

Swiss Ball Exercise In Active Phase Of Labor: A Review Of Clinical Outcomes

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Abstract:

Background: Childbirth is a transformative yet painful experience which impacts the mother physically and psychologically. Managing labor and pain is the crucial for the well-being of the mother and the neonates. There are two ways in which labor pain can be reduced namely pharmacological and non-pharmacological method such as birth ball which has been widely used for the better birthing experience. To evaluate the evidence-based insights of using Swiss ball exercises during the active phase of labor and to reviews its impact on pain intensity, duration of labor, maternal and neonatal outcomes.

Materials and Methods: This review encompasses 12 studies conducted between 2011 and 2024, utilizing database like PubMed and Scopus to investigate the effectiveness of Swiss ball exercise during labor.

Results: The findings indicated that Swiss ball exercises during labor offers significant benefits for mothers. It helped in alleviating the pain and shortening the first and second stage of labor making the labor less physically and emotionally tiring. It enhanced maternal satisfaction, and it helped in reduction in caesarean section risks and vulvar swelling and reduced the overall complications associated with childbirth. However, the uncertain neonatal outcome highlights a gap in knowledge and the need for further studies.

Conclusion: Implementing a standardized Swiss ball exercise during labor has the potential to decrease pain, duration of labor and improved maternal satisfaction but there was no change in neonatal outcomes.

Key Word: Birth ball; Labor pain; Exercises during labor; active phase of labor; Swiss ball

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I. Introduction

Childbirth being the most profound and life-changing experiences for many women which brings joy and fulfilment along with a persistent pain which can impact both mother and fetus altering natural birth process (Gallo.et.al.2018). Labor pain can be challenging experience for women due to combination of physiological and psychological factors which can bring effects to the women (Sönmez et.al 2023). Pain is the natural process which can be sometimes overwhelming for the journey of motherhood. (Gau.et.al.,2011). Thus, labor pain is the complex phenomenon and requires the urgency for understanding the labor pain and enhancing the support required during the labor for the positive experiences of the women (Whitburn et.al.,2014).

The process of labor is divided into three stages 1) first stage of labor,2) second stage of labor and 3) third stage of labor (Hutchison et.al.,2023). The first stage of labor starts when labor starts and end when the dilation reaches to 10cm.Further first stage is divided into latent phase (0-5 cm) and active phase (6cm to full cervical dilation) (Gill.et.al.,2023). The second stage of labor starts from full dilation of cervix till delivery of the fetus (Cohen.et.al.,2024). The third stage of labor begins immediately after the delivery of the fetus and ends with the delivery of the placenta (Hersh.et.al.,2024). The World Health Organization promotes non-pharmacological intervention like physiotherapy intervention for management of pain which helps to turn the negative birthing experience into a source of strength. (DelgadoA.et al., 2018).

Natural delivery has been widely promoted in various countries as it is beneficial for both mothers and newborns. It is a cost-effective option, reducing medical expenses and the length of hospital stays and eliminating the need for general anesthesia. Natural delivery is related to lower risk of post-partum complications like infection and hemorrhage which help in recovering mother quickly while mother undergoing C-section can inherit certain maternal complications which include excessive bleeding, infections and longer recovery periods. But, in certain situation C-section can be life saving for both mother and the newborn. (Kobra Mirzakhani.et, al.,2015).

In many developing countries, like India, C-section rate has increased and crossed the WHO threshold of 10-15% (Nivedita Roy. et.al 2021). The high CS can be a high risk for them and causes financial burden to the family (Abhishek Bhartia et.al 2023).

Childbirth being the natural process can cause some discomfort due to which some women fear the experience of labor due to which C-section s being promoted to avoid the pain. In Iran, C-section rates has increased in public hospitals rising to 40-50% to avoid labor pain even though the procedure carries a maternal death up to 5 times higher than vaginal delivery. (Somayeh M et al., 2015).

Managing labor pain is crucial part of obstetric and intrapartum care which include both pharmacological and non-pharmacological approaches. These methods range from pharmacological such as epidural analgesia to non-pharmacological approaches such as breathing exercises, birth ball, warm compress, massages, water therapy etc. and these methods are found effective in managing pain and enhancing overall labor experience. Pharmacological pain relief can cause side effects to the mother and hinder their physical activity. (Ramia Mutia Ulfa,2021)

The birth ball also known as the Swiss ball, Petzi ball or Fit ball originally used in 1963 by physiotherapists to decrease back pain. In 1980, Perez and Simkin discovered Swiss ball for the use of childbirth and educated medical professionals on its application. (Somayeh M et al., 2015).

The Swiss ball or birth ball is a cost-effective round plastic exercise ball which comes in different sizes that is 45cm, 55cm, and 65cm (Carrière et al., 1999). It is also used during labor as it enhances maternal comfort and promotes the pelvic movement through bouncing, rocking and rotation. It helps to open a pelvic outlet and helps in labor. (Somayeh M et al., 2015). It supports an upright position during labor which promotes fetal descent with the help of gravity and increases pelvic dimensions. It also empowers women's psychological wellbeing, allowing them to take active participation for their care, posture and help in managing labor pain. (Sujata J et, al 2023). The ball allows pregnant women to assume many positions such as squatting, sitting, kneeling providing comfort and easy positional change. Bouncing on the ball or lying over the ball or rocking on the ball helps in reducing perineal pressure. (Raina.E. Farrang et.al, 2018). Up till date there is no guideline for the duration of Swiss ball exercise during active phase of labor hence this review will evaluate the evidence-based insights of most effective duration of Swiss ball exercises during the active phase of labor and to reviews its impact on pain intensity, duration of labor, maternal and neonatal outcomes. This review will focus on the effects of Swiss ball exercises during the active phase of labor on maternal and neonatal outcomes including pain, duration of labor, maternal satisfaction and neonates.

II. Methodology

Literature search strategy

In this review, we conducted a thorough literature search using Google Scholar, PubMed, Scopus and Web of Science with keywords 'Swiss Ball', 'Labor', 'Birth ball', and 'Active Labor'. Articles were selected based on their relevance to the study objectives.

Inclusion criteria

The review includes the studies that corresponds with the criteria mentioned as follows:

- The study included from 2011 onwards.
- The study population consisted of pregnant women, age above 18 years, and women in active phase of labor.
- The intervention included Swiss Ball Exercise during active phase of labor.
- The study had a control group.
- The outcomes were related to duration of 1st stage labor, duration of 2nd stage labor, pain during labor, maternal satisfaction with childbirth, neonatal outcomes.

Exclusion Criteria

- Paper not published in English
- Birth ball given during antenatal period.
- If they were review paper and case series

Data extraction and synthesis

Full-text articles meeting initial criteria were retrieved and reviewed against established inclusion and exclusion criteria. Data extracted from each eligible study included study design, participant demographics, intervention details, outcome measures, and significant findings. Given the anticipated variability in methodologies, intervention designs, and outcome measures, a narrative synthesis were employed to integrate findings. This approach aims to evaluate the effectiveness of Swiss ball exercises during active phase of labor while identifying insights and limitations that can guide future research.

Table 1: Lists of studies from 2011-2024 on Swiss ball exercises during active phase of labor.

S.NO	AUTHOR, YEAR, JOURNAL NAME	AIM	STUDY DESIGN	SAMPLE SIZE	DURATION	INTERVENTION	OUTCOME MEASURES	CONCLUSION
1	Delgado, et.al/2024/ Journal of Physiotherapy	This study evaluates the effectiveness of active pelvic movements on a Swiss ball in reducing the duration of the first stage of labor compared with usual care.	RCT	200 I.G-Active pelvic movements on a Swiss ball Oxytocin Analgesia (n=100) C.G-Usual care Oxytocin Analgesia (n=100)	152 minutes	The participants were given active pelvic movements exercises on Swiss ball in various positions that is seated, on all fours and leaning on the ball and ball size was given according to the height of the patient. In control group participants were given usual obstetric care.	The primary outcome was duration of first labor. The secondary outcomes included second stage of labor, pain intensity and maternal satisfaction measured by VAS, maternal anxiety, perineal tear, 15-item maternal perception of childbirth fatigue questionnaire, APGAR Score	Duration of 1 st stage labor was ↓ -179min; VAS ↓ by -2.7. second stage of labor ↓ by -19min. maternal anxiety ↓ by -9 and maternal fatigue ↓ by -18.
2	Jha, Vyas.et.al/2023/ Cureus	To explore the effectiveness of birthing ball exercises on labor pain and labor outcome among primigravidae mothers.	QUASI-EXPERIMENTAL	60 Swiss ball exercise (n=30) Routine standard care (n=30)	20 minutes with subsequent of 1 hour gap	Intervention group performed exercise in 65cm birthing ball. The exercises included in sitting and kneeling position for 20 minutes for two sessions with a subsequent gap of 1 hour.	Personal Information Form, Visual Analog scale, Maternal outcomes (duration of labor, rate of cervical dilation, vital signs and mode of delivery) and neonatal outcomes (APGAR score)	the practice of birthing ball exercise during labor decreased labor pain; ↓duration of labor in C.G-19.2, I.G-14.4, rate of cervical dilation I.G>C.G.an analgesics given during labor C.G>I.G Maternal vitals I.G>C.G, NVD in C.G-16 and in I.G-26 and C-section in C.G-12 and in I.G-4. The APGAR score >7 in C.G-23 and I.G-29.
3	Aslantaş et.al/2023/ Research Square	To determine the effect of the birth ball on labor pain, labor duration, birth comfort, and satisfaction	RCT	120 Swiss ball exercise (n=60) Routine standard care (n=60)	30 minutes	Intervention group performed Swiss ball exercise in 3 different positions: sitting, kneeling and squatting. Swiss ball was given to the participants according to the height for	Personal Information Form, Visual Analog Scale, Childbirth Comfort Scale, Birth and Postpartum follow up form, MacKey Childbirth Satisfaction Rating Scale	active phase of labor till full dilation ↓ by -132 min; delivery time ↓ by -55 min Pain at 9cm I.G < C.G
4	Lasconi et.al/2011 Journal of Midwifery & Women's	To evaluate the effectiveness of the use of birth ball on labor pain, contractions	RCT	Swiss ball exercises (n=30) Usual care (n=30)	30 minutes	The women were instructed to sit on the ball and rock their hips back and forth or	Visual Analog Scale, Duration of uterine contraction, Duration of Active phase	VAS I.G-↓ from 8.57 - 6.93.

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	Health	and duration of the active phase of physiologic labor				around in a circle for minimum of 30 minutes. During these movements women were sitting upright on the ball.		
5	Gallo et.al/ 2014/ Rev Dor. São Paulo,	This study aimed at evaluating the effect of the Swiss ball in the pain relief and active labor stage duration of primiparous women	RCT	Swiss ball exercise (n=20) Usual care (n=20)	30 minutes	The women in ball group were taught pelvic mobility exercises with the ball, active pelvic anteversion and retroversion exercises, lateralization and circumduction and propulsion. Control groups were given the choice of freedom of positions. Both the group carried out activities for 30 minutes with cervical dilation of 4-5 cm.	Numerical, Categorical Scale, Labor Duration, Fetal Descent, Dilation, Type of Delivery and APGAR Score	NCS in LG ↓ from 7.9 - 5.5. Labor duration, Dilation and FHD no difference. APGAR>7 in both the groups.
6	Farrag et.al/ 2018/ International Journal of Nursing Didactics	The study aims to studying the using of the birthing ball during the first stage labor and its effect on the progress of labor and outcome among nulliparous women	Quasi-experimental	120 Swiss ball exercise (n=60) Usual care group (n=60)	10-20 minutes every hour up to 10cm dilation	In this study the women were met during labor and were told about the benefits of using the birth ball during the first stage of labor and were shown 15 min videotape on how to use the Swiss ball in different positions. It included 3 positions with six exercises in the sitting positions, kneeling positions and	Labouring women basic data collection tool, Partograph to know labor progress, VAS, STAI, SVAS	VAS in LG ↓ to 5.9 than in C.G to 7.06; STAI in LG ↓ from 52.71 - 39.58, duration of 1 st stage labor ↓ to - 1.31 hr, 2 nd stage of labor ↓ - 4.33 min SVAS LG > C.G
						squatting positions. The women were asked to adapt these positions for 10-20 minutes every hour till the dilation of 10cm.		
7	Ulla / 2021/ Science Midwifery	It aims to evaluate the effects of using a birth ball on the reduction of pain during the first stage of active labor phase and duration of stage I and duration of stage II of labor	Experimental design with pre and post-test control group	26 LG-13 C.G-13	30 minutes	The birth ball was used in a sitting in relaxed positions and rocking on the ball and hugging the ball during contraction.	Face pain rating scale (FPRS) Partograph sheet	F=6 → 3 for mild pain in LG A pain in LG-C. G=1.54 post-test, duration of labor ↓ - 127.47
8	Taavoni et.al / 2016/ Complementary Therapies in Clinical Practices	To compare the effectiveness of the use of birth ball and sacral perineal heat therapy on labor pain and duration of the active phase of physiologic labor.	RCT	Birth ball-30 Heat therapy-30 C.G-30	30 minutes	The participants in heat therapy were given warm packs for 30 minutes in the sacral and perineal area. The participants in birth ball were asked to sit on the ball and rock their hips back and forth pr around in circle for 30 minutes. In routine care participants were kept in reclining position without ambulation.	Visual Analog Scale Duration of active phase of labor	VAS B.B ↓ from 8.57 - 6.93 the VAS H.T ↓ from 8.57 to 7.57. The duration of active phase of labor in B.B -1.78 hr, H.T- 1.95, C.G- 1.67 hr
9	Shen et.al. 2021 World Journal of Clinical Cases	The effect of birthing ball by promoting cervical ripening and its influence on the labor process and the	RCT	200 LG- birth ball with COOK balloon (100) C.G- COOK balloon (100)	30 minutes	The COOK balloon was used along with birth ball in which participants were asked to sit fixed on the	Bishop score, duration of labour, neonatal blood gas, mode of delivery.	Bishop score in LG ↓ from 3.71-7.84; duration of labor 1 st stage ↓ - 91.2

		neonatal blood gas index.				birth ball for 30 minutes and participants in conventional group were asked to be in lithotomy position and COOK balloon was placed. In both the condition the COOK balloon was removed when the mother felt strong contraction		min, 2 nd stage - 5.4; APGAR score I.G >C.G.
10	Mathew.et.al/ 2012/ Nitte University Journal of Health Science	To assess the effect of ambulation and birthing ball on the maternal and newborn outcome.	RCT	60 Ambulation Group (20) Birth ball group (20) C.G-20	-	The participants in intervention group were given ambulation and birth ball respectively with the cervical dilation of 1-3 cm and there was no intervention for the control group	1 st stage duration of labor, 2 nd stage duration of labor, cervical dilation, type of delivery and newborn outcomes.	Duration of labor 1 st stage 1-60min; 2 nd stage-1-8.8 min
11	Sonmez.et.al/ 2023/ Clinical and Experimental Health Sciences	The study aimed to determine the effectiveness of different birth balls used at the first stage of labor on fetal heart descent, pain intensity and maternal satisfaction.	RCT	180 Group A- Routine care. Group B- Birthing ball Group C- Peanut ball	30 minutes	Group B were given	Personal information form, Visual analog scale, Verbal rating scale, Partograph, The scales for measuring Maternal satisfaction in Birth (SMMSB)	VAS after intervention in B.B- 15.64 in P.B-15.11; VRS, B.B- 12.83 and P.B-12.85. SMMSB in C.G-145.6, in B.B- 171.20 and in P.B- 157.90.FH D in B.B >P.B
12	Gallo et.al. / 2018/ Journal of Physiotherapy	-	RCT	80 I.G-40 C.G-40	40 mins of each intervention	1 st intervention was Swiss ball exercises given at the beginning of active phase of labor(4-5cm) for 40 minutes. 2 nd intervention	The primary outcome was pain intensity which was measured by VAS. The secondary outcomes include duration of labor.	VAS I.G- 1-24 post exercise, - 14 post massage, - 17 post warm shower; duration of
						was lumbosacral massage at 5-6cm of dilation for 40 minutes at T10-S4 level. 3 rd intervention was warm shower of 37°C for 40 minutes when dilation for ≥7 cm.	expulsion time, stage of labor at which analgesia was used, stage of labor at which oxytocin was used, APGAR score.	labor 1-72 min, expulsion time 1-18 min; Apgar score I.G >C.G.

III. Result

The studies summarized in the table which highlights the benefits of Swiss ball or birthing ball during labor on various aspects.

Pain

Most studies reported a significant reduction in the labor pain for the participants using birth ball. In the study conducted by **Delgado.et.al.,2024** the experimental group reduced the pain intensity by 2.7 at 30 minutes, 2.1 at 60 minutes and 2.0 at 90 minutes. The mean score of pain before Swiss ball exercises in intervention group decreased to 6.93(p=0.001) at 30 minutes, 6.97 (p<0.001) at 60 minutes and 7.57 (p=0.001) at 90 minutes compared to control group in which the pain increased at the time intervals of 30 minutes,60 minutes and 90 minutes. (Taavoni et.al 2011). Gallo et.al **2014** used Numeric Categorical Scale for measuring pain which showed decrease of pain after intervention to 5.5 from 8.5 (p<0.001). In the study conducted by **Sonmez.et.al.,2023** used Verbal Rating Scale, the pain in the active phase in birth ball group was 2.83 and in peanut ball group was 2.85 (p=0.001), and during transition phase in birth ball group pain was 3.78 and in

peanut ball was 4.03 ($p=0.001$) which was lower compared to control group respectively. Ulfa, 2021 used face point rating scale for measurement of pain during labor, with the sample size of 13 in the intervention group the frequency of pain pretest for mild pain was noted as 7 which decreased post-test to 3, in addition this the mean result for the pain in comparison to intervention group and control group was reduced by 1.54(0.000) which is highly significant.

Duration of Labor

It was observed that Swiss ball exercises helped in reduction of duration of labor in 1st stage as well as in 2nd stage labor (Ramia Mutia Ulfa et.al 2021). The duration of labor was measured by the partograph which the device that is used to record labor progression including cervical dilation, fetal head descent and uterine contraction. In the study conducted by Aslantaş et.al.,2023 the mean difference between the intervention group and control group for the duration of the active phase of labor till full dilatation of cervix was decreased to 132 minutes ($p=0.001$; $p<0.001$) and the mean difference between the groups for the duration of dilatation till baby's head came out was decreased to 55 minutes ($p=0.001$) ;($p<0.001$) which was significantly shorter. In addition to the above study the study conducted by Farranget.al.2018 noted that, duration of first sage of labor decreased to 1.31 hour ($p=0.001$) and duration of second stage of labor decreased to 4.33 minutes ($p=0.001$). In the study, Gallo et.al.2018 mentioned that, post exercise the duration of labor decreased to 72 minutes and expulsion time decreased to 18 minutes. In the study, conducted by Taavoni.et.al.2011 which used Swiss ball for the duration of labor had no difference with ($p=0.863$) which was not significant. Shen.et.al, 2021 stated in the study which compared the intervention group with the participants using Swiss ball exercises along with application COOK balloon and the control group only contained the application of COOK balloon, the duration was labor for the 1st stage was lesser by 91,2 minutes and second stage by 5,4 minutes ($p<0.005$) in the intervention group but there was no significant decrease in the third stage of labor ($p>0.005$).In In these studies, the Swiss ball exercise given to the labor women help to decent fetal head faster which decreased the duration of labor. Gallo.et.al.,2014 conducted a study in Brazil which showed no significant difference between the Swiss ball group and the control group ($p=0.37$) and there was no significant difference in fetal head descend between the groups($p=0.36$).

Maternal Satisfaction

Swiss ball exercise not only decreased pain intensity during labor and duration of labor but it also improved maternal satisfaction in most of the intervention group. The studies indicated higher level of childbirth satisfaction among mothers. In Sonmez.et.al 2023 maternal satisfaction was significantly higher in the groups with Swiss ball exercise (171.20) compared to Peanut ball exercise (157.90) or standard care group (145.66) ($p=0.001$) which was measured using SMMSB (Scales for measuring Maternal Satisfaction in Birth). In the study **Farrang.et.al.,2018**, used Satisfaction Visual Analog Scale to measure the satisfaction the participants using Swiss ball were highly satisfied ($p=0.000$) compared to the control group.

Other maternal outcomes

In the study, conducted by Meei-Ling Gau.et.al 2011 among the women during the antenatal period stated that there was an improvement in the childbirth self-efficacy. In most of the studies there was an evident that Swiss ball exercise given to the labor women were associated with better outcomes which included lower anxiety level, enhanced mother comfort and decreased fatigue in the patient. It also promoted relaxation and reduced stress in the labor patient which help in better maternal satisfaction. (Gallo et.al 2014). In the mentioned study by Farrang.et.al.,2018, it is stated that the anxiety level measured using State Trait Anxiety Inventory (STAI) showed a significant decrease in the experimental group during the active phase 39.58 and transitional phase 37.14 compared to latent phase 52.7 ($p<0.005$). In addition to that the study conducted by Delgado, et.al 2024 showed that the anxiety level decreased by 9 in experimental group and maternal fatigue was reduced by 18. The risk of 1st and 2nd perineal tear and need for suture was better in experimental group but the risk for 3rd degree tear and 4th degree tear were similar in both the groups (Delgado, et.al 2024)

Neonatal Outcomes

In some studies, it stated that there were better neonatal outcomes which used Swiss ball along with COOK balloon in which there was improvement of neonatal blood gas index. (Hai-Chaun Shen.et.al.2021). Jha.et.al.,2023 stated that almost all the newborns in the experimental group had the APGAR score between 7-10 which is significantly more compared to control group ($p=0.004$) In many studies there were no difference in the APGAR score between experimental group and the control group.

IV. Discussion

This review highlights the valuable insights into the benefits of using a Swiss ball during labor and it also highlights the multiple dimensions of maternal and neonatal outcomes.

In the study there were significant reduction in the pain which was observed in participants using Swiss ball measured by various validated scales such as Visual Analog Scale (Delgado.et.al.,2024), Numeric Categorical Scale (Sonmez et.al 2023). (Gallo.et.al.,2024), Verbal Rating Scale.Delgado.et.al., (2024) reported a progressive reduction of pain 2.7,2.1,2.0 at intervals of 30 minutes,60minutes and 90 minutes respectively. Taavoni.et.al (2011) reported that the pain decreased from 7.80 to 6.93 in intervention group. It suggested that Swiss ball exercises can be a useful non-pharmacological method to alleviate labor pain and improve comfort during labor. The decrease in the pain in the participants using Swiss ball during labor is due to the freedom of movement which increases dimension of pelvis and the mobility of the pelvic and fetal position along with the distracting the attention of the pregnant women to the different direction of pain. However, the use of different types of scale highlights the need for standardization in future studies for better comparison of outcomes.

Swiss ball exercise helped in reduction of duration of labor in both the first and second stage labor because of improvement of fetal head descent which was monitored by partograph.Ulfa.et.al.,2021 observed shorter duration of active phase of labor and second stage of labor with the use of birth ball exercise.Farranget.al.2018 reported a reduction in duration of labor of 1.31 hours in 1st stage and 4.33 minutes in 2nd stage.Shen.et.al 2021 demonstrated a significant decrease in the first stage of labor by 91.2 minutes when the participants were given Swiss ball exercise along with COOK balloon. However, some studies such as Gallo.et.al.2014 did not indicate a significant decrease in the duration of labor. Due to faster progression of labor, there may be a reduction in the risk of complications associated with prolonged labor and improved delivery outcomes. These review helps in finding the support for the implications of Swiss ball during labor to reduce duration without any medical interventions.

Maternal satisfaction is higher in the participants using Swiss ball compared to the usual care due to the decrease in pain, improved comfort, and psychological support. Swiss ball helped the participants to alleviate discomfort as it increased the focus of the pregnant women towards the ball which helps in the reduction of stress and tension which increased the maternal satisfaction.Somez.et.al 2023 reported higher satisfaction level in the Swiss ball group compared to peanut ball and standard care group. Farrang et.al 2018 also reported higher satisfaction level which was measured using Satisfaction Visual Analog Scale.

The study reviewed the other benefits that include reduced anxiety, increased comfort, decreased fatigue and improve self- efficacy. The perineal outcomes were mixed but there were lower risks of tears in some cases but no reduction in severe tears, as a need for further investigations in future studies. Anxiety and fatigue level significantly decreased in the mother as mentioned in the studies by Delgado.et.al., 2024 and Farrang.et.al.2018 as during the protocol women were focused on themselves which helped them to connect to the body which can be the contributing factor for the reduction of anxiety and fatigue. Comfort level and relaxation were markedly improved, which promoted better labor experiences.

The study also reviewed the neonatal outcomes which were mixed as in some studies. Shen et.al.2021 reported improvement in neonatal blood gas in the intervention group.Jha.et. al. 2023 observed higher APGAR score (7-10) in the neonates of the intervention group, as the birth ball helps in the reduction of labor duration due to which there is lesser risk for complication for neonates. The Swiss ball exercise has the direct impact for the mother but the impact for the neonates remains unclear suggesting further investigation in future.

V. Conclusion

The review provides strong evidence supporting the use of Swiss ball exercises during labor is an effective non-pharmacological intervention for the reduction of pain, shortening of labor duration and improved maternal satisfaction and outcomes. These findings support the low risk and cost-effective intervention to enhance comfort and improve outcomes. These demonstrate the overall benefits of Swiss ball to enhance the overall labor experience and outcomes. However, differences in the findings highlights the need for standardized protocols and further research using same methodologies. In future, studies need to be conducted to know the long-term benefits of the Swiss ball for the maternal and neonatal outcomes

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