

The Influence of *Sehat Jiwa* Education on the First Active Phase of Labor in Community Health Centers across Makassar City

Sumarni Marwang*¹, Rosita Passe², Nurhidayat Triananingsih³, Rahayu E. Kusniyanto⁴

^{1, 2, 3, 4} Department of Midwifery, Universitas Megarezky, Makassar, Indonesia

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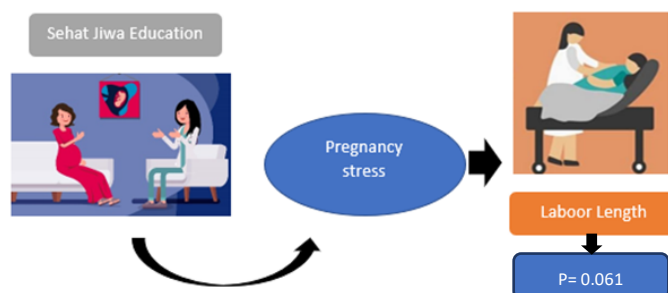
ABSTRACT

During pregnancy, women commonly experience both psychological and emotional changes, leading to concerns about childbirth and potential labor complications. Therefore, education programs became essential for preparing mothers mentally for delivery with the engagement of health workers and families. This study aimed to assess the effectiveness of *Sehat Jiwa* education on the length of the first active stage of labor. Using a Quasi-experimental design with a two-group control approach, the sample comprised 64 respondents (34 in the intervention group and 30 in the control group). The instruments adopted were the *Sehat Jiwa* (English: Soul Health) education module, questionnaires, and partograph sheets. The results showed that there was no significant difference in the length of the first active phase between the intervention and control groups with a p-value of $0.061 > 0.05$. However, the average duration for the intervention group (5.88 hours) was slightly shorter than the control group (6.40 hours). Emphasizing *Sehat Jiwa*-based education for pregnant women was crucial, fostering smoother delivery processes and reducing the likelihood of increased labor complications.

ABSTRAK

Selama kehamilan kebanyakan wanita mengalami perubahan psikologis dan emosional. Olehnya itu, perlunya program edukasi yang mampu mempersiapkan ibu secara mental dalam menghadapi persalinan dengan pelibatan petugas Kesehatan dan keluarga. Penelitian ini memiliki tujuan untuk menilai efektivitas dari edukasi *Sehat Jiwa* terhadap Lama Persalinan Kala I Fase aktif. Rancangan penelitian ini menggunakan Quasy eksperimen desain, dengan pendekatan two group with control. Sampel pada penelitian ini sebesar 64 responden yang memenuhi kriteria sampel (34 responden pada kelompok intervensi dan 30 responden pada kelompok control). Instrument yang digunakan adalah modul edukasi *Sehat Jiwa*, kuisisioner, Lembar partograph. Hasil penelitian ini menunjukkan tidak terdapat perbedaan secara signifikan lama kala I Fase aktif pada kelompok intervensi dan kelompok kontrol namun nilai rata-rata lama kala I Fase aktif untuk kelompok intervensi lebih singkat (5.88 jam) dibanding dengan kelompok kontrol (6.40 jam). Pentingnya edukasi berbasis *Sehat Jiwa* pada ibu hamil agar proses persalinan berjalan lancar dan dapat menghindari peningkatan komplikasi persalinan.

GRAPHICAL ABSTRACT



Keyword

first active phase
obstetric labor complications
pregnancy
pregnant women
sehat jiwa

* Correspondence

Komp Unhas Antang Jl. Sastra 2 Blok A No 49/ Makassar, 90235, South Sulawesi, Indonesia
Email: sumarni.megarezky@gmail.com

INTRODUCTION

It is estimated that there are 5 million Indonesian women who give birth each year, and there are 15.000 who unfortunately die during pregnancy or childbirth, whilst the number of infant deaths is estimated at 120.000. Data from around the world reveals that the five most common obstetric conditions are respectively: post-partum hemorrhage, infection, unsafe abortion, eclampsia, and extended labor—are responsible for 80% of all causes of death (Marwang, Passe, et al., 2020). The incidence of prolonged labor varies from 1 to 7%. Long labor causes an average of 8% of maternal mortality worldwide and 9% in Indonesia. 61.8% of prolonged labor was caused by unnatural uterine contractions. Risk factors that play an essential role in the occurrence of irregular uterine contractions that cause prolonged labor are emotions and strength (Miller et al., 2021). Prolonged labor causes an average of 9% of maternal death in Indonesia. Prolonged labor is the cause of postpartum hemorrhage, which is the most important cause of maternal death in Indonesia. There are 90% of cases of immediate postpartum hemorrhage, the cause is uterine atony, where one of the conditions that can be a risk factor is the prolonged first stage of labor. To prevent complications that occur during pregnancy and childbirth, it is essential to make prevention efforts as early as possible, namely during a healthy pregnancy (Moulana et al., 2019).

A healthy pregnancy requires physical and mental preparation because planning must be done before pregnancy (Koushede et al., 2017). A well-planned pregnancy process will positively impact the fetus's condition, and the mother's physical and psychological adaptation to pregnancy will be better. In preparation for pregnancy, it is also advisable to screen for infectious diseases that are at risk of transmitting to the fetus (Koushede et al., 2013). The majori-

ty of the programs currently being developed by the Indonesian government begin after a couple experiences pregnancy. For example, the family planning program, the P4K program (delivery planning and prevention of complications), and the nutrition program for the first 1000 days of life are all dependent on mothers who have experienced pregnancy and health programs. other mothers of children (Frey, 2021).

Income and information exposure are the most dominant factor compared to knowledge and information exposure. Lack of information causes more than a third or 37% of women to have anxiety during pregnancy and symptoms of depression; anxiety is more common during pregnancy until delivery (Lönnberg et al., 2020). About 13% of non-pregnant women report having a dread of childbirth severe enough to postpone or prevent pregnancy, compared to more than 20% of pregnant women who report having this worry (Esfandiari et al., 2020).

The mother experiences problems during labor as a result of her fear of going through labor. The body's muscles stiffen up as a result of this stressful situation, particularly the muscles in the birth canal, which become stiff and rigid and make the birth process more difficult (Kowalska, 2023). The mother will experience more severe pain as a result of unstable emotions. A person's response to pain might lead to anxiety. This compound will stimulate the release of catecholamines and sympathetic nerve activity (Papapetrou et al., 2020). The placenta's blood flow will be reduced as a result of excessive catecholamine release, which can also reduce the efficiency of uterine contractions and lengthen the laboring period. Therefore, a higher catecholamine level during labor may cause an extended first stage and a lengthy labor (Jesica & Friadi, 2019).

The majority of pregnant women go through psychological and emotional changes.

Pregnancy causes complicated physical and emotional changes that necessitate lifestyle modifications. Since becoming pregnant, women have felt anxiety (Pan et al., 2019). Anxiety will increase before delivery, especially in the third trimester. Psychological factors that influence pregnancy can come from within the pregnant woman (internal) and from outside the pregnant woman (Esfandiari et al., 2020). Psychological factors that affect pregnancy come from within the mother, which can be the background of the mother's personality and the influence of hormonal changes during pregnancy. Psychological factors that come from outside the mother can be in the form of the mother's experiences, anxiety and emotional disturbances, and family support, especially husbands (Syamsuddin et al., 2022; Walter et al., 2021).

The limited provision of information for pregnant women about psychological readiness makes pregnant women need to get attention and guidance regarding the psychological impact of the mother's unpreparedness in facing childbirth (Ying et al., 2016). Health workers or next of kin usually obtain information on mothers' psychological readiness. The study results showed that some respondents still needed to receive information, especially about the psychological readiness of mothers in facing childbirth. Mothers who did not receive information were psychologically unprepared due to the mother's ignorance (Agampodi et al., 2019). In addition to knowledge, emotional therapy has an impact on reducing maternal stress and anxiety. It has been proven that hydrotherapy with warm water and *murottal* therapy can help pregnant mothers reduce anxiety (Sudirman et al., 2022). Both of these therapies reduce the body's physiological response to stress. It can be seen that there is a change in the electric current of the muscles and the catching power of the skin. The loosening of the arteries and rise in blood levels in the skin,

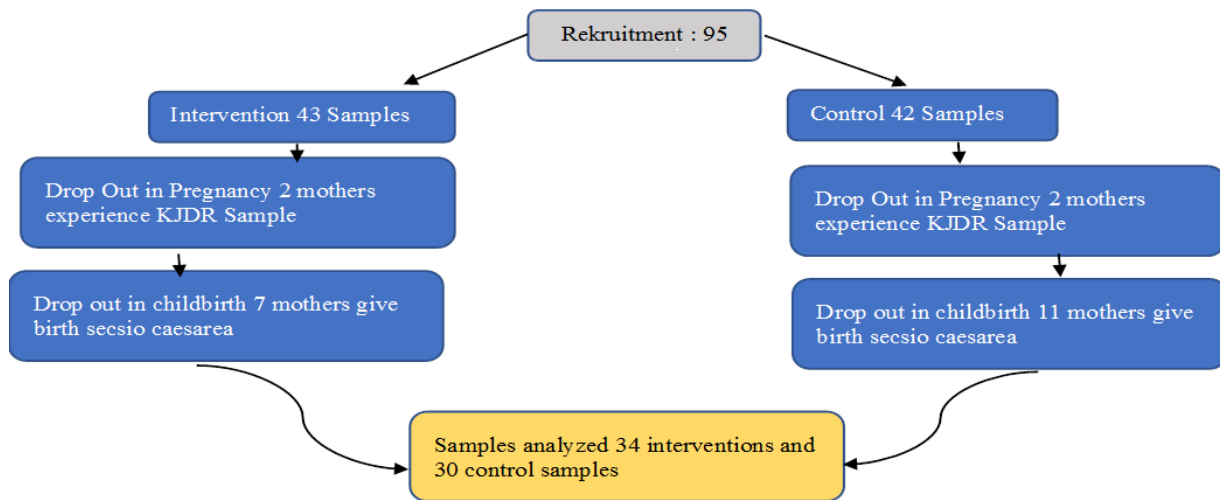
along with an increase in skin warmth and a decrease in heart rate frequency, are signs of a relaxation or reduction in reflected nerve tension (Hill et al., 2022; Răchită et al., 2022)

Another prior study was conducted by (Tachibana et al., 2019) with the title Antenatal education for self-diagnosis from the beginning of active labor was determined, with the results showing that there was a difference in the average decrease between the intervention group and the control group. Research on the Effect of Childbirth Education on Childbirth Outcomes and Maternal Satisfaction was studied by (Mueller et al., 2020) with the result that there is childbirth education may help women prepare for what to expect in birth and minimize the use of medical interventions. Likewise, research conducted by (Sharma et al., 2022) on the Effectiveness of Children's Education Knowledge Program, Intrapartum Behavior, and Pregnancy Outcomes among Selected Primigravida Mothers showed results that childbirth education programs were found to be effective in improving knowledge, intrapartum behavior and pregnancy. From some existing studies, it only emphasizes education about knowledge. So, this research in addition to education about knowledge is also equipped with education about psychological (psychiatric).

Previous research focused on providing education on the physical and biological needs of pregnant women. However, it does not pay attention to the psychological aspects of pregnant women; therefore, this research is designed to provide education not only on the biological aspects but also on the psychological needs of mothers during pregnancy until the birth process.

As a result, the researchers created education model that was given the name *Sehat Jiwa* in an effort to speed up the birthing process. This Mental Health Education is designed

Figure 1
Sample Flow



to provide additional information for mothers, especially regarding psychological conditions experienced during pregnancy and childbirth. For this reason, this research aims to implement and assess the influence of Mental Health Education on the length of labor in the active phase of the first stage.

METHODS

This study used a Quasi experimental design, with a two-group with control approach comparing two groups (Innab et al., 2023), namely the Group that was given the intervention and the control group. This research was conducted from January to October 2022 at the Community Health Centers in Makassar City, South Sulawesi Province. The population in this study were all pregnant women who visited Makassar Regional Health Center. The sample in this study was 64 pregnant women who visited Makassar Regional Health Center and met the sample criteria (34 respondents in the intervention group and 30 respondents in the control group). Sampling using clinical judgment with sample criteria follows trimester pregnant women based on the results of the midwife's examination, primigravida mothers, mothers who experience mild to moderate stress based on the

results of the PDQ questionnaire and families are willing to accompany during education. The intervention group received Mental Health Education and the control group received the Maternal and Child Health (MCH) book. The Flow sample is shown in the following Figure 1.

The stages in this study were giving informed consent to pregnant women and her family who met the inclusion criteria, then dividing the intervention group and the control group, where the intervention group was given *Sehat Jiwa* education Healthy Mental education adapted from the philosophy of "rocking chair" by Jean Ball which contains about pregnancy and the postpartum period is defined as the process of adaptation to motherhood which is used as a theoretical basis for role change, stress, coping and support in postnatal care and the control group was only given Maternal and Child Health (MCH) books (Dönmez & Karacam, 2017). Each Group was observed until in labor. Regarding the length of the first active phase, compare the intervention and control groups. The instruments used are *Sehat Jiwa* education modules, knowledge and prenatal distress questionnaires, Maternal and Child Health (MCH) books and partograph sheets. Providing education begins with pregnant wom-

Table 1
The Characteristics of Respondent

Variable	Intervention (n(%) / Mean±SD)	Control (n(%) / Mean±SD)
Mother's Age (years)	23.02 ± 3.84	22.33 ± 3.40
Upper arm circumference (cm)	24.25 ± 4.35	25.46 ± 2.37
Hgb (g/dL)	10.85 ± 0.59	10.79 ± 0.96
Length of Marriage (month)	15.41 ± 8.95	12.20 ± 16.37
Income (Rupiah/month)		
According to PMW	6 (9.4)	11(17.2)
Under PMW	28(43.8)	19(29.7)
Mother's job		
Work as a Housewife	3(48.4)	26(40.6)
Work not a housewife	3(4.7)	4(6.2)
Education		
Primary school	3(4.7)	1(1.6)
Junior high school	5(7.8)	4(6.2)
Senior high school	19(29.7)	18(28.1)
College	7(10.9)	7(10.9)

Note: SD= Standar Deviation; n= Population; PMG = Provincial Minimum Wage

en with a gestational age of 28-30 weeks, where meetings are held 3 times. Education was provided for 6 weeks. Then an assessment is carried out on the mother's labor process.

The independent variable in this study was *Sehat Jiwa* education, and the dependent variable was the length of the active phase I. Univariate analysis using the frequency distribution and bivariate analysis using the independent t-test to determine the effect of *Sehat Jiwa* education on the length of the first active phase. The results of data processing are presented in table form and then interpreted.

RESULTS

Table 1 shows that the Mean ± SD of mothers in the intervention group was 23.02 ± 3.84 years and the control group Mean ± SD was 22.33 ± 3.40 years. For MUAC, the highest was in the control group, 25.46 ± 2.37 cm. Respondents' Hemoglobin was found to have the highest average in the intervention group, 10.85 ± 0.59. The shortest length of marriage was in the control group, namely 12.20 ± 16.37 months. The highest income was in the intervention group, which was below the minimum wage for 28 respondents (43.8%). Most of the

respondents' occupations were housewives, namely 31 respondents (48.4%) in the intervention group and 26 respondents (40.6%) in the control group. Most of the education background in both groups was at the high school level, namely 19 respondents (29.7%) in the intervention group and 18 respondents (28.1%) in the control group.

Table 2 shows the length of the first active phase in the intervention group; the mean ± SD was 5.88 ± 1.20 hours, while in the control group, the mean ± SD was 6.40 ± 0.93 hours. The average duration of the first stage of the active phase in the Group that was given the intervention was shorter than the Group that was not given the intervention (control)

The results of the analysis using the unpaired t-test (independent t-test), the effect of *Sehat Jiwa* education on the length of the first stage of the active phase was obtained $p = 0.061 > 0.05$. Where the p-value is greater than the alpha value, this indicates no significant difference in the length of the first stage of the active phase in pregnant women at the Center for Public Health Services in the Makassar area.

Table 2*Analysis of Differences in The Length of The First Active Phase of Mother*

Variable	Mean ± SD	P
Length of Active Phase I (hours)		
Intervention (n= 34)	5.88 ±1. 20	0.061*
Control (n= 30)	6.40 ±0.93	

Note: SD= Standar Deviation; n= Population; PMG = Provincial Minimum Wage

DISCUSSION

A healthy pregnancy requires physical and mental preparation because planning must be done before pregnancy (Koushede et al., 2017). A well-planned pregnancy process will positively impact the fetus's condition, and the mother's physical and psychological adaptation during pregnancy will be better. In preparation for pregnancy, screening for infectious diseases at risk of transmitting to the fetus is also advisable.

Increasing anxiety for pregnant women, especially during the Covid-19 pandemic, makes mothers even more afraid of facing childbirth (Nowacka et al., 2021). Excessive maternal anxiety can increase the increase in complications that occur in maternal labor. Therefore, through the education developed, called Sehat Jiwa, by involving the family to support the mother's mentality and providing information and mental training for mothers, it is hoped that it will be able to prepare mothers to face expected delivery.

The results of this study showed that the length of the first active phase in the intervention group was the mean ± SD of 5.88 ± 1.20 hours, while in the control group, the mean ± SD was 6.40 ± 0.93 hours. The $p = 0.061 > 0.05$ showed no difference in the length of the active phase I in the two groups. Although not significant, there was a difference in the mean length of the first active phase in the two groups. The average in the intervention group was faster, namely 5.88 hours, compared to the control group, which was 6.50 hours. Sari & Handayani

(2023) research results showed that 50% of mothers experienced stress and more than half of the mothers experienced a longer active phase, 63.3%.

This research is based on previous research that psychological conditions are one of the factors that influence childbirth. Conditions of high anxiety can cause the production of the hormone oxytocin to decrease so that uterine contractions will decrease (Holzman et al., 2009). Expected delivery is strongly dependent on the interaction of the uterine muscles and sympathetic and parasympathetic nerve stimulation, where this nerve stimulation is impacted by outside variables, particularly the psychology of the expecting mother (Rempel et al., 2021). Psychological conditions affect the process of widening and developing the birth canal; this condition causes spasms in the muscle tissue so that the birth canal becomes stiff and cannot expand. As a result, the birth process becomes obstructed (Saharoy et al., 2023).

The education provided to the intervention group, which we call Sehat Jiwa education, can help mothers adapt to the conditions of childbirth that mothers face. Mothers can adapt to the pain experienced, and the family can play a role during the birth process so that the delivery process can go faster, especially for primigravida mothers (Stang et al., 2020). With the mother's psychological condition who is ready, it can reduce anxiety conditions so that uterine contractions are not disturbed so that the duration of labor in the first stage of the active phase is faster (Smith et al., 2018).

Anxiety in pregnant women will affect the onset of disease and complications of pregnancy and childbirth, both in mothers and babies. Psychological factors have the influence of the occurrence of disorders during the labor process. The incidence of prolonged labor is about 65% caused by inefficient uterine contractions, inadequate uterine contractions in response to anxiety that inhibit uterine activity. The response is part of the psychological component so it can be stated that there is a large influence of psychological factors in the safety of childbirth in the mother (Arlym, & Herawati, 2021).

In accordance with previous researchers, namely Physical and Psychological Factors of Maternity Mothers with Active Phase I Pain Intensity with results that concluded that there was a very significant relationship between physical and psychological factors with the level of pain intensity in childbirth (Noviyanti & Jasmi, 2022). The effect of anxiety in childbirth can trigger excessive release of catecholamine levels, so it can result in a decrease in blood flow to the uterus, decreased uterine contractions, decreased blood flow to the placenta, oxygen available to the fetus will also decrease or decrease, then it can cause the duration of labor during the active phase I (Braig et al., 2020).

Pain in labor is a trigger factor for stress and anxiety in birthing mothers. Labor pain can stimulate the release of chemical mediators such as prostaglandins, histamine, bradykinin, serotonin, and other mediators, which will result in stress which causes the secretion of hormones such as catecholamines and steroids which results in vasoconstriction of blood vessels so that uterine contractions weaken (Ying et al., 2016). There is a need for education to prepare mothers, especially in this *Sehat Jiwa* education; mothers and families have been prepared to face normal delivery process-

es, so mothers have received education regarding the pain they will face and what is the role of the family in this process (Firouzbakht et al., 2015).

Interventions to reduce labor pain are urgently needed in order to reduce complications in the mother and fetus, one of which is the Counter Pressure technique which is proven to reduce labor pain (Rejeki et al., 2014). When a defense is opened, pain signals are sent, and when it is closed, impulses are suppressed, which reduces the mother's sense of pain (Ngai & Xiao, 2021) Providing intervention in the form of mindfulness based education anxiety level in the intervention group was very low post-intervention compared to that in the control group. The midfulness sessions helped nulliparous women experience less anxiety during pregnancy (Kuo et al., 2022).

Increased pain causes increasing catecholamine due to high anxiety in studying catecholamine and psychological well-being in pregnant women (Papapetrou et al., 2020). The central nervous system regulates the release of catecholamines. Catecholamines have an impact on insulin secretion, fatty acid mobilization, and the constriction/dilation of blood vessels (Schaper, 2020). Catecholamines can influence uterine contractions more directly by up-regulating oxytocin receptors in the uterus, which causes adrenergic receptors to contract and relax (Marwang, Masni, et al., 2020; Szóstek-Mioduchowska et al., 2021). *Sehat Jiwa* education still plays a part in reducing the length of the initial stage of the active phase in the birth process even if there was no substantial influence in the study's findings. In comparison to the Group who did not get intervention, the active phase's first stage lasts on average less time. To minimize prolonged labor during the initial active phase, it is vital to consider other aspects. In addition to being significantly influenced by the pregnant lady herself,

the birth process is also greatly influenced by assistants (Amiri et al., 2019).

This research has a unique model that was developed by paying attention to psychological aspects. Education and provision of interventions focus more on maternal mental health. A good mental health condition will influence physiological processes in the body.

CONCLUSIONS

This study finally suggest that *Sehat Jiwa* education can affect the length of the first active phase in infancy mothers. Although the length of the first active phase did not show a significant difference, the average duration of the active phase in the intervention group was shorter than in the control group. This is because the control group uses a standardized MCH book. The advantages of *Sehat Jiwa* education are that it is a social enterprise that focuses on providing *Sehat Jiwa* education as a promotive and preventive effort during pregnancy and childbirth so that it can improve the health and welfare of mothers and children. The limitations of this education are that it needs to be socialized thoroughly to the local government, community leaders, related sectors and the community because it is an educational model that has just been implemented in the community.

The suggestions from this research are; The need for support from the local government, community leaders and cross-sectors for implementing this education in the community. It is hoped that this educational socialization can be carried out in its entirety to all communities, and it is hoped that health workers will have the ability to implement this *Sehat Jiwa* education. It is necessary to develop *Sehat Jiwa*-based education for pregnant women in maternal and child health services to ensure the welfare of the pregnancy and childbirth process. For future researchers, it is hoped that they can see the overall aspects that support the perfec-

tion of this education. A large number of sample trials are needed to see significant differences in length of labor during the first active phase.

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AUTHORS' CONTRIBUTIONS

Sumarni Marwang designed the study, formulated the concept, wrote the manuscript. Rosita Passe collected data, analyzed the data. Reviewed the manuscript Nurhidayat Trianingsih reviewed and edited the manuscript, turnitin manuscript. Rahayu E. Kusniyanto validated data and resourced data, read, and approved the final manuscript

AUTHORS' INFORMATION

Sumarni Marwang, S.ST.,SKM.,M.Kes is an Assistant Professor in Departement of Midwifery, Megarezky University, Makassar, Indonesia. Rosita Passe, S.ST.,M.Kes is an Assistant Professor in Departement of Midwifery, Megarezky University, Makassar, Indonesia. Nurhidayat Trianingsih, S.ST.,M.Keb is an Assistant Professor in Departement of Midwifery, Megarezky University, Makassar, Indonesia. Rahayu Eryanti Kusniyanto, S.ST.,M.Keb is an Assistant Professor in Departement of Midwifery, Megarezky University, Makassar, Indonesia .

COMPETING INTERESTS

The authors confirm that all of the text, figures, and tables in the submitted manuscript work are original work created by the authors and that there are no competing professional, financial, or personal interests from other parties.

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