

THE EFFECT OF *BIRTH BALL* ON PAIN RELIEF IN PARTICULAR WOMEN IN THE 1ST ACTIVE PHASE IN SPACE BANCAR COMMUNITY HEALTH CENTER

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ABSTRACT

Pain during the birthing process is a common problem for mothers during the birthing process. The aim of this research was to determine the effect of the *Birth Ball* on reducing pain in women giving birth during the first active phase in the delivery room at the Bancar Health Center. This type of research uses a quasi-experimental design with a two group pretest posttest design. The population of all mothers giving birth from January to February 2022 is 55 respondents, with a sample of 16 respondents as the intervention group and 16 as the control group. Simple random sampling technique. Analysis of this data uses the independent sample T-Test if the data is normal, if the data is not normal using the Mann Whitney U-Test. SOP *Birth Ball* and Visual Analog Scale instruments. The results of this statistical test are based on independent sample T-Test decision making with Asymp values. Sig. (2-tailed) $0.012 < 0.05$ which means the hypothesis is accepted. There is an influence of the *Birth Ball* on reducing pain in women giving birth during the first active phase in the birthing room of the Bancar Health Center. This research can be used as a reference in adding information to provide information and education regarding the implementation of *birthball* therapy for mothers giving birth during the first active phase.

Keywords : Birth Ball, Reducing Maternal Pain



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INTRODUCTION

Pain during labor become common problems for Mother in undergoing the process of giving birth . Pain in a person own each threshold. However , mothers who experience the labor process will feel sick , anxious , even fear .. Labor pain started from mothers who experience 1 cm opening , with increase opening cervix during labor make intensity painful the more often and for a long time. So that condition pain that is not managed with Good will cause various effect for Mother and also the fetus . The mother gives birth experience anxiety to the pain he experienced so that request action surgery with method operation *section caesarean* which is considered Mother will can reduce pain in the second stage of labor .

Mortality Rate (MMR) worldwide according to the World Health Organization (WHO) in 2020 was 295,000 deaths. with reason death Mother is pressure blood tall during pregnancy (pre-eclampsia and eclampsia), bleeding , postpartum infection , and unplanned abortion . safe (WHO, 2021). According to ASEAN data, the highest AKI in Myanmar at 282.00/100,000 KH in 2020 and the lowest MMR is it available in Singapore in 2020 ? There is death mothers in Singapore (ASEAN Secretariat, 2021). In Indonesia, the number of maternal deaths in 2020 showed 4,627 cases. death part big reason death Mother caused by other causes amounting to 34.2%, bleeding by 28.7%, hypertension in pregnancy by 23.9%, and infection by 4.6% (Ministry of Health of the Republic of Indonesia, 2021). The lowest maternal mortality rate in the province of DKI Jakarta there were 48 deaths women at the time pregnant , when give birth to or postpartum period per 100,000 births life , and the highest in Papua Province there were 565 deaths women at the time pregnant , when give birth to or postpartum period per 100,000 births live (Census Population , 2020).

According to the East Java Provincial Health Service , in 2021 , the MMR in East Java Province reached 89.81 per 100,000 births. alive . This figure is up compared to in 2020 which reached 98.39 per 100,000 births alive . Still high Covid-19 cases have affected maternal mortality in East Java, so that in 2021 , maternal mortality in East Java reached 234.7

per 100,000 births. alive . According to the East Java Provincial Health Office , Three reason highest death mother in 2021 is hypertension in pregnancy that is by 9.62% or as many as 123 cases and bleeding namely 9.38% or as many as 120, other causes were 68.18% or 872 people. Other causes experienced increase because of the amount covid-19 cases (East Java Health Office Data Profile 2022) . Number death mother in the district Tuban 2020 reached 22 mothers from the target. Cause most death Mother 2020 in the Regency Tuban due to because of Pre Eclampsia / Eclampsia as many as 7 mothers , disease heart as many as 6 mothers and others as many as 5 mothers . Meanwhile, the death rate mother in the district Tuban In 2020 it reached 136 per 100,000 births This Number is alive increase compared to with in 2019, namely 115 per 100,000 births alive (Data from the District Health Office) Tuban Year 2020).

When do survey early in the room giving birth Health Center Bancar October 2023. Of the 10 mothers who gave birth , 6 of them have pain weight and after done giving therapy birthball , scale painful down become scale light . This is very helpful midwife on duty subtraction pain in the mother giving birth especially during phase I active . 3 of them own scale painful heavy and not happen decline or scale painful still , because Mother No can control himself and it's hard invited communication by midwives . 1 of them Mother experience painful light and after done therapy birth ball scale painful Mother become scale painful moderate , due to Mother No comfortable with use birthball (Primary Data, 2023).

Labor pain or pain appear consequence reflex physical and response psychic mother . Tension emotion due to anxiety to the point of fear can aggravate perception painful during labor . The pain experienced Mother when face labor can stimulate afraid so that arise anxiety that ends with panic . This is can cause response physiology that reduces ability uterus For contract with consequence will extend time labor . Pain during the first stage of labor is severe pain with longer time . For That need be noticed Handling For overcome pain during the first stage of labor . Fear tension and anxiety are greatly exacerbated by pain . The lack of comfort ,

fear and pain is problem for Mother giving birth . This is is obstacle the biggest in childbirth and if No overcome will impact on the obstruction progress childbirth . Mother has a difficult childbirth adapt with pain labor can cause No coordinated uterine contractions that can result in prolongation of the first stage of labor and well-being fetus disturbed . There is no progress labor or progress slow labor is one of complications worrying , complicated and unsafe childbirth (Kurniawati, et al. , 2017.) Factors reason pain during labor among others; relaxation muscles that are not perfect , wrong breathing technique, position less mother comfortable , Contraction Uterine Muscles , Stretching Muscle Pelvis , presence opening cervix , decrease head fetus and changes other will create a stimulus for the syafar painful so that pain arises . However , when Mother experiencing pain , many factors that can influence pain felt and how to they react towards it . Factors This can increase and decrease perception painful patient , tolerance to pain . In fact , everyone receives stimulation pain at the same intensity , but reaction patient to painful formed by various interrelated factors interact .

Management painful in a way pharmacology more effective compared to with method non-pharmacological However method pharmacology more expensive and potentially cause less effect good and bad all facility health provide service So that Lots therapy non -pharmacological emerging For reduce pain in labor Where every layer public can do it as well as service health can facilitating , having the character of cheap , simple, effective and without detrimental effects . One of them method non-pharmacological which can used For reduce painful labor is therapy *Birth Ball* (Nasrullah, et al., 2012).

Birth Ball means birth ball Where method Mother sitting on the ball during the labor process which has benefit help Mother in reduce pain moment labor Where *Birth Ball* is very good push power strong mother needed moment giving birth , position Posture an upright body , will support with good birth process as well as help position fetus is in an optimal position so that make it easier give birth to with normal conditions (Nasrullah, et al., 2012).

Based on description background behind the

problem that has been explained above , researcher mean to do study with title “ Influence *Birth Ball* vs. Pain Reduction in Mothers Giving Birth in the First Active Phase in the Delivery Room of the Health Center "Bancar " .

METHOD

Study This various quantitative with design *experiment quasi experiment* and design *two group pretest posttest design* . Study This implemented at the Health Center Bancar on March 07 until April 07, 2022.

Population in study This is all over Mother giving birth March to April 2022 totaling 55 respondents . The sample is part Mother giving birth March to April 2022 amounted to 16 respondents as group intervention and 16 as group control . The sampling technique used is *probability sampling*, namely by means of *simple random sampling* . Types of instruments use sheet observation *Visual Analog Scale* from Setiana and Nuraeni (2018) and SOP from Health Center Bancar .

The results of data collection will be done data processing in the form of editing, scoring, and tabulating, then researcher Conduct data normality tests with *Kolmogorov-Smirnova* . If the data is normally distributed then researcher will using the *independent sample T-Test* . However, If its distribution not normal, then will use *Mann Whitney U-Test* .

RESULTS AND DISCUSSION

1. Data General

Table 5.1 Distribution Characteristics Age of Mother Giving Birth at Health Center Bancar

No.	Characteristics Age	Frequency (f)	Percentage (%)
1	<20 Years	4	12.5
2	20-35 Years	21	65.6
3	>35 Years	7	21.9
	Amount	32	100.0

Source : (Primary Data, 2022)

Based on table 5.1 above obtained that part big Mother giving birth at the health center Bancar own age 20-35 Years (65.6%).

Table 5.2 Distribution Characteristics of Maternal Education in Health Centers Bancar

No	Characteristics of Education	Frequency (f)	Percentage (%)
1	ELEMENTAR Y SCHOOL	4	12.5
2	JUNIOR HIGH SCHOOL	10	31.3
3	SENIOR HIGH SCHOOL	12	37.5
4	UNIVERSITY	6	18.8
	Total	32	100.0

Source : (Primary Data, 2022)

Based on table 5.2 above obtained that almost Half of Mothers Give Birth at Health Centers Bancar have a high school education (37.5%).

Table 5.3 Distribution Characteristics Parity of Mothers Giving Birth at the Health Center Bancar

No.	Characteristics Parity	Frequency (f)	Percentage (%)
1	Primipara	13	40.6
2	Multipara	17	53.1
3	Grand multipara	2	6.3
	Total	32	100.0

Source : (Primary Data, 2022)

Based on table 5.3 above obtained that part Mother Giving Birth at the Health Center Bancar own Multiparity Parity (53.1%).

2. Special Data

1. Identification Pain Scale Reduction in Group Intervention in the Delivery Room of the Health Center Bancar

Table 5.4 Distribution Pain Scale Frequency in Groups Intervention in the Delivery Room of the Health Center Bancar

No.	Pain Scale Reduction Group Intervention	Frequency (f)	Percentage (%)
1	Decrease	12	75
2	Still	4	25
3	Go on	0	0
	Amount	16	100

Source : (Primary Data, 2022)

Based on table 5.4 above obtained that part big Respondent experience decline scale painful Decrease after given therapy *Birtball* (75%).

2. Identification Pain Scale Reduction in Group Control in the Delivery Room of the Health Center Bancar

Table 5.5 Distribution Pain Scale Frequency in Groups Control in the Delivery Room of the Health Center Bancar

No.	Pain Scale Reduction Group Control	Frequency (f)	Percentage (%)
1	Decrease	5	31.3
2	Still	9	56.3
3	Go on	2	12.5
	Total	16	100

Source : (Primary Data, 2022)

Based on table 5.5 above obtained part big Respondent experience decline scale painful Still after do in accordance with his wish or not given *birthball* (56.3%).

3. Analysis influence *Birth Ball* To Pain Reduction in Mothers Giving Birth in the First Active Phase in the Delivery Room of the Health Center Bancar

Table 5.6 Analysis influence *Birth Ball* To Pain Reduction in Mothers Giving Birth in the First Active Phase in the Delivery Room of the Health Center Bancar

Pain Scale Reduction	Group Intervention	Group Control	Total	Value (2-tailed)
	(f) (%)	(f) (%)	(f) (%)	
Decrease	12 37.5	5 15.6	17 53.1	0.012
Still	4 12.5	9 28.1	13 40.6	
Go on	0 0	2 6.3	2 6.3	
Amount	16 50	16 50	32 100	

Source : (Primary Data, 2022)

Based on Table 5.6 it is known that that Sig value 2- tailed of 0.012, the value is <0.05 so that can concluded that There is an Influence *Birth Ball* To Pain Reduction in Mothers Giving Birth in the First Active Phase in the Delivery Room of the Health Center Bancar .

The beginning of base taking decision researcher test Data normality using SPSS V.25 with normality test *Kolmogorov Smirnov* because of respondents >30 people. Get result 0.200 with Decision making if sig value >0.05 then the data is normally distributed . After get normally distributed data then researcher test using *the independent sample T- Test* , to see difference scale painful before and after on the intervention variables and control variables . The basis for taking decision , if Sig value . (2-tailed) < 0.05 , then there is significant difference . So that can taken decision that there is Influence

Birth Ball To Pain Reduction in Mothers Giving Birth in the First Active Phase in the Delivery Room of the Health Center Bancar .

DISCUSSION

1. Identification Pain Scale Reduction in Group Intervention in the Delivery Room of the Health Center Bancar

Research result obtained that part big Respondent experience decline scale painful Decrease after given therapy *Birball* (75%).

Perception pain also varies greatly from person to person women who are subjective . Some factors that can influential to perception pain felt by the mother giving birth is environment , experience personal , support family , culture , and condition psychology like emotions , fear and anxiety . Judha (2012) also said that emotion can increase stress or fear mother , who is physiological can increase uterine contractions so that increase the pain felt . When women in condition inpartu the experience stress , then in a way automatic body will do reaction defensive so that in a way automatic stimulate body emit stressor hormones , namely hormone catecholamines and adrenaline hormones , catecholamines This will released in concentration tall moment labor If candidate Mother No Can remove the fear before giving birth , various response body that appears among others the uterus becomes the more tense so that flow blood and oxygen to in muscles Keep going reduce Because artery shrink and narrow the result is an unbearable pain inevitable . High levels of adrenaline and catecholamines in blood also makes impulse painful increase many , reduce flow blood going to placenta so that supply oxygen For fetus decline , weakening contraction uterus and result prolongation of the labor process or long labor . Use *birth ball* will support Mother For use position the during the labor process . This is will help fetus down to in cavity pelvis and mother more A little feel pain . As reliever painful labor , *birthball* can used in a way simultaneous with method other non-pharmacological such as massage , aromatherapy , therapy music and compression warm or cold (Widyaswara P, 2012).

Study This in line with research conducted

Taavoni et al., (2011) entitled *Effect of Birth Ball Usage on Pain in the Active Phase of Labor: A Randomized Controlled Trial* obtained results that the average score pain in the group using method *birth ball* in a way significant more low when compared to with group control with p value <0.05 with amount 60 respondents were divided into over 30 each group which means existence difference decline painful before and after given *birth ball* . Influence *birth ball* this is what can influence decline painful that is with using 3 movements like move to rotate pelvis one way clockwise for 5-10 minutes , directing pelvis forward and to the back during 5-10 minutes , movement direct pelvis to left and to right during 5-10 minutes .

General data Respondent research in the work area health center bankrupt This part big own age 20-35 years , things This in accordance with theory that age reproductive somebody start from 20 to 35 years . While For education Mother giving birth at the health center bankrupt almost half Respondent have a high school education level , This Already fulfill government programs must study 12 years . Education is very important because with to get someone's education can add knowledge and easy in determine attitude . Most of parity multiparous mother , parity mother also determines emergency from the pregnancy process until finished giving birth . Mothers who have primiparous parity tends to Not yet own experience so that the worry for herself and her baby is very big , psychologically primiparous mothers tend to No stable and abundant wishful thinking . Whereas Mother with parity grandemultipara although own experience but factor the risk is also high .

Assumptions researcher with give *Birth Ball* can entertaining and diverting attention during childbirth . Positions that can controlled by the mother and some movement light can reduce anxiety and pain in labor . Therapy use *birth ball* this also raises proximity between husband and wife , roles share Husband also has influence against smoothness giving therapy *birthball* . Mom is also enthusiastic because of new first time seeing object like a ball that can used so that Mother interested For try it . How it works therapy This without reduce his or contractions , *birthball* give position comfort so that tired mother walking and sleeping on the left side , more enthusiastic use

birthball . Then use *birthball* also affects psychic so that anxiety mother also reduced Because husband always help beside him . From the reduced anxiety This Mother Can more relax moment come contraction so that the mother feels pain too reduce without reduce frequency or how long . There were 4 respondents who did not experience decline painful after given intervention therapy *birth ball* , matter This because of Mother Not yet own experience give birth to before and not can control her emotions , the mother who hopes quick finished without listen Instructions from midwife , fatigue in the mother also becomes factor Because coping in face painful Still with screaming and not can control himself . Then There is mothers who have given birth and have not accompanied husband Because husband Still in journey go home from work outside city . This is what makes not enough its effectiveness use therapy *birthball* in mothers who do not experience decline painful .

At the age of respondents 20-35 years old , can more easy done communication and more cooperative compared to with age not enough from 20 years and above from 35 years . So that age productive moment pregnant appropriateness is very important in determining the health of mothers and children in the process of pregnancy , childbirth , until end of postpartum period . High school education is more dominant can invited communicate so that the research process can run with as expected . The high and low someone is very influential pattern think someone . Mother with multiparity is also more Can control condition with results study experience decline painful compared to with primipara, this This because of experience is very influential communication , stress management and also coping in face problem .

2. Identification Pain Scale Reduction in Group Control in the Delivery Room of the Health Center Bancar

Research result obtained that part big Respondent experience decline scale painful Still after do in accordance with his wish or not given *birthball* (56.3%).

Pain is one of the mechanism defense experience that is a warning about existence danger . In pregnancy , attacks painful to inform to Mother that He middle experience contraction uterus . Childbirth

without painful is dangerous event like as it is *silent coronary thrombosis* . In normal labor , pain the is lost arise (intermittent). Attacks painful start feel when contraction reach its peak , and disappears after the uterus has relaxation . Degree painful varies from one to another patient , in the same patient in labor next and at different stages in same delivery . In some case , uterine contractions are not cause pain . According to Cunningham (2011), pain labor as contraction myometrium , is a physiological process with different intensities in each individual (Judha , Sudarti , Fauziah, 2012). Pharmacological action Still cause opposition Because giving drug during labor can penetrate placental barrier and has an effect on the fetus as well as on the mother . Non- pharmacological methods No endanger for Mother nor the fetus, neither slow down labor If given control adequate pain , and not have effect allergy and also effect negative other .

Pain appear consequence reflex physical and response psychic mother . Tension emotion due to anxiety to the point of fear can aggravate perception painful during labor . The pain experienced Mother when face labor can stimulate afraid so that arise anxiety that ends with panic . This is can cause response physiological that reduces ability uterus For contract with consequence will extend time labor . Pain during the first stage of labor is severe pain with longer time , for That need be noticed Handling For overcome pain in the first stage of labor (Kennedy et al, 2007; Kurniawati , 2017). Fear and anxiety can cause issuance stress hormones in amount large (epinephrine , norepinephrine , etc.) which results in the emergence painful prolonged and more labor weight (Simkin, P. Whaley, J. and Keepler , A., 2007).

In the control group that did not given intervention therapy *birth ball* this , respondent only do go for a walk light and sleep on left side like as it is labor usually . Walk and sleep on the left side recommended Because can speed up opening and lowering head . Then the pain contractions are also frequent arise . In respondents this control group tend more passive and easy tired because of getting on and off the bed for road Then sleep on your left side , mother tend more choose Sleeping just Because feel tired . Mother feels not enough calm and more Lots worried because of No There is movement that can

give effect relaxation for mother That myself . Even though husband Still accompany However Mother more Lots his anxiety Because The mother focuses on the contractions she is experiencing and does not There are other movements that can be done help divert his mind .

Assumptions Researchers in the control group found 5 respondents who experienced decline pain , this because of Mother can control emotions and follow directions midwife in do relaxation , mother can control his breath , and not screaming , mother who filled nutrition during the labor process , then family support and support so that psychic Mother Still safe and more calm . While 2 respondents who actually experience increased pain or increased pain That myself . Because No there is support from family and mother who do not can control her emotions , screaming and lack of intake during the labor process , so that his anxiety the more increase and create Mother No under control .

In the control group there was a tendency do activity in accordance his wish matter this is what can influence No under control feelings and emotions mother , so that Mother experience panic and difficulty directed . So from That Mother will more fast experience tired and not stand with the pain caused , because of that That control group no experience decline pain . So that impact on the mother's increasing power decrease consequence from behavior mother who tends to more active at the moment the occurrence contractions .

3. Analysis influence *Birth Ball* To Pain Reduction in Mothers Giving Birth in the First Active Phase in the Delivery Room of the Health Center Bancar

Research result known that 2-tailed Sig value of 0.012, value is <0.05 so that can concluded that There is an Influence *Birth Ball* To Pain Reduction in Mothers Giving Birth in the First Active Phase in the Delivery Room of the Health Center Bancar .

Use *birth ball* can also increase the hormones needed during the labor process that is hormone oxytocin and hormones endorphins . Hormones oxytocin often known as a “hormone” love ” because hormone This relate close with making love , fertility , contractions during labor and delivery , and the release of breast milk during breastfeeding . Receptors cells that allow body woman For respond

oxytocin experience improvement in a way gradually in pregnancy , and then increase sharp at the moment giving birth (Aprilia, 2017). Endorphins effect calming and soothing pain . Hormones This like morphine experience will rise ahead end pregnancy , and then rose steadily and sharply during labor in the labor process experience without treatment . Endorphin levels more tall during labor and delivery can produce condition altered consciousness that helps a Mother can going through the labor process this , even when this process become very long and difficult (Aprilia, 2017). A a capable mother do relaxation in tune uterine contractions take place rnaka Mother the will feel comfort during the labor process . In addition *birth ball* is very good push with strong power mother needed moment giving birth , position Posture upright body will support the birth process as well as help position fetus is in an optimal position so that make it easier give birth to normally . During therapy Mother give birth sitting comfortably possible and the ball shape that can be adjust with form body Mother make Mother more easy relaxation , besides That ligaments and muscles especially those in the area pelvis become loosen and reduce pressure on the sacroiliac joints , blood vessels blood around the uterus and pressure on the bladder urinary , back , waist , bones tail as well as can reduce pressure on the perineum. Maintaining Mother For still active move The same with give Mother trust self For control pain and decrease thought as well as evaluation negative to painful so that there is a distraction process that makes focus Mother to painful can diverted . This is make Mother more comfortable and can control the intensity of the pain felt Mother during the labor process (Gau M-Let all, 2011; Kurniawati , 2017).

This result in line with research by Kurniawati (2018) Effectiveness of *birth ball* exercises to Reducing Labor Pain in the First Active Phase in Primigravida. Research Results shows average pain delivery in the given group exercise *birth ball* more low 4.5 compared to with group control 5.4 with p-value of 0.01 . Research this is also in line with research conducted by (Fadmiyanor , 2017) found that the average intensity painful before and after given birth ball method was 6.05 and 4.95. The results were prove in a way statistics existence difference intensity painful labor before and after given birth ball method in the first phase active with p-value =

0.001.

According to researchers, the pain experienced Mother giving birth, caused by the presence of reaction physiological childbirth, such as the baby who keeps on urge go out through the uterus and on give emphasis on the mouth uterus, and in the condition This feeling painful will the more No held back. In line with opinion (Asri, 2012; Afritayeni, 2017) Active phase labor that is frequency and duration of uterine contractions generally increased (contraction) considered adequate / sufficient If happen three times or more in 10 minutes and lasts for 40 seconds or more), cervix open from 4 to 10 cm, usually with speed 1 cm or more per hour up to opening complete (10 cm), occurs decline part bottom fetus. So it is very necessary done therapy For reduce painful labor mentioned, one of them is massage *birthing ball*. This will help Mother in distract the pain consequence contraction with existence movement so that the mother's focus is on the pain can distracted and mother more focus on the relaxation provided by the therapeutic movement *birth ball*.

CONCLUSION

1. Most mothers give birth in the active phase of the first stage of labor in the delivery room of the health center Bancar which has given *Birth Ball* experience decline scale painful decrease.
2. Most mothers give birth in the active phase of the first stage of labor in the delivery room of the health center Bancar that does not given *Birth Ball* experience decline scale painful still.
3. There is an Influence *Birth Ball* To Pain Reduction in Mothers Giving Birth in the First Active Phase in the Delivery Room of the Health Center Bancar.

Suggestion

1. For researchers furthermore
For researchers furthermore expected For do development in research this and research more Lots about therapies complementary or non-pharmacological specifically in lower pain in the mother giving birth.
2. Share Place Study
Based on results study This expected can made into For expand knowledge specifically in the field health as well as

as input giving education to public about therapy *birthball* that can applied with give benefit decreased pain.

3. For Respondents

In facing the labor naturally Mother will experience painful even anxiety, because of existence therapy This expected can help Mother in face pain and help relax Mother so that Mother can diversion against pain in the process of labor.

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