

Competency Analysis of Midwives in Providing Complementary Services at Bali Provincial Health Centers

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Abstract: Background: Complementary services in providing care to mothers and children by midwives are common. Standards related to complementary skills procedures still vary widely. Methods: The study design was in the form of pretest - posttest with control group design. The sample is midwives who are still actively providing midwifery services at the Health Center and the private midwife practice. A sample of 65 midwives from six health centers spread over three districts and cities in the province of Bali. Results: The research instrument used a questionnaire and skill observation sheet. The results showed that the characteristics of midwives were the average age of the midwives was 37.92 years, the highest education level was diploma III midwifery, and the average length of work was 15.43 years. There is a significant increase in the score between the pretest and posttest scores of knowledge, motivations and skills of midwives. The results of linear regression analysis on all variables showed that the difference in knowledge scores was 36% ($R^2=0.36$), motivation scores were 22% ($R^2=0.22$), and the difference in midwifery skill scores was 72% ($R^2=0.72$). The midwife's response when receiving the training was very interested and enthusiastic. The training provided a significant difference in increasing the knowledge, motivation and skills scores of midwives. Conclusions: Midwives need to be provided with continuous training, competent media and instructors, there is a clear laws and regulations for midwives in providing complementary services.

Keywords: Complementary services; knowledge; motivation; Skills; training media

1. Introduction

Complementary services in midwifery in global are not something new and are routinely provided (1–5) . For example, studies related to the use of herbal medicine (HM) in Nepal for postpartum mothers (6) . A study on preparing the delivery environment using aromatherapy, music therapy and relaxation techniques at a midwife's independent practice in Klaten, Central Java of Indonesia (7) . Another study in Finland on the use of aromatherapy and hydrotherapy in obstetric (8) . Utilization of herbal medicine (HM) as well as complementary and alternative medicine (CAM) varies widely (6, 9–14) .

The classification of complementary traditional services provided according to the Regulation of the Minister of Health of the Republic of Indonesia Number 15 of 2018 concerning the Implementation of Complementary Traditional Health Services, in the form of manual techniques, energy therapy and mind therapy. If viewed from the way of treatment or treatment in traditional and complementary care is done using skills, potions even combine skills and potions. The provision of complementary and traditional care services as stated in the regulations in each region is not the same (11–16) . The use of complementary and traditional therapies to treat sick babies under three months old in Jordan is very popular, even though their use is not based on applicable regulation (4) . The utilisation of CAM is more widely used by pregnant and childbirth women aged between 19 - 49 years compared to women who are not pregnant and giving birth in the United States. The most widely practiced CAM method is mind and

soul therapy (5) . A study in Nepal found that respondents mostly consumed warm ginger concoction to treat nausea in pregnancy, turmeric, lemon tea, and olive oil (1) . Studies in Indonesia, especially in several districts and cities such as in Klaten and Denpasar City regarding the use of complementary services, are the use of aromatherapy and frangipani oil for perineal massage (7, 17) . The study in Klaten obtained the use of massage, hypnotherapy, acupressure, the use of herbal medicine/traditional herbs and yoga (7) .

Community needs related to complementary and traditional care in the field of midwifery are getting higher, becoming a challenge for midwives. The unavailability of a legal basis regarding the competence and authority of midwives in complementary midwifery services and the unavailability of Standard Operating Procedures requires special attention. Based on these problems, a complementary service skills guide was compiled in the form of videos and textbooks for midwives. An initial study in Denpasar City found that midwives at the health centers and in private practice had provided complementary services, but had not received special education and training on complementary services (18) . The purpose of the study was to assess the use of videos and textbooks to increase the knowledge, motivation and skill scores of midwives in providing complementary services for clients. Training for midwives related to complementary midwifery services is expected to give a new color to midwifery services.

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2. Materials & Methods

This type of research is true experimental, with a pretest - posttest research design with control group design. The groups were divided into an intervention group (2 groups) and a control group (1 group). The first intervention group was given training media in the form of videos and the second intervention group was given training media in the form of textbooks. The control group is the group that is given training materials using standard media used in the health centers. The samples involved in the study were midwives on duty at the health centers and in the private midwifery practices who provided midwifery services. The number of samples for each treatment and control group ranged from 14 to 33 people depending on the number of midwives in the health centers. The number of health center involved was that two health centers were selected in each district and city in Bali Province. The number of all health centers involved was six health centers. Data collection activities started from June to September 2021. Data collection activities began with pretest, training and posttest of knowledge, motivation and skills of midwives in providing complementary services to clients. The instruments used are questionnaires and observation sheets. The training media uses videos and textbooks that have been discussed with experts in the field of complementary and traditional therapies from practitioners and academics. Data analysis using STATA program.

3. Results

The number of respondents who were willing to be involved in the study were 65 people from six health centers in Bali Province. The characteristics of the midwives observed in the study included the age of the midwife, length of work, education level, employment status, and history of clinical and complementary midwifery training. The youngest midwife is 23 years old and the oldest is 54 years old. The period of work or length of work of midwives at the health center is from 6 months to 31 years. Most of the employment status at the health center is as a government employee ranging from 40% to 100%. The education level of most midwives is Diploma III in midwifery, which ranges from 71.4% to 100%. Midwives with Bachelor of Applied Midwifery degree are still very limited, ranges 12.5% to 21.1%.

The history of midwives who have attended training related to midwifery clinic skills in the last 5 years ranges from 38.5% to 100%. The number of midwives who had attended complementary training ranged from 14.3% to 28.6%. Most of the midwives admitted that the results of the training were difficult to apply. Midwives who have attended clinical midwifery training vary between health centers. Midwives who have never attended complementary midwifery training ranged from 70.4% to 90%. The number of complementary midwifery training that was attended ranged from 1 to 2 times. As many as 2 (15.4%) to 4 (57.1%) midwives said that the results of the training could be applied to midwifery services. Barriers to the application of the training results were felt by almost all of the respondents. The number of midwives who stated that the health center did not have complementary service programs were 2 (25.0%) to 5

(71.4%). The types of complementary midwifery services that have been carried out to clients include exercise for pregnant women, yoga, oxytocin massage, herbal ingredients in pregnancy and perineal massage. Table 1 below shows an overview of the training history and provision of complementary midwifery services.

The results of the analysis regarding the difference in pretest and posttest scores obtained a significant increase in knowledge, motivation and skills scores from pretest to posttest scores in the video and textbook intervention group ($p < 0.05$). The lowest score for motivation pretest is 32 and the highest is 64 while the lowest motivational score for posttest is 46 and the maximum score for motivational posttest is 70. The minimum score for the skill pretest is 187 and the maximum score is 225. The minimum score for the skill posttest is 198 and the maximum score for the posttest is 254.

The results of the different test scores of pretest and posttest simultaneously in two intervention groups and one control group showed that there was a very significant difference in pretest and posttest scores in the intervention group 1 and 2 ($p < 0.001$), and there was no significant difference in the control group ($p < 0.001$). $p > 0.05$). The difference in the posttest score compared to the pretest on knowledge was higher in the intervention group using videos ($\Delta = 2.8$) and pocket books ($\Delta = 2.2$), in the control group ($\Delta = 0.5$). Table 2 below shows the results of the analysis regarding the difference in the mean pretest and posttest scores of midwives' knowledge, motivation and skills.

The results of the analysis of the knowledge, motivation and skills variables simultaneously with textbook, video and control media were obtained that there was a significant difference in the average score on the knowledge, motivation and skills of midwives in the intervention group ($p = 0.001$), and the difference in skill scores was the most significant ($p = 0.0001$). Table 3 below show the average of difference in knowledge, motivation and skill scores.

The results of the correlation analysis between the characteristics and the increase in the knowledge, motivation and skills scores of midwives showed that the length of work of midwives was negatively correlated with motivation ($p = 0.02$) and $r = - 0.27$ (table 4). The correlation is very weak. This shows that the longer the working period of the midwife will decrease the motivation by 27%. In other characteristics of midwives did not show a significant correlation even very weak correlation.

The results of multivariate analysis showed that the characteristics of midwives were not significantly related to knowledge, motivation and skills in complementary services ($p > 0.05$). There was no significant relationship to the increase in motivation scores in the group of midwives who received an intervention using video ($p > 0.05$). A very significant difference in scores was seen in the score of knowledge, motivation and skills in the intervention group in the form of textbooks ($p = 0.0001$). That the difference in knowledge scores of 36% is influenced by intervention factors using textbooks, videos, age of the midwife, length of work and time to start providing complementary services

simultaneously, the remaining 64% is influenced by other factors not analyzed in the study. Likewise, the difference in motivation scores of 22% is influenced by these factors simultaneously and the remaining 78% is caused by other factors. The difference in the midwife's skill score of 72% is influenced by these factors simultaneously and by 28% is influenced by other factors not examined in this study (table 5).

4. Discussion

The characteristics of the respondents, in this case the midwife, including age, last education level, and length of service in several previous studies are still controversial. The results of the study obtained that there was a relationship between the characteristics of the respondents and the success of the training, on the other hand there were results that obtained no significant relationship. Generally, age is associated with cognitive and experiential maturity. Under certain conditions, such as that the training material is something new or has never been done before, it is an inhibiting factor for the success of the training (19, 20).

Under certain conditions, the level of education is not related to certain knowledge, motivation and skills. The results of this study can be explained that the success of training is influenced by various factors. Factors in the form of education level, knowledge, skills of previous employees, work environment, are significantly related to training outcomes (21, 22).

Previous work experience has no effect on improving the results of the evaluation of knowledge, motivation and skills due to limited experience in finding certain cases that are required. The right parameters in the organization's efforts to achieve its goals are in the form of training and workforce development related to training and development. Training provides new experiences for the workforce to increase knowledge, work motivation and employee skills (23–25).

Training is an important step to improve the skills of employees or trainees, especially to develop competitive abilities in the work places (20, 21, 26, 27). The results of this study show that training has a correlation of 72% to increase the knowledge, motivation and skills scores of midwives regarding complementary midwifery services. Training is also known as an effort to improve the quality of human resource (28). The motivation of workers or employees is one of the main factors that influence certain behaviors. Certain behaviors are directly influenced by intentions or motivations, in this case intentions are influenced by attitudes, knowledge, control believe and

normative believe as well as environmental factor (29, 30). Behavioral theory that is still very relevant to determine the factors related to behavior is the Integrated Behavioral Model (IBM) theory developed by Fishbein and Ajzen (29, 30).

Textbooks are more effective because they do not require a strong network or connection, especially in areas where it is difficult to obtain a strong and stable internet network. The advantages of textbook media are: more detailed material, very detailed explanations regarding the stages of achieving learning objectives, detailed sequences of teaching procedures that contain what to do and when to do it. The textbook provides administrators and teachers with a comprehensive program based on the latest research and teaching strategies. The obstacle in using online video media is that not all respondents have a strong internet signal quality, especially if the video file size is quite large (31–34).

Utilization of training media in the form of videos and textbooks during the COVID - 19 pandemic is one of the effective efforts in helping to improve the knowledge, attitudes, and skills of midwives related to complementary midwifery services. The training provided should also pay attention to the intrinsic and extrinsic elements of the trainees, especially the motivation of midwives as training participants. Another factor that has been proven to improve the quality of human resources, especially midwives, is the existence of policies or programs related to complementary services, readiness of infrastructure, service standards, and acceptance from clients and local culture that supports complementary services.

The satisfaction of clients/patients and husbands/partners who are provided with complementary services is a factor that supports the continuity of complementary midwifery services, in addition to the existence of adequate rewards for midwives. The training must be carried out on an ongoing basis and supported by the policies of the health center leadership, professional organizations and related stakeholders.

5. Acknowledgement

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Tables

Table 1: Overview of Clinical and Complementary Midwifery Training History in the Last Five Years

	History of training and complementary service delivery	Health Centers of Denpasar City		Health Centers of Tabanan Regency		Health Centers of Badung Regency	
		II West of Denpasar II (n=13)	I East of Denpasar (n=20)	Tabanan I (n=7)	Tabanan III (n=7)	Mengwi I (n=10)	Mengwi III (n=8)
1	Number of complementary training						
	Min	0	0	0	0	0	0
	Max	1	1	2	2	1	1
	Mean	0.2	0.1	0, 3	0, 3	0, 2	0, 1
	Median	0	0	0	0	0	0
	SD	0.4	0.3	0, 8	0, 8	0, 4	0, 4
2	Since when did you provide complementary services? (in years)						
	Min	0	0	0	0	0	0
	Max	1	3	5	4	9	3
	Mean	0, 2	0, 4	2	0, 7	2, 7	0, 4
	Median	0	0	0	0	2	0
	SD	0, 4	0, 9	2, 5	1, 5	3, 2	1, 1
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
3	Have had clinical training in the last 5 years						
	Yes	5 (38.5)	9 (45.0)	7 (100)	7 (100)	9 (90.0)	4 (50.0)
	No	8 (61.5)	11 (55.0)	0	0	1 (10.0)	4 (50.0)
	Total	13 (100)	20 (100)	7 (100)	7 (100)	10 (100)	8 (100)
4	Have had complementary training in the last 5 years						
	Yes	2 (15.4)	2 (20.0)	2 (28.6)	1 (14.3)	2 (20.0)	2 (25.0)
	No	11 (84.6)	18 (90.0)	5 (71.4)	6 (85.7)	8 (80.0)	6 (75.0)
	Total	13 (100)	20 (100)	7 (100)	7 (100)	10 (100)	8 (100)
5	The results of the training can be applied						
	Yes	2 (15.4)	4 (20.0)	4 (57.1)	2 (28.6)	2 (20.0)	2 (25.0)
	No	11 (84.6)	16 (80.0)	3 (42.9)	5 (71.4)	8 (80.0)	6 (75.0)
	Total	13 (100)	20 (100)	7 (100)	7 (100)	10 (100)	8 (100)
6	Barriers in the application						
	Yes	0	1 (5.0)	4 (57.1)	1 (14.3)	0	0
	No	13 (100)	19 (95.0)	3 (42.9)	6 (85.7)	10 (100)	8 (100)
	Total	13 (100)	20 (100)	7 (100)	7 (100)	10 (100)	8 (100)
7	Real impact						
	Yes	2 (15.4)	6 (30.0)	2 (28.6)	2 (28.6)	4 (40.0)	1 (12.5)
	No	11 (84.6)	14 (70.0)	5 (71.4)	5 (71.4)	6 (60.0)	7 (87.5)
	Total	13 (100)	20 (100)	7 (100)	7 (100)	10 (100)	8 (100)
8	There are complementary programs						
	Yes	4 (30.8)	11 (55.0)	3 (42.9)	2 (28.6)	5 (50.0)	6 (75.0)
	No	9 (69.2)	9 (45.0)	4 (57.1)	5 (71.4)	5 (50.0)	2 (25.0)
	Total	13 (100)	20 (100)	7 (100)	7 (100)	10 (100)	8 (100)
9	Types of complementary services provided						
	a) Pregnancy exercise	4 (30.8)	16 (80.0)	4 (57.1)	7 (100)	8 (80.0)	5 (62.5)
	b) Yoga	4 (30.8)	12 (60.0)	1 (14.3)	0	4 (40.0)	4 (50.0)
	c) Herbs for pregnant woman	3 (23.1)	2 (10.0)	1 (14.3)	2 (28.6)	0	0
	d) Herbs in delivery	2 (15.4)	3 (15.0)	1 (14.3)	1 (14.3)	1 (10.0)	0
	e) Herbs in childbirth	2 (15.38)	2 (10.0)	2 (28.6)	0	2 (20.0)	0
	f) Oxytocin massage	3 (23.08)	6 (30.0)	2 (28.6)	5 (71.4)	4 (40.0)	1 (12.5)
	g) Meditation	0	3 (15.0)	2 (28.6)	0	0	1 (12.5)
	h) Aroma therapy	0	4 (20.0)	2 (28.6)	0	0	0
	i) Perinium massage	1 (7.70)	2 (10.0)	2 (28.6)	3 (42.9)	0	0
	Total	13 (100)	20 (100)	7 (100)	7 (100)	10 (100)	8 (100)

Table 2: The results of the analysis of the difference in mean pretest and posttest scores based on the training media in the intervention and control groups

Intervention group	Knowledge		Δ Mean	p
	Pretest	Posttest		
	mean±SD	mean±SD		
Textbook	5.0±1, 3	7.2±1, 2	2.2	0.0001
Video	4.8±1, 3	7.6±0, 7	2.8	0.0001
Control	5.2±1, 1	5.7±0, 8	0.5	0.104

	Motivation		Δ Mean	p
	Pretest	Posttest		
	mean±SD	mean±SD		
Textbook	49.5±7.7	61.6±5.3	12	0.0001
Video	49.6±7.1	59.0±5.0	9.4	0.0001
Control	53.1±6.9	55.9±6.7	2.9	0.0009
	Skill		Δ Mean	p - value
	Pretest	Posttest		
	mean±SD	mean±SD		
Textbook	195.3±7.5	236.1±7.2	40.7	0.0001
Video	214.3±5.2	236.5±8.7	22.2	0.0001
Control	205.1±7.2	207.0±6.5	1.9	0.106

Table 3: The results of the average difference in knowledge, motivation and skills scores in the intervention group

Intervention group	Knowledge	F	p - value	Motivation	F	p - value	Skill	F	p - value
	Mean±sd			Mean±sd			Mean±sd		
Textbook	2.3±1.3	15.6	0.001	12.0±8.4	7.14	0.001	40.7±9.1	78.1	0.0001
Video	2.8±1.2			9.4±7.3			22.2±9.8		
Control	0.5±1.2			2.8±2.5			1.9±4.1		

Table 4: Correlation Test Results between Midwife Characteristics and Knowledge, Motivation and Skills Score

Variables	Knowledge		Motivation		Skill	
	r	p - value	r	p - value	r	p - value
Age	-0.15	0.23	-0.15	0.2	-0.16	0.18
Length of work	-0.2	0.1	-0.27	0.02	0.01	0.95
Complementary application time (in years)	-0.09	0.43	-0.13	0.3	0.13	0.29

Table 5: Results of Multivariate Analysis between Intervention Groups and characteristics of Midwives with Increased Knowledge, Motivation and Skills Scores

Variables	Knowledge	Motivation	Skill
	Coef (p)	Coef (p)	Coef (p)
Group			
Textbook	1.9 (0.0001)	7.8 (0.004)	39.6 (0.001)
Video	2.5 (0.0001)	4.6 (0.08)	22.3 (0.001)
Control	Ref	Ref	Ref
Age	- 0.04 (0.47)	0.27 (0.37)	- 0.38 (0.31)
Length of work	0.06 (0.25)	- 0.40 (0.17)	0.43 (0.25)
Complementary application time (in years)	- 0.05 (0.60)	0.07 (0.88)	0.62 (0.32)
R ²	0.36	0.22	0.72

6. Ethical Considerations

This research has received approval from the Research Ethics Commission of the Health Polytechnic of the Ministry of Health Denpasar number LB.02.03/EA/KEPK/0585/2021. Another major research ethic requirement is consent after explanation or informed consent for respondents who will be involved in this study.

7. Conflicts of Interest

There is no conflict of interest in this study.

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