MIDWIFERY CARE FOR MRS. Y LABOR WITH PREMATURE RUPTURE OF MEMBRANES

Wa Ode Nur Avisa [1], Syastriani Isna Putri Syarif [2], Risnawati [3]*

[1,2,3] Politeknik Baubau, Baubau, Indonesia

ARTICLE INFORMATION

Received: 4 April 2025
Revised : 9 Mei 2025
Accepted: 25 Juni 2025
DOI:

KEYWORDS

Keywords: *Premature rupture of membranes, labor*

CORRESPONDING AUTHOR

Name : Syastriani Isna Putri Syarif
Address: Baubau
E-mail : syastriani@gmail.com

A B S T R A C T

Background: *The rupture of the mother's amniotic membrane before labor begins is commonly referred to as premature rupture of membranes (KPD). This can occur after the fetus has developed in the womb or before 37 weeks gestation.* ***Objective:*** *To provide midwifery care to the delivery mother Mrs.Y GVPIVA0 gestation 38 weeks 1 day with premature rupture of membranes (PROM) in the delivery room of Puskesmas Wajo.* ***Methods:*** *Case study with descriptive approach using 7 Varney steps and SOAP intervention method.* ***Subject:*** *The one taken in this case was Mrs. Y.* ***Result:*** *From this study, it was obtained in Mrs. Y that there were no problems found when dealing with cases of premature rupture of membranes (PROM). When dealing with cases of premature rupture of membranes in Mrs. Y, a 500 ml Ringer lactate infusion was given. In addition, an infusion of 5 IU of oxytocin was given as much as 20 drops to accelerate and strengthen contractions, and care was monitored from stage I to stage IV.* ***Conclusion:*** *The mother and fetus were found to be in good condition, as evidenced by TTV within normal limits, and the case study results, which were obtained using Varney's 7-step management and documentation in the form of SOAP from stage I to stage IV, were all normal and without any complications.*

INTRODUCTION

The rupture of the mother's amniotic sac before the labor process begins, this is commonly called Premature Rupture of Membranes (PROM). This incident can occur after the fetus has developed in the womb or before 37 weeks of pregnancy (Khairunnisa, 2023). The most common causes of premature rupture of membranes after delivery are infections acquired during delivery, infections acquired during the puerperium, prolonged labor, postpartum hemorrhage, higher rates of cesarean section, and higher rates of morbidity and mortality in women. The most common fetal problems include prematurity, hypoxia and asphyxia, fetal malformation syndromes, and increased rates of fetal morbidity and mortality (Rahayu and Sari, 2017).

Premature rupture of membranes and labor based on gestational age are related in RSIA Sitti Khadijah 1 Makassar, both for term and preterm labor. Under normal conditions, 8-10% of mothers who have a term pregnancy will experience premature rupture of membranes. Not all mothers who experience PROM in preterm pregnancy will experience premature labor, some even receive treatment at home before undergoing a term labor or normal labor. When a mother experiences PROM during pregnancy, she is more likely to give birth at a premature gestational age (less than 37 weeks) than at full term gestational age. This is because continuing pregnancy after rupture of membranes increases the possibility of infection in the amniotic fluid, which can even cause sepsis and increase morbidity and mortality for the mother and child (Di, Sitti and Makassar, 2024).

The estimated Maternal Mortality Rate (MMR) in Indonesia is 228/100,000 live births, while the projected Infant Mortality Rate (IMR) in Indonesia is 15/1,000 live births, based on data from the 2017 Indonesian Demographic and Health Survey (IDHS) report (Kemenkes RI, 2018). Complications from pregnancy, labor, and birth, including bleeding infections, amniotic fluid embolism, anesthesia trauma, and other conditions are the leading causes of maternal death. The majority of infections suffered by mothers are due to pregnancy-related problems, such as fever, infection of the placenta and amniotic fluid, and inflammation of the bladder. However, PROM accounts for 65% of the causes, which are so severe that they can infect both the mother and the unborn child (Kemenkes RI, 2019).

Since premature rupture of membranes is associated with complications of preterm birth, such as the development of sepsis and amniotic fluid infection, which increase morbidity and mortality in pregnant women and their unborn babies and consequently increase MMR and IMR, it is a serious problem that needs attention (Yulianti, Yuniarty and Putri, 2020).

Based on data available at the Wajo Health Center in 2023, there were 6 births of premature rupture of membranes (PROM) and in 2024 from January to March there were 2 births of premature rupture of membranes (PROM).

The author is interested in taking a case entitled Midwifery Care for Mrs. "Y" GVPIVA0 Gestational Age 38 Weeks 1 Day with Premature Rupture of Membranes (PROM) in the delivery room of the Wajo Health Center, Baubau City, based on the description that has been presented above.

METHODOLOGY

The case study method used in writing this final project report is a descriptive strategy using the SOAP intervention method and Varney's 7 phases. At its core, a case study is an in-depth investigation of one or more important events that occurred in the past.

Helen Varney stated that the management of midwifery care and midwifery care used in this study consisted of: evaluation in SOAP format, both subjective and objective, identification of actual problem diagnosis, identification of potential problems, identification of immediate needs, planning (intervention), implementation, and evaluation.

RESULTS AND DISCUSSION

Subjective Data

Mrs. Y GVPIVA0 29 years old visited Puskesmas Wajo, she reported that she had back pain in her abdomen accompanied by mucus and water seeping out of the birth canal at 01.00 WITA. She also said that her last menstrual period was on May 10, 2023 and her fifth pregnancy was ± 9 months old. The mother said that she had only one pregnancy check-up at the health center, had never experienced severe abdominal pain, had never received TT vaccination, and had experienced one of the 10 danger signs of pregnancy, namely premature rupture of membranes. Along with these additional details, the mother reported that the fetus was moving very strongly, especially on the right side of her abdomen, the lower abdominal pain had become stronger and had penetrated her back, she felt pressure on her anus, there was an urge to defecate, she felt a lot of blood coming out of the birth canal and abdominal pain.

Objective Data

Labor Interpretation Day was 17-02-2024, with composmentis consciousness, blood pressure 121/74 mmHg, pulse 80 times/minute, temperature 36.7 ^{o}C, and breathing frequency 20 times/minute, the mother's general condition was good. On physical examination, Mrs. Y's physical examination results were all within normal limits, but there was vaginal discharge from the genital area. TFU Leopold I 3 fingers below px (35 cm) was palpable round, soft, and not bouncy in the fundus (buttocks) area, there were no surgical scars, the abdomen looked large and the abdominal wall looked saggy, the results of abdominal examination also had linea nigra and striae livide abdominal circumference 98 cm, Leopold II Pu-Ka felt, hard, and wide like a board on the right side of the mother's abdomen, Leopold III The head is round, palpable, and does not move (indicating that the head has entered the upper door of the pelvis), Leopold IV BDP (Divergent), the two fingertips do not touch, indicating that the lowest part of the fetus has entered the PAP. Uterine contractions occurred 3 times in 10 minutes, with a duration of 35 seconds. DJJ (+) was heard clearly and regularly with a frequency of 144 x/min. Examination in VT 1 on February 01, 2024 at 08.00 WITA, the state of the vulva and vagina is good without any abnormalities, thick and soft portion, opening 2 cm, amniotic fluid (-) clear, head presentation, decreased H I, no molasses, no pounding, normal pelvic state, release of mucus, blood and amniotic fluid. VT 2 internal examination on February 01, 2024 at 12.00 WITA, the state of the vulva and vagina was no abnormality, the portio was thick and soft, the opening was 4 cm, the amniotic fluid (-) was clear, head presentation, decreased H II, no molasses, no pounding, normal pelvic impression, release of mucus, blood and amniotic fluid. Examination in VT 3 on February 01, 2024 at 2:30 pm, a repeat VT was performed with an indication of a strong urge to defecate, the results of the examination, the condition of the vulva and vagina was no abnormality, the portio was smooth, the opening was 10 cm, the amniotic fluid (-) was clear, the presentation of the head, the decline of H IV, molasses was absent, the impression of a normal pelvis, the release of mucus, blood and amniotic fluid. It appeared that the mother wanted to defecate, the perineum was protruding, the vulva vagina and spingter ani were open, internal examination on February 01, 2024 at 14.30 WITA, the condition of the vulva and vagina had no abnormalities, the portio was smooth, the opening was 10 cm, the amniotic fluid (-) was clear, head presentation, decreased H IV, no molasses,

no pounding, normal pelvic impression, discharge of mucus, blood and amniotic fluid. Uterine contractions were good, palpable hard and round, TFU 2 fingers below the center, there was a sudden and brief release of blood from the birth canal, the umbilical cord appeared to increase in length. Placenta and cotyledonous placental membranes were delivered complete at 2:50 pm, bleeding amount +100 cc, TFU 2 fingers below center, uterine contractions were good palpable hard and round. Vital signs were within normal limits blood pressure 120/80, pulse 80 x/min, temperature 36.4 ^{o}C, respiration 20 x/min and bladder empty.

Analysis

Mrs. Y GVPIVA0, gestational age 38 weeks 1 day, elongated site, right dorsal, cephalic presentation, intrauterine, single, alive, divergent, good maternal and fetal condition, latent phase of first stage of labor with premature rupture of membranes (PROM).

Management

Based on objective and subjective research data and predetermined analysis, the management given in this case requires collaborative action with doctors, namely the installation of 500 ml RL infusion drip oxytocin 5 IU (0.5 ml) 20 drops/minute. Every 30 minutes monitoring his and DJJ, encouraging the mother to lie on her left side, teaching relaxation techniques and breath regulation during contractions by inhaling through the nose and exhaling through the mouth, performing VT every 4 hours (2 hours if there are indications), providing information to patients about the benefits of water from banana stems.

DISCUSSION

Subjective Data

Mrs. Y GVPIVA0, 29 years old visited the Wajo Health Center, she reported that she experienced back pain in the thickness accompanied by mucus and water seeping out of the birth canal at 01.00 WITA, Rupture of the mother's amniotic membrane before the delivery process begins, this is commonly called Premature Rupture of Membranes (PROM). This incident can occur after the fetus develops in the womb or before 37 weeks of pregnancy (Khairunnisa, 2023). She also said that her last menstrual period was on May 10, 2023 and her fifth pregnancy was ± 9 months, using the Neagle formula, from the first menstrual period of 10-05-2023 to the date of assessment 01-02-2024, the gestational age was 38 weeks and 1 day (Hajriah Fajar, 2019). The mother said that she had only had one antenatal check-up at the health center, had never experienced severe abdominal pain, had never had a TT vaccination, and had experienced one of the 10 danger signs of pregnancy, namely premature rupture of membranes. Along with these additional details, the mother reported that the fetus was moving very strongly, especially on the right side of her abdomen, the lower abdominal pain had become stronger and had penetrated her back, she felt pressure on her anus, there was an urge to defecate, she felt a lot of blood coming out of the birth canal and abdominal pain.

Objective Data

Based on the results of the examination of vital signs that have been carried out on Mrs. Y including the mother's general condition is good, composmentis consciousness, blood pressure 121/74 mmHg, pulse 80 times/minute, temperature 36.7 ^{o}C, and breathing frequency 20 times/minute, the mother's general condition is good. On physical examination, Mrs. Y's physical examination results were all within normal limits, but there was vaginal discharge in the genital area. Biochemical changes in extracellular matrix collagen in the amnion, chorion, and fetal membrane apoptosis associated with rupture of the amniotic sac (Jannah, 2018). Palpation examination was also carried out and the results of the abdominal examination showed linea nigra. According to Sarwono 2016, the skin on the abdominal wall becomes dull and yellowish, sometimes, the thighs and breasts are also affected. Then this change can be referred to as striae gravidarum. Shiny silver lines that are abdominal tissue and precede the striae are often seen in addition to the reddish striae. The skin color of the abdomen changes to brownish gray (linea nigra) due to midline pigmentation (linea alba) (Suparyanto dan Rosad, 2020), TFU Leopold I examination results 3 fingers below px (35 cm) palpable round, soft, and not bouncy in the fundus area (buttocks), there are no surgical scars, the abdomen looks large and the abdominal wall looks saggy, the results of abdominal examination also have linea nigra and striae livide abdominal circumference 98 cm, Leopold II right back feels, hard, and wide like a board on the right side of the mother's abdomen, Leopold III The head is round, palpable, and does not move

(indicating that the head has entered the upper door of the pelvis), Leopold IV Moves Inside the Pelvis (Divergent), the two fingertips do not touch, indicating that the lowest part of the fetus has entered the PAP. Leopold palpation examination which is one of the examination techniques in pregnant women by way of touching, namely feeling the parts contained in the abdomen of pregnant women using the examiner's hand in a certain position, or moving these parts in a certain way using a certain level of pressure. This examination should be done after 24 weeks of gestation, when all parts of the fetus can be palpated. This examination technique mainly aims to determine the position and location of the fetus in the uterus, it can also be useful for confirming the mother's gestational age and estimating the weight of the fetus (Ratmawati, Riwayati and Utaringsih, 2019), Palpable ballottement indicates an intrauterine fetus. The examination results of uterine contractions lasted 3 times in 10 minutes, with a duration of 35 seconds. During labor, myometrial activity increases and its contractility pattern changes, causing the uterine cervix to dilate and thin, and the fetal head to descend. This process is known as uterine contraction force (Gina Fitria Auliani and Sasnitiari, 2023). DJJ (+) is heard clearly and regularly with a frequency of 144 x/min, DJJ examination is used as a reference to assess maternal health and fetal development, especially in the womb. The average fetal heart rate frequency ranges from 120 to 160 x/min (Minarti and Risnawati, 2020). VT 1 internal examination on February 01, 2024 at 08.00 WITA, the state of the vulva and vagina is good, no abnormalities, thick and soft portions, opening 2 cm, amniotic fluid (-) clear, head presentation, decreased H I, no molasses, no pounding, normal pelvic state, release of mucus, blood and amniotic fluid. VT 2 internal examination on February 01, 2024 at 12.00 WITA, the state of the vulva and vagina is no abnormality, the portio is thick and soft, the opening is 4 cm, the amniotic fluid (-) is clear, the presentation of the head, the decline of H II, molasses is absent, the impaction is absent, the pelvic impression is normal, the release of mucus, blood and amniotic fluid. Examination in VT 3 on February 01, 2024 at 2:30 p.m. VT was repeated with an indication of a strong urge to defecate, the results of the examination, the condition of the vulva and vagina had no abnormalities, the portio was smooth, the opening was 10 cm, the amniotic fluid (-) was clear, the presentation of the head, the decline of H IV, molasses was absent, the impression of a normal pelvis, the release of mucus, blood and amniotic fluid. The mother appeared to want to defecate, the perineum protruded, the vulva vagina and spingter ani opened, internal examination on February 01, 2024 at 14.30 WITA, the condition of the vulva and vagina was no abnormality, the portio had disappeared, the opening was 10 cm, the amniotic fluid (-) was clear, head presentation, decreased H IV, molasses was absent, penumbral was absent, normal pelvic impression, release of mucus, blood and amniotic fluid. Uterine contractions were good, palpable hard and round, TFU 2 fingers below the center, there was a sudden and brief release of blood from the birth canal, the umbilical cord appeared to increase in length. Placenta and cotyledonous placental membranes were delivered complete at 2:50 pm, total bleeding +100 cc, TFU 2 fingers below center, uterine contractions were good, palpable hard and round. Vital signs were within normal limits, blood pressure 120/80, pulse 80 x/min, temperature 36.4 ^{o}C, respiration 20 x/min and bladder empty.

Analysis

Analysis in this case is carried out based on the results of subjective and objective research, namely this is the 5th pregnancy for the mother and has never been miscarried (GVPIVA0), First Menstruation Last Day 05-10-2023, gestational age 38 weeks 1 day , elongated site, right back, head presentation, intra uterine, single, alive, divergent, the condition of the mother and fetus is good, in 1st stage latent phase with premature rupture of membranes (PROM).

Management

Based on objective and subjective research data and analysis that has been determined, the management given in this case requires collaborative action with a doctor, namely the installation of an RL infusion of 500 ml of oxytocin drip 5 IU (0.5 ml) 20 drops/minute.

Advise the mother to lie on her left side. The mother tries to find the most comfortable body position for her by doing several things, such as sitting, squatting, sleeping on her side, and lying on her left side (Kusumawati *et al.*, 2023). Teach mom relaxation and breath control techniques during contractions by inhaling through the nose and exhaling through the mouth. If your mother feels uncomfortable when this occurs, instruct her on how to relax by breathing in deeply through the nose and out through the mouth (Kusumawati *et al.*, 2023).

Monitor the patient's vital signs every 4 hours (except pulse every 30 seconds), observe hiss and DJJ every 30 minutes, perform VT every 4 hours (2 hours if indicated), provide intake and

nutrition when hiss decreases, Physiological processes such as labor require endurance and energy. Prolonged and continuous exercise, such as labor, can cause physiological stress and fatigue, which can disrupt glucose homeostasis and alter energy requirements. Providing comfort, food, water, and emotional control can help lower labor stress levels (Saleh, Namangdjabar and Saleh, 2022). Providing support and motivation to mothers, midwives play an important role in helping anxious pregnant and birthing women by offering counseling and supporting them during labor so that they can give birth in a comfortable and healthy way and without experiencing too much pain. As health professionals, midwives play an important role in providing bio-psycho-social, spiritual, and midwifery care (Umairo and Anggraini, 2023). Provide information to patients about the benefits of drinking water from banana stem plants, also known as gedebong pisang, as an alternative traditional medicine during the postpartum period because it is believed to help accelerate the process of uterine involution and reduce the possibility of bleeding (Syarif and Samrida, 2021).

CONCLUSION

Based on the results of a case study of intranatal care midwifery management for mothers giving birth with PROM, the author draws the following conclusions:

From the results of the history obtained subjective data patient Mrs. Y GVPIVA0 aged 29 years visited the Wajo Health Center, she reported that she experienced back pain in her abdomen accompanied by mucus and water seeping out of the birth canal at 01.00 WITA. She also said that her last menstrual period was on May 10, 2023 and her fifth pregnancy was ± 9 months old. The mother said that she had only one pregnancy check-up at the health center, had never experienced severe abdominal pain, had never received TT vaccination, and had experienced one of the 10 danger signs of pregnancy, namely premature rupture of membranes. Along with these additional details, the mother reported that the fetus was moving very strongly, especially on the right side of her abdomen, the lower abdominal pain had become stronger and had penetrated her back, she felt pressure on her anus, there was an urge to defecate, she felt a lot of blood coming out of the birth canal and abdominal pain.

Objective data taken based on the results of the examination carried out is known with composmentis consciousness, blood pressure 121/74 mmHg, pulse 80 times/minute, temperature 36.7 ^{o}C, and breathing frequency 20 times/minute, the mother's general condition is good. On physical examination, Mrs. Y physical examination results were all within normal limits, but there was vaginal discharge from the genital area. TFU Leopold I 3 fingers below px (35 cm) was palpable round, soft, and not bouncy in the fundus (buttocks) area, there were no surgical scars, the abdomen looked large and the abdominal wall looked saggy, the results of abdominal examination also had linea nigra and striae livide abdominal circumference 98 cm, Leopold II right back felt, hard, and wide like a board on the right side of the mother's abdomen, Leopold III The head is round, palpable, and does not move (indicating that the head has entered the upper door of the pelvis), Leopold IV Moves Within the Pelvis (Divergent), the two fingertips do not touch, indicating that the lowest part of the fetus has entered the Pelvic upper door.

The management is to collaborate with the doctor, namely the installation of an RL infusion of 500 ml drip oxytocin 5 IU (0.5 ml) 20 drops/minute. Every 30 minutes monitoring of hiss and DJJ, encouraging the mother to lie on her left side, teaching relaxation techniques and breath regulation during contractions by inhaling through the nose and exhaling through the mouth, performing VT every 4 hours (2 hours if there is an indication), providing information to patients about the benefits of water from banana stems.

In order for each delivery to proceed smoothly and without problems, the practice and other health personnel should counsel on the physiological and psychological changes during labor as well as the mechanics of labor and initiate activities to illustrate proper defecation during labor. It is expected that midwifery institutions will always keep up with the latest developments in the field and change their curriculum to improve the professional performance of their students after they graduate and enter the workforce. To become a professional midwife in the future, midwifery students must be able to apply theory seriously when providing care on the practice field in accordance with midwifery service standards.

ACKNOWLEDGMENT

I would like to thank Mrs. Bdn. Syastriani Isna Putri Syarif S.ST., M.Keb as the first supervisor, Mrs. Bdn. Risnawati S.ST., M.Kes as supervisor II and Mr. Asriadi, S.KM., M.Kes as my examiner, who has guided me to complete this Final Project Report as well as possible. I would also

like to thank Mrs. Y as my patient who has been willing to be recorded and whose problem I raised in the case of the final project report, as well as a special thank you to my parents father (La Ode Ydi Fazzir) and my mother (Ati) for their prayers and support all this time.

REFERENCES

Di, K., Sitti, R. and Makassar, K. (2024) 'HUBUNGAN KPD DENGAN PERSALINAN BERDASARKAN USIA', 8(April), pp. 279–289.

Gina Fitria Auliani and Sasnitiari, N.N. (2023) 'Ketuban Pecah Dini Dengan Perdarahan : Sebuah Laporan Kasus Persalinan', *The Journal of the Kansas Medical Society*, 4, pp. 689–693.

Hajriah Fajar, S. (2019) 'Kehamilan Berbasis Android Menggunakan Metode', *Jurnal Ilmu Pengetahuan dan teknologi Komputer*, 4(2), pp. 231–238.

Jannah (2018) *Buku Ajar Asuhan kebidanan-kehamilan*.

Kemenkes RI (2018) 'Profil Kesehatan Tahun 2017', *Kementerian Kesehatan RI.*

Kemenkes RI (2019) 'Profil Kesehatan Indonesia', *Kementerian Kesehatan RI.*

Khairunnisa, S.S. (2023) 'HUBUNGAN LAMA KETUBAN PECAH DINI DENGAN APGAR SCORE BAYI BARU LAHIR PADA PERSALINAN SECTIO CAESAREA Studi Observasional Analitik di Rumah Sakit Bhakti Wira Tamtama', pp. 1–14. Available at: https://www.ncbi.nlm.nih.gov/books/NBK558907/.

Kusumawati *et al.* (2023) 'Laporan Kasus: Asuhan Kebidanan Komprehensif Pada Ny . L Dengan Ketuban Pecah Dini Dan By . Ny . L Di Praktik Mandiri Bidan Nurhasanah Kota Pontianak.'

Minarti, M. and Risnawati, R. (2020) 'Posisi Ibu Hamil Memengaruhi Akurasi Pengukuran Kesejahteraan Janin', *Jurnal Bidan Cerdas*, 2(3), pp. 170–176. Available at: https://doi.org/10.33860/jbc.v2i3.93.

Rahayu, B. and Sari, A.N. (2017) 'Studi Deskriptif Penyebab Kejadian Ketuban Pecah Dini (KPD) pada Ibu Bersalin', *Jurnal Ners dan Kebidanan Indonesia*, 5(2), p. 134. Available at: https://doi.org/10.21927/jnki.2017.5(2).134-138.

Ratmawati, A.L., Riwayati, C. and Utaringsih, R. (2019) 'Pemeriksaan Kehamilan di Politeknik Banjar Negara', *Jurnal Pengabdian Kesehatan*, 2(1), pp. 26–27.

Saleh, U.K.S., Namangdjabar, O.L. and Saleh, A.S. (2022) 'Kajian pola pemenuhan nutrisi dan hidrasi ibu bersalin selama proses persalinan', *Journal Scientific of Mandalika*, 3(3), pp. 230–234.

Suparyanto dan Rosad (2020) 'Pemberian Olive Oil untuk mencegah Striae Gravidarum pada perut ibu hamil trimester II', *Suparyanto dan Rosad*, 5(3), pp. 248–253.

Syarif, S.I.P. and Samrida, W.O.N.J. (2021) 'Ethnobotany of Banana Stock on The Normality of Uterial Involution in Lapandewa Village, South Buton Regency', *Jurnal Aisyah : Jurnal Ilmu Kesehatan*, 6(4), pp. 687–692. Available at: https://doi.org/10.30604/jika.v6i4.690.

Umairo, G. and Anggraini, Y. (2023) 'Hubungan Dukungan Bidan dan Keluarga dengan Kecemasan Ibu Hamil Trimester Ke III dalam Menghadapi Persalinan di Klinik Uswah Medika Tunjung Teja', *Malahayati Nursing Journal*, 5(10), pp. 3588–3593. Available at: https://doi.org/10.33024/mnj.v5i10.9465.

Yulianti, W., Yuniarty, Y. and Putri, D.K. (2020) 'Laporan Kasus : Asuhan Kebidanan Patologis Dengan Ketuban Pecah Dini Pada Ny.D Case Report : Pathological Obstetrics Care With Premature Rupture of Membranes in Ny . D', pp. 1–9.