

# Psychometric Measurement of Perceived Stress among Midwives at Primary Health Care Province of Central Java Indonesia

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**Submission date:** 11-Nov-2020 09:18AM (UTC+0700)

**Submission ID:** 1442523848

**File name:** 9.pdf (2.78M)

**Word count:** 3176

**Character count:** 16296

# Psychometric Measurement of Perceived Stress among Midwives at Primary Health Care Province of Central Java Indonesia

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## ABSTRACT

**Introduction:** Midwives at Primary Health Care (PHC) are a unique profession. They have some complex responsibilities and must standby 24 hours/day to provide medical and administrative maternal and child health care at PHC and community. In addition, the government regulation on PHC accreditation requires skills and concentration of midwives. These responsibilities are thought to contribute to the incidence of stress on them. Objectives: to determine characteristics of midwives and their relationship with perceived stress.

**Method:** The study included 231 midwives working with PHC from Province of Central Java who responded the online questionnaire for two weeks. A structured questionnaire was used to know midwives' characteristics and assessed perceived stress by perceived stress scale (PSS) instrument. The data was analyzed using SPSS version 20.

**Results:** Mean age of midwives are 40 years and they are working at accredited PHC ( 91.3%), only 36.8% who get a training of Basic Obstetric Neonates Emergency (BONE). Almost ¼ midwives have perceived stress in the moderate category ( mean= 16.5 SD= 5.08 ). There were no significant correlation between variables age, number of patients per day, training of BONE, accreditation status of PHC and education with perceived stress (p > 0.05). The correlation between administrative responsibilities by midwives and PSS scores was significant (p < 0.05).

**Conclusions:** PSS was reliabel to measure perceived stress among midwives at PHC (Cronbach's Alpha > 0.7). Future research should address to know what kind of administrative task that contribute perceived stress of midwives at PHC.

**Keywords:** Perceived Stress Scale, Midwife, Primary Health Care ( PHC)

## INTRODUCTION

A midwife is an individu a person, typically a woman, having been regularly accepted to a midwifery school programme that is based on the ICM Essential Competencies for Basic Midwifery Practice and the

structure of the ICM Global Standards for Midwifery School and is approve in the state where it is located, who has acquired the required qualifications to be registered and/or official licensed to practice midwifery and use the name 'midwife'; and who implement competence in the practice of midwifery.<sup>1</sup>

Midwives at Primary Health Care (PHC) in Indonesian are a unique profession within healthcare. Midwife as health workers that have a role as Government spearhead in serving public health, especially in organizing midwifery service and woman reproduction. According to Permenkes RI Number HK.02.02/ Menkes/ 149/ 2010, than this profession must

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be doing by a woman. They must implement 9 main task. They have to do midwifery care toward pregnant woman (antenatal care), implementing physiological maternity care toward maternity woman (postnatal care), organizing service toward neonatal (neonatal care visits), efforting partnership cooperation with shaman maternity or traditional birth attendance in PHC working areas, giving education by reproductive health and midwifery counseling, implementing family planning care toward fertile age woman, implement tracking and referrals caring toward high risk pregnant woman, efforting "Audit Maternal Perinatal (AMP)" discussion in case of maternal and neonatal death, implementing integrated documentation and report.

There is a government regulation on accreditation of PHC for increasing PHC quality service have to be gained. PHC must be accredited periodically at least every 3 years. PHC accreditation required skills and concentration of midwives to implement their task both taking care for woman and child and administratively. This task according to midwife's role and authority as implementers, administrator, educators and investigator in the field of midwifery service. Midwives have some complex responsibilities. They must standby 24 hours/day to provide medical and administrative maternal and child health care at PHC and community. Midwife's workforce is suspected to be heavy because needed professional ability that demanding concentration and skills.<sup>2</sup>

Midwifery care had a important role in the reduction of maternal and newborn mortality and morbidity.<sup>3</sup> Mortality becomes one of the condition that causes stress and anxiety in the midwifery practice in developing countries. It can impair their cognitive function,<sup>4</sup> decision-making skills, safe and high-quality care so that affecting their professional quality of life and clinical practice.<sup>5,6</sup>

Midwives are subjected to multiple stressors,<sup>7</sup> resulted from physical, psychological and social aspects of the working environment.<sup>8</sup> The development of stress which may contributed by job demand, which is simply one of "psychosocial hazards".<sup>9</sup> High stress level were reported by 57% the community midwife (CMW).<sup>10</sup> Women reported significantly more stress than men.<sup>11</sup>

Measurement of stress using self report can be done quickly and equally for getting structured response.<sup>12</sup> Instrument Perceived Stress Scale (PSS) was developed

by Cohen in 1983 and it has shown sufficient reliability and validity to assessment of an individual's perception of psychological stress,<sup>13</sup> across both clinical and non-clinical samples.<sup>14</sup> The aim of this study was to determine characteristics of midwife and their relationship with perceived stress.

## METHOD

A cross-sectional study was conducted with the research subject. The study included 231 midwives were working with PHC from Province of Central Java Indonesia who responded the online questionnaire for two weeks goes throw Midwifery Association of Indonesian around central Java province. Midwifery is defined as "skilled, knowledgeable and compassionate care for childbearing women, newborn infants and families across the continuum from pre-pregnancy, pregnancy, birth, postpartum and the early weeks of life".<sup>15</sup> A structured questionnaire was used to collect data of demography, administrative responsibility and stress perception was assessed by instrument PSS. Measuring reliability of the PSS instrument by Cronbach's alpha test.

PSS was used to measure 10 stated items ( 1-10) of PSS that was based on 5 point Likert rating scale. Scaling: 0 = Never; 1 = Almost Never; 2 = Sometimes; 3 = Fairly often; 4 = Very often. There are four positively stated items ( items 4, 5, 7, & 8) so the PSS scores were obtained by reversing responses ( 0 = 4, 1 = 3, 2 = 2, 3 = 1 and 4 = 0) and then summing across all scale items. Total individual score on the PSS 0 to 40. Lower scores indicating lower perceived.

Midwife have to be responsible for the clinical care administration. This describes the time that needed for documentation activities for each patient's data served by the midwife also the average of mother that served by the midwife for one week. The data gather time is adjusted to the working conditions of the midwife in Public Health Service areas, at that time midwife must making reports of service result in addition routine service activities, preparation of Public Health Service accreditation and implementation of healthy family registration program. The data was analyzed using SPSS version 20 . The compare means test ( independent t test & ANOVA) was used to compare category variables ( BONE training, PHC status, education) for stress scores. The Pearson correlation test used to know correlation numeric variabel with stress scores.

## RESULTS AND DISCUSSIONS

Out of a total 421 midwives responded the online questionnaire, 231 answered completely the questionnaires on time ( 55%). PSS instrument was valid and reliable to measure perceived stress among midwives of PHC. (Cronbach's Alpha > 0.7)

The mean age of study subjects was 38.9 years old (SD = 7.6) and were working at accredited PHC status (91.3%). Only 36.8% who got a training of Basic Obstetric Neonates Emergency (BONE) and 61.9% was graduated education by Diploma of Midwifery Program (Table 1).

**Table 1: Characteristics variables (n =231)**

Variables	Mean (SD)
Age, years	38.9 ( 7.6)
Administrative task of each patient (minute)	12.0 ( 6.2)
Number of patients each day	18.2 (22.7)
	n (%)
<b>Work at accredited PHC</b>	
Yes	211 (91.3)
No	20 ( 8.7)
<b>Training BONE</b>	
Yes	85 (36.8)
No	146 (63.2)
<b>Education</b>	
Diploma of Midwifery Program (D3)	143 (61.9)

Conted...

Applied Science of Midwifery Program (D4)	82 (35.5)
Bachelor (Masters)	6 ( 2.6)

Subject who answered "sometimes" to all item of PSS (1-10) questions is the largest percentage. The highest average score (mean=1.88; SD =1.05) to the question item. " In the last month, how often have you felt nervous and "stressed"?. Meanwhile, the less average score (mean=1.44; SD =0.96) to the question item " In the last month, how often have you felt confident about your ability to handle your personal problems?"

About three fourth subjects had perceived stress in the moderate category (75.8%). The mean perceived stress score of all was 16.5; SD= 5.08 (Table 2). There were no significant correlation between variables age, number of patients each day, training of BONE , accreditation status of PHC and education with perceived stress ( $p > 0.05$ ). The correlation between Administrative responsibilities by midwives and PSS scores was significant ( $p < 0.05$ ). See table 3.

**Table 2: Variables by Score of PSS**

Variables	p
Age, years	0.86 <sup>a</sup>
Administrative responsibility	0.011 <sup>a</sup>
Number of patients each day	0.74 <sup>a</sup>
Work at accredited PHC	0.18 <sup>b</sup>
Training BONE	0.74 <sup>b</sup>
Education	0.99 <sup>c</sup>

<sup>a</sup> = pearson correlation <sup>b</sup>= t test <sup>c</sup> = anova test

**Table 3: Responses to the perceived stress score and category ( n = 231)**

No.	Statement	Never (0)	Almost never (1)	Sometimes (2)	Fairly often (3)	Very often (4)	Mean (SD)
		n (%)	n (%)	n (%)	n (%)	n (%)	
2 1.	In the last month, how often have you been upset because of something that happened unexpectedly?	28 (12.1)	51 (22.1)	111 (48.1)	31 (13.4)	10 (4.3)	1.76 (0.98)
2.	In the last month, how often have you felt that you were unable to control the important things in your life?	48 (20.8)	72 (31.2)	84 (36.4)	24 (10.4)	3 (1.3)	1.46 (0.97)
3.	In the last month, how often have you felt nervous and "stressed"?	25 (10.8)	53 (22.9)	93 (40.3)	45 (19.5)	15 (6.5)	1.88 (1.05)

Conted...

4.	In the last month, how often have you felt confident about your ability to handle your personal problems?	38 (16.5)	88 (38.1)	75 (32.5)	25 (10.8)	5 (2.2)	1.44 (0.96)
5.	In the last month, how often have you felt that things were going your way?	21 (9.1)	71 (30.7)	105 (45.5)	28 (12.1)	6 (2.6)	1.68 (0.89)
6.	In the last month, how often have you found that you could not cope with all the things that you had to do?	17 (7.4)	62 (26.8)	112 (48.5)	35 (15.2)	5 (2.2)	1.78 (0.86)
7.	In the last month, how often have you been able to control irritations in your life?	28 (12.1)	77 (33.3)	99 (42.9)	24 (10.4)	3 (1.3)	1.55 (0.88)
8.	In the last month, how often have you felt that you were on top of things?	23 (10.0)	81 (35.1)	99 (42.9)	27 (11.7)	1 (0.4)	1.58 (0.84)
9.	In the last month, how often have you been angered because of things that were outside of your control?	15 (6.5)	65 (28.1)	102 (44.2)	42 (18.2)	7 (3.0)	1.83 (0.9)
10.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	23 (10.0)	71 (30.7)	111 (48.1)	21 (9.1)	5 (2.2)	1.63 (0.87)
<b>Perceived stress</b>		<b>n (%)</b>		<b>mean (SD)</b>			
Low stress (Scores 0-13)		53 (22.9)					
Moderate stress (Scores 14-26)		175 (75.8)					
High stress (Scores 27-40)		3 (1.3)					
Scores				16.5 (5.1)			

The aim of this study was determine characteristics of midwives and their relationship with perceived stress. The results show mean age of subject (38.9 year olds) was a working age as those a 15 to 64 year olds. The literature review noted that age might contribute some components of the stress process at work.<sup>16</sup> The number of patient should be care for is related to the time that to be used of midwife in administration tasks. For example, documentation about the data of midwifery care. Midwifery documentation is one of recording and reporting of midwifery care as a professional midwife. It is a crucial for them to know and understand what they had done and the important thing on documentation as a legal aspect.<sup>17</sup>

The responsibility on the administration tasks is correlated to perceived stress of midwives The ability in documentation and administration impacts to the quality of midwifery clinical practice. It is doing by midwife in order to reduce the maternal and infant mortality rate. In addition, it can prevent in increasing the number of midwifery cases that supporting MMR, such as postpartum hemorrhagic, preeclampsia, and other pregnancy complications. So that, it is a need to improve

the educational background of midwife especially at Primary Health care. Most of midwives who work at accredited PHC and nor have to be as a professional midwife as their level of education and competencies. Studies have shown that competent midwives can provide 87% of essential cares for women and babies.<sup>18</sup> It is a prove that midwives whoa have high educational background in midwifery, in house training, and have a licensed midwife have a positive impact on the quality of midwifery services. It is hoped that it can reduce quickly the maternal and infant Mortality rate.<sup>19</sup> One of in house training to improve the level of knowledge on reproductive in health care and community based is training BONE. The goals are to prevent maternal mortality rate and infat moratlity rate. The training was arranged to prepare health care provider to manage maternal and neonatal Emergencies cases at the primary health services level. Providers skilled in BONE services might be essential, especially in countries with a high burden of maternal and newborn mortality.<sup>20</sup> All midwives felt guilty if they faced on maternal death. The level of anxiety at the highest score (93%).<sup>5</sup> Anxiety is a pchycological respon from stress.<sup>8</sup> PSS instrument gives a lot of information about the midwife's level of stress

and nervous during they work in PHC, involving less and moderate level of stress.

1

### CONCLUSION

Psychometric measurement by PSS was valid and reliable to measure perceived stress among midwives who worked at PHC (Cronbach's Alpha > 0.7). Future research should address to know what kind of administrative task that contribute perceived stress of midwives at PHC.

**Conflict of Interest:** There are no conflict of interest

**Ethical Clearance:** This study received ethical approvals from the Public Health Faculty University of Diponegoro (No: 053/EC/FKM/2018)

**Source of Funding:** Self

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