

INFLUENCE MASSAGE BABY TO FREQUENCY SPITTING UP IN BABIES 1-3 MONTHS OLD AT GRIYA HEALTHY MIDWIFE MOTHER KEPANJEN

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Received: 05-05-2026

Revised: 16-06-2026

Approved: 24-06-2026

ABSTRACT

Spitting up is frequent conditions occurs in babies age 1–3 months consequence Not yet ripe system digestion, especially sphincter esophagus part below. Frequency high spit up can cause discomfort in babies as well as anxiety in parents. One of the intervention non-pharmacological which can done For help lower frequency spit up is massage baby. Research This aim For know effectiveness massage baby to decline frequency spit up in babies 1–3 months old at Griya Healthy Midwife Mother Kepanjen. Research This use method quantitative with quasi-experimental design through pretest-posttest control group design approach. Sample study totaling 30 babies aged 1–3 months who experience spit up and share become group interventions and groups control of 15 respondents each. The sampling technique sample using purposive sampling. Group intervention given massage baby twice a week for 30 days, while group control only get maintenance routine without massage baby. Data collection was carried out use sheet observation frequency spit up before and after intervention. Data analysis using the Mann Whitney U Test with level significance $\alpha = 0.05$. Research results show that before given intervention all over baby on both group experience spit up category heavy. After being given massage baby, happened decline frequency spit up in groups intervention become category mild and moderate, while in the group control part big baby still is in the category weight. Analysis results statistics show there is significant difference between group interventions and groups control after treatment given (p -value < 0.05). Can concluded that massage baby effective as intervention non-pharmacological in lower frequency spit up in babies age 1–3 months.

Keywords: Baby, Spitting Up, Baby Massage, Digestive System, Non-pharmacological therapy.

INTRODUCTION

Babies aged 1–3 months is phase beginning very important life in the process of growing flower. At this stage this, body organs baby especially system digestion Still Not yet ripe in a way perfect, so that baby often experience spit up (regurgitation) after breastfeeding [1]. Spitting up in babies is condition common physiological happen consequence Not yet perfect function sphincter esophagus part down, so that content stomach can return go out after breastfeeding or formula feeding. Although classified as normal, excessive spit up often can cause baby become fussy, no comfortable, and risky bother intake nutrition [2].

Globally, regurgitation or spit up in babies is a very common condition occurs in babies Age 0–3 months. Around 40–65% of babies in the world experience regurgitation physiological in three month First life consequence immaturity system digestion, especially sphincter esophagus part below. [1] In Indonesia, around 30–50% of babies age 0–3 months reported experience spit up

in a way routine after breastfeeding , especially If technique breast-feed not enough appropriate or position baby No in accordance after breastfeeding [3] . In the Province East Java , case disturbance light digestion baby like spit up Still often found in service integrated health posts and practices independent midwife . It is estimated more from 40% of mothers report the baby experience spit up during the months beginning life . In Malang Regency , especially in facilities service health like Home Healthy Midwife Mother Kepanjen , found that about 3–5 out of 10 babies age 1–3 months experience spit up after breastfeeding based on report visit Mother to service health. Condition This show the need non- pharmacological interventions like massage baby For help reduce frequency spit up and increase comfort baby .

Based on results interview beginning with power health in Griya Healthy Midwife Mother Kepanjen , it is known that baby age 1–3 months often experience spit up after breastfeeding . Condition This generally happen Because system digestion a baby who is still Not yet ripe so that function stomach Not yet Work optimally . The baby's mother also said that spit up that occurs Enough often make baby become fussy , restless , and sometimes difficult Sleep after breastfeeding . This is cause concerns for parents , although in a way general condition the Still considered physiological . Massage baby is one of the form stimulation tactile that has used since long in maintenance baby For provide a sense of comfort as well as support grow flower baby . In traditional massage baby Already known in various culture as method For increase health baby through touch gentle on the body baby . Along development knowledge health , massage baby start investigated in a way scientific and proven give various benefit physiological , especially in the system digestion baby . Stimulation massage the stomach area can help increase activity nerve vagus plays a role in arrange Work stomach and intestines [3] . In development next , massage baby start used as non-pharmacological interventions in facilities service health mother and child . Massage baby done with technique certain which include touch soft , pressure light , and movement orderly and purposeful For give effect relaxation in infants . Research show that massage baby can help expedite system digestion , reducing bloating , increase quality sleep , and potential reduce frequency spit up in babies age 1–3 months [4] . Based on problems that have been described , researchers interested For do study with title Influence Baby Massage against Frequency Spitting Up in Babies Aged 1–3 Months at Home Healthy Midwife Mother Kepanjen

RESEARCH METHODS

Methods used in study This is study quantitative with approach experiment . Type research used is a Quasi Experimental Design with Pretest-Posttest Control Group Design , namely research conducted with compare two group , namely group interventions and groups control , as well as done measurement before (pretest) and after (posttest) treatment given .

Population in study This is all over baby aged 1–3 months who experience spit up in the service area Home Healthy Midwife Mother Kepanjen . Amount sample in study This as many as 30 babies were divided become two group , namely 15 babies in the group intervention and 15 infants in the control group control . Taking technique sample using purposive sampling with non-random sampling approach , ie election sample in a way on purpose based on criteria

inclusion and exclusion that have been determined by the researcher . Criteria inclusion in study This includes : Babies aged 1–3 months ,, Experience spit up at least once a day , Baby in condition healthy , and parents willing become respondents . Meanwhile criteria exclusion includes : Babies with abnormalities digestion heavy or disease congenital , the baby is Sick or in maintenance medical special , and babies who are not follow intervention massage in a way full during study ongoing .

Study This done for 30 days . Group intervention given treatment in the form of massage baby twice a week in accordance standard massage baby , with technique massage soft on the part body certain including the stomach area For help system digestion baby . Meanwhile that , group control No given intervention massage baby and only get maintenance routine like normal . Evaluation carried out on day 1 and day 30 for see change frequency spit up on both group . Variable independent in study This is massage baby , while variables dependent is frequency spit up in babies aged 1–3 months . Data collection was carried out through observation by researchers and recording frequency experienced regurgitation baby based on report Mother respondents . The instrument used in study This is sheet observation frequency spit up before (pretest) and after (posttest) intervention massage baby . Data analysis was carried out using the SPSS program. Analysis univariate used For describe characteristics respondents and distribution frequency spit up . Analysis bivariate using the Wilcoxon Signed Rank Test to know difference frequency spit up before and after intervention in each group . Furthermore , to know difference effectiveness between group interventions and groups control Mann Whitney U Test was used with level significance $\alpha = 0.05$.

RESULTS AND DISCUSSION

A. General Data

Table 1. General Data

Characteristics	Category	Group Intervention n (%)	Group Control n (%)
Mother's Age	Late Teenagers	5 (33.3%)	6 (40.0%)
	Early Adulthood	10 (66.7%)	9 (60.0%)
Education	JUNIOR HIGH SCHOOL	4 (26.7%)	4 (26.7%)
	SENIOR HIGH SCHOOL	11 (73.3%)	11 (73.3%)
Work	housewife	10 (66.7%)	10 (66.7%)
	Private	3 (20.0%)	3 (20.0%)
	Self-employed	2 (13.3%)	2 (13.3%)
Parity	Primipara	7 (46.7%)	7 (46.7%)
	Multipara	8 (53.3%)	8 (53.3%)
Breastfeeding history	Exclusive Breastfeeding	8 (53.3%)	8 (53.3%)
	Breast milk + food	5 (33.3%)	4 (26.7%)
	PASI	2 (13.3%)	3 (20.0%)
Type Baby's Gender	Man	8 (53.3%)	7 (46.7%)
	Woman	7 (46.7%)	8 (53.3%)
Baby Age	1 month	5 (33.3%)	5 (33.3%)
	2 months	6 (40.0%)	6 (40.0%)
	3 months	4 (26.7%)	4 (26.7%)

Based on table 1 is known that part big age mothers in the group intervention is in the category mature beginning as many as 10 respondents (66.7%), while in the group control part large is also in the category mature beginning as many as 9 respondents (60.0%). Apart from that , in the group control there were 6 respondents (40.0%) with category teenager end , while in the group intervention as many as 5 respondents (33.3%).

Education level , majority respondents in the group intervention own education Lastly, there were 11 respondents (73.3%) in high school and 4 respondents (26.7 %) in junior high school . The same results were also found in the group control Where part big respondents 11 respondents (73.3%) had a high school education and 4 respondents (26.7%) had a junior high school education. Occupation , most of them big respondents good in groups intervention and group control is Mother House household (IRT) , namely 10 respondents (66.7%) each . Respondents who work as private as many as 3 respondents (20.0%) and self-employed as many as 2 respondents (13.3%) in each group .

Parity , part big respondents in the group intervention and group control including multipara as many as 8 respondents (53.3%), while primipara as many as 7 respondents (46.7%).

Based on history breastfeeding , some big babies in groups intervention get exclusive breastfeeding as many as 8 respondents (53.3%), ASI + PASI as many as 5 respondents (33.3%), and PASI as many as 2 respondents (13.3%). Meanwhile, in the group control part big also get exclusive breastfeeding as many as 8 respondents (53.3%), ASI + PASI as many as 4 respondents (26.7%), and PASI as many as 3 respondents (20.0%). Type sex babies , in groups intervention part big baby various sex man as many as 8 babies (53.3%), while in the group control part big baby various sex Woman as many as 8 babies (53.3%). And the age babies , both in groups intervention and group control part big baby 2 months old namely 6 babies each (40.0 %), while 1 month old as many as 5 babies (33.3%) and 3 months old as many as 4 babies (26.7%).

B. SPECIFIC DATA

Table 2. Special Data

Variables	Category	Group Intervention n (%)	Group Control n (%)
Frequency Gumoh Pretest	Heavy	15 (100%)	15 (100%)
Frequency Posttest	Light	9 (60.0%)	0 (0%)
Spitting Up	Currently	6 (40.0%)	1 (6.7%)
	Heavy	0 (0%)	14 (93.3%)

Based on table 2 it is known that that before done intervention (pretest), all babies in groups interventions and groups control experience frequency spit up category heavy namely 15 babies each (100%). After being given intervention massage baby for 7 days , in the group intervention happen decline frequency spit up , where part big baby is in the category light as many as 9 babies (60.0%) and categories currently as many as 6 babies (40.0%). No there is baby with category spit up weight on the group intervention after given treatment . While that , in the group control that is not given intervention massage baby , some big baby Still is in the category spit up heavy as many as 14 babies (93.3%), and only 1 baby (6.7%)

experienced decline become category currently .

C. Mann-Whitney Frequency Test Results Gumoh Pretest and Posttest in Groups Control and Intervention

Table 4. Results of the Mann-Whitney Frequency Test Gumoh Pretest and Posttest in Groups Control and Intervention

Variables	Group	N	Mean Rank	Sum of Ranks
Frequency Gumoh Pretest	Control	15	15.00	225.00
	Intervention	15	16.00	240.00
Frequency Posttest Spitting Up	Control	15	23.00	345.00
	Intervention	15	8.00	120.00

Based on the results of the Mann-Whitney test on the frequency of spitting up before the pretest, the mean rank value for the control group was 15.00 and for the intervention group was 16.00. A p-value of 0.717 ($p > 0.05$) indicates no significant difference between the control and intervention groups before treatment. This indicates that the initial condition of spitting up frequency in both groups was relatively similar or homogeneous.

Furthermore, the Mann-Whitney test results for post-test spit-up frequency obtained a mean rank value of 23.00 for the control group, while the mean rank value for the intervention group was 8.00. A p-value of < 0.001 ($p < 0.05$) indicates a significant difference between the control and intervention groups after being given infant massage intervention.

The lower mean rank of the intervention group compared to the control group indicates that the frequency of spit-up in the intervention group decreased more significantly after infant massage. Therefore, it can be concluded that infant massage is effective in reducing the frequency of spit-up in infants aged 1–3 months at Griya Sehat Bidan Bunda Kepanjen.

Based on results study known that part big mothers in the group intervention and group control is in the category mature early . Age mature beginning is age reproductive Healthy Where Mother tend own readiness more physical and psychological Good in nurse babies , including in understand need baby like pattern breastfeeding , position breastfeeding , and handling spit up . Mother with older age ripe generally own experience and skills taking more decisions Good in maintenance baby compared to Mother age teenager .

Besides that , the majority respondents in both group own level high school education . Higher level of education tall can influence ability Mother in accept information health , including education about massage babies and care gumoh . Education makes it easier Mother understand benefit stimulation massage baby to comfort and system digestion baby .

Most of the respondents in both the group also works as Mother House household (IRT). Condition This allows Mother own more time Lots For do maintenance directly on the baby , including do massage baby in a way routine . Besides that , the majority respondents including multipara, which indicates that Mother has own experience previously in nurse baby so that more understand condition spit up in babies .

History of breastfeeding in both group part big is exclusive breastfeeding . Exclusive breastfeeding known own benefit in support health system digestion baby Because more breast milk content easy digested compared to formula milk. However thus , gumoh Still can occurs in babies age early consequence function sphincter esophagus bottom that has not been mature . In the study This part big baby 2 months old , where system digestion baby of course Still in stage development so that spit up more often happen .

Research result This supported by research Mardalena & Susanti (2022)

that state that characteristics Mother like age , education , occupation , and experience nurse baby influential to knowledge Mother about massage baby . Research the explain that Mother with age adults and education more tall tend own greater understanding Good about benefit massage baby for health and growth flower babies [5] . Another study by Safitri (2019) explains that attitude Mother about massage baby influenced by knowledge and experience Mother in nurse baby . Mothers who have knowledge Good will more believe self in do massage baby in a way independent [6] . Education and employment status Mother relate with frequency implementation massage baby . Mother with more education Good more easy accept information health so that more routine do stimulation massage baby [7] . Study Sulistiani & Wijayanti (2020) also explained that education health can increase skills Mother in do massage baby with Correct so that Mother more capable give optimal stimulation in infants [8] . Furthermore study Kumalasari et al . (2023) stated that education health capable increase knowledge , attitudes , and skills Mother in do massage baby . Good knowledge will influence behavior Mother in give stimulation massage baby in a way routine [9] . F actor education , employment , and parity Mother influence interest Mother in do massage baby in a way regular .

Multiparous mothers tend to more believe self in do maintenance baby Because has own experience previously [10] . Based on results study known that before given intervention massage baby , whole babies in groups interventions and groups control experience frequency spit up category heavy namely 15 babies each (100%) . Condition the show that at the age of 1-3 months , spit up is common conditions happen consequence Not yet ripe system digestion babies , especially sphincter esophagus part functional bottom withhold food so as not to return to esophagus .

After being given intervention massage baby for 7 days , it happened significant changes in the group intervention . Most of the baby experience decline frequency spit up become category light as many as 9 babies (60.0%) and categories currently as many as 6 babies (40.0%). No found Again baby with category spit up weight on the group intervention after done massage babies . On the other hand , in the group control that is not given intervention massage baby , some big baby Still experience spit up category heavy as many as 14 babies (93.3%), and only 1 baby (6.7%) experienced decline become category currently .

Decline frequency spit up in groups intervention happen Because massage baby can give effect relaxation of muscles and increase comfort baby . Besides that , massage baby especially in the stomach area can help increase function system digestion , smooth intestinal peristalsis , reducing gas buildup , and helps emptying stomach so that risk spit up become reduced . Touch soft on massage babies can also stimulates the vagus nerve which plays a role in increase gastrointestinal function in infants .

Decline frequency spit up in groups intervention happen Because massage baby can help increase function baby's gastrointestinal system . Massage gentle especially in the abdominal area can stimulate movement intestinal peristalsis , accelerates emptying stomach , reduce gas buildup , and provide comfort to the baby so that risk spit up become reduced . Besides that , stimulation touch moment massage babies also help increase relaxation baby and repair function nerve vagus plays a role in system digestion . Research results This in line with study Effectiveness Baby Massage Against Disturbance Spitting Up in Babies Aged 0-3 Months at Latumi Health Care Padang, conducted by Hasanalita and Yen Risa Sanputri 2022. Research the state that massage baby effective in lower disturbance spit up in babies age 0–3 months Because stimulation massage capable help repair function digestion baby [11] . Another study by Dede Sri Mulyana and Lina Herlina in article Influence Effectiveness Baby Massage Against Ascension Baby Weight Aged 0-3 Months at PMB Midwife Lina Herlina in Subang in 2024 explained that massage baby can repair system digestion and improve baby's gastrointestinal function through vagus nerve stimulation . Condition the helps the digestive process become more optimal so that complaint spit up can reduced [12] . Besides that , research Effectiveness Baby Massage against Improvement Body Weight in Babies Aged 0–3 Months by Dersy Elya , M. Ridwan, and Yetty Anggraeni mention that massage baby own benefit to function physiological babies , including increase circulation blood , repair system digestion , and improve comfort baby . Function better digestion Good can help lower incident spit up in babies age early [13] . Research Influence Baby Massage for Quality Baby Sleep Aged 0–3 Months by Eka Mustika Sari Abukasim and Natasha Novianty explain that massage baby give effect relaxation through decline hormone stress and increase comfort baby . A baby who is older relax after breastfeeding tend experience decline frequency spit up compared to tense baby or often crying [14] . Next , research Influence Baby Massage for Ascension Baby Weight 0-3 Months Old by Eny Astuti state that massage baby can repair metabolism and body organ function babies , including gastrointestinal system , so that the digestive process become more good and bad like spit up can reduced [15] .

Based on results research , there are clear differences between the baby given intervention massage baby with baby who is not given massage babies . In the group intervention , after done massage baby for 7 days , it happened decline frequency significant regurgitation from category heavy become category mild and moderate . On the other hand , in the group control that is not get intervention massage baby , some big baby still is in the category spit up heavy although has done observation in the same period . This is show that massage baby own role important in help repair condition digestion baby compared to with maintenance routine without stimulation additional . This result in line with study Hasanalita & Sanputri (2022) stated that that baby who gets massage experience decline disturbance digestion like spit up compared to with baby who is not given massage baby , because existence helpful stimulation repair function infant's gastrointestinal system [16] . Difference the can explained through mechanism physiological massage baby to system digestion . Massage baby Work through stimulation touch soft that can activates the vagus nerve , namely nerves that play a role important in arrange function stomach and intestines. Activation nerve This will increase motility stomach as well as speed up the emptying process stomach , so that food No too long inside stomach and risk occurrence reflux or spit up

become more low . This is supported by Mulyana & Herlina (2024) who explains that stimulation massage baby can increase Work gastrointestinal system through vagus nerve activation so that the digestive process become more optimal [17] . Besides that , massage babies also play a role in increase movement intestinal peristalsis so that the digestive process food become more smooth . Improvement peristaltic This help speed up processing food and prevent accumulation content stomach that can trigger spit up . Research Dersy Elya et al . (2023) stated that massage baby can increase function physiological body , especially system digestion , through improvement better intestinal circulation and motility good [18] . No only that , massage babies also give effect relaxation in babies which has an impact on reducing hormone stress and increase comfort after breastfeeding [19] . More babies calm tend No cry excessive or experience tension muscles that can make things worse condition spit up . Effect relaxation this also helps baby more easy adapt after the breastfeeding process so that risk regurgitation become more small . This matter reinforced by research Abukasim & Novianty (2025) stated that that massage baby capable increase comfort physiological baby as well as repair quality function body including system digestion and sleep baby [20] .

With Thus , the difference between group intervention and control can explained in a way physiological that massage baby give stimulation that is capable repair function system digestion through a number of mechanism , namely improvement vagus nerve activity , increased intestinal peristalsis , reduction of gas in channel digest , as well as effect relaxation in babies . While in the group control that is not get massage baby , physiological process the No experience stimulation addition so that function digestion walk in a way experience without optimization , which causes frequency spit up still high . Therefore that , massage baby can concluded as intervention effective non- pharmacological in lower frequency spit up in babies age 1–3 months .

CONCLUSION

Based on the findings of this study, baby massage was shown to be an effective non-pharmacological intervention for reducing the frequency of spitting up in infants aged 1–3 months at Griya Healthy Mother Midwife Kepanjen. Infants who received baby massage experienced a significant reduction in the frequency of spitting up compared with those who did not receive the intervention. This effect is likely associated with improved digestive function through vagal nerve stimulation, enhanced intestinal peristalsis, faster gastric emptying, reduced gastrointestinal gas, and increased infant relaxation after feeding. However, this study has several limitations, including the relatively small sample size, the short intervention period, and the inclusion of participants from a single healthcare setting, which may limit the generalizability of the findings. Therefore, midwives and other maternal–child health practitioners are encouraged to incorporate baby massage as part of routine infant care education for parents to help prevent frequent spitting up. Future studies are recommended to involve larger and more diverse populations, use randomized controlled trial designs, extend the follow-up period, and evaluate additional outcomes such as infant weight gain, sleep quality, and overall digestive health.

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