes when concluding the client's condition. The next evaluation is process evaluation. As soon as the procedure is completed, the assessment is carried out, for example, immediately after uterotonic administration, the uterus will contract or after education and demonstration of breast care, the mother is able to re-demonstrate how to care for the breast. The final evaluation is the evaluation of the results. This relates to the goals and results expected from the actions that have been taken. Likely, this cannot be assessed immediately and may not be as expected.

B. Mind-Mapping as a means of critical thinking and clinical reasoning in midwifery practice

Each midwife must be able to map her thoughts in every care that will be provided to her clients. With the guidance from the image in the mind-mapping that the midwife has in mind, each care will be completely based on clinical reasoning which will generate valid clinical judgment. In other words, clinical decision making must indeed be based on excellent critical thinking and clinical reasoning, Soto (2020) including the midwifery clinical practice. One example of mind-mapping in midwifery care is given in Figure 2.

Figure 2. An example of mind-mapping in a midwifery care by a midwife



This example of mind-mapping would be suitable to be given to student midwives who must have sharpened their critical thinking skills, clinical reasoning, and clinical judgment as early as possible (Biglu et al, 2017). Ideally, every midwife teacher should be able to create an algorithm like the one in this example. Apart from making it easier for student midwives to develop their mindset, this activity can also be done as a means of expressing their creativity. Of course, this mind-mapping should also be done by midwives in their daily midwifery care.

Regarding the Nine Steps and critical thinking and clinical reasoning, the stated cycle if there is a change in data (both subjective and objective) after the implementation of the treatment and evaluation must be taken into account. This is why the thinking process of clinical midwifery care cannot be separated from the topic of Continuity of Midwifery Care (CoMC) and recording SOAP for midwife's action plans. With the formulation of the Nine Steps of J.M. Metha, it is expected that the clinical action of midwives will be more focused and that student midwives can easily understand the thinking process for higher quality graduates.

CONCLUSION

With the thinking process of midwifery care management that matches the reality of clinical practice, the understanding of the users of the Nine Steps of J.M. Metha is easier to reach. This will likely make easier to include an understanding of critical thinking, clinical reasoning, and clinical judgment for student midwives for better quality midwifery education graduates in the future. Therefore, there is a need for further studies to include student

midwives on a large scale to prove the validity of these steps as an educational framework for students to apply prospective clinical learning steps they face throughout their midwifery education life.

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