

ARTICLE INFORMATION

Received: November, 13, 2025

Revised: January, 26, 2026

Available online: January, 27, 2026

at : <https://e-jurnal.iphorr.com/index.php/minh>

Knowledge of early detection of peripartum cardiomyopathy and postpartum help-seeking practices

Suryani Manurung*, Dinny Atin Amanah, Emy Rianti, Uity Desmarnita

Departemen Keperawatan, Politeknik Kesehatan Kementerian Kesehatan Jakarta I

Corresponding author: *E-mail: suryanimanurung19@gmail.com

Abstract

Background: Peripartum Cardiomyopathy (PPCM) is a life-threatening form of heart failure that can occur during the late stages of pregnancy or in the postpartum period. Limited knowledge among postpartum mothers regarding early detection of PPCM may contribute to delays in seeking appropriate medical care, thereby increasing the risk of severe complications.

Purpose: To determine mothers' knowledge of early detection of peripartum cardiomyopathy and postpartum help-seeking practices.

Method: A quantitative analytical design with a cross-sectional approach. The population consisted of postpartum mothers within 0–6 months after delivery. A total of 236 respondents were selected using purposive sampling. Data were collected using structured questionnaires measuring knowledge of early detection of PPCM and medical care-seeking behavior. Data analysis included univariate analysis and bivariate analysis using the chi-square test.

Results: The majority of respondents were within the healthy reproductive age range, with a mean age of 28.44 years, and most did not experience symptoms related to PPCM during pregnancy or after childbirth. Most respondents demonstrated a good level of knowledge regarding early detection of PPCM. The chi-square test showed no statistically significant association between postpartum mothers' knowledge of early detection of PPCM and their medical care-seeking behavior ($p = 0.704$).

Conclusion: Knowledge of early detection of Peripartum Cardiomyopathy among postpartum mothers has not yet been reflected in their medical care-seeking behavior. Other factors, including risk perception, family support, accessibility of health services, and cultural influences, may play a more substantial role. Strengthening continuous health education, family-centered interventions, and community-based early detection programs is recommended to prevent PPCM-related complications.

Keywords: Early Detection Knowledge; Medical Help-Seeking Behavior; Peripartum Cardiomyopathy; Postpartum Mothers.

INTRODUCTION

Peripartum cardiomyopathy (*Peripartum Cardiomyopathy* / PPCM) is a rare but life-threatening form of heart failure with reduced ejection fraction that typically emerges during the final weeks of pregnancy or within the first few months after childbirth (Arany, 2024). Clinically, PPCM poses a significant diagnostic challenge because its cardinal manifestations such as fatigue,

dyspnea, and peripheral edema—closely resemble the physiological changes commonly experienced in late pregnancy and the postpartum period. As a result, symptoms that should raise clinical concern are often underestimated or normalized, leading to delayed diagnosis and suboptimal management (Arany & Elkayam, 2016). This delay is particularly dangerous given that early identification and timely

intervention are critical determinants of disease progression, recovery of myocardial function, and long-term maternal outcomes (Setyawati Astuti, Utami, Adiwijaya, & Hasyim, 2024).

Early detection of PPCM relies not only on clinical vigilance but also on maternal awareness of warning signs that differentiate normal postpartum discomfort from pathological cardiovascular distress. Symptoms such as *orthopnea* and *paroxysmal nocturnal dyspnea* are considered important clinical "red flags" that warrant immediate medical evaluation, yet they are frequently unrecognized by postpartum women (Davis, Arany, McNamara, Goland, & Elkayam, 2020). Without adequate knowledge, mothers may delay seeking medical attention, thereby missing the window for early therapeutic intervention. Consequently, strengthening maternal understanding of PPCM is an essential component in promoting timely help-seeking practices and preventing severe complications, including irreversible cardiac dysfunction and maternal mortality.

Maternal mortality during the peripartum period remains a major public health concern at both national and international levels. Historically, peripartum maternal deaths have predominantly been attributed to obstetric complications or comorbid conditions arising during pregnancy, such as preeclampsia-eclampsia, gestational hypertension, infection, antepartum hemorrhage, and postpartum hemorrhage. However, recent epidemiological trends indicate a shift toward non-obstetric causes, particularly idiopathic heart failure developing during the puerperium, with PPCM emerging as a significant contributor (Azibani & Sliwa, 2018). Increased global awareness of PPCM over the past decades has encouraged more systematic investigations, both internationally and within Indonesia, yet the condition remains underdiagnosed and underreported (Azibani & Sliwa, 2018; Prameswari, Purnomowati, & Aprami, 2015).

Peripartum cardiomyopathy is classified as a form of dilated cardiomyopathy characterized by left ventricular systolic dysfunction occurring in the absence of other identifiable causes of heart failure. The condition may develop during late pregnancy or up to several months postpartum and carries a substantial risk of morbidity and mortality if not promptly recognized and treated (Azibani & Sliwa,

2018). Epidemiological data demonstrate marked geographical variation in incidence, with particularly high rates reported in regions such as Haiti, Nigeria, and South Africa (Sliwa, Ojji, Bachelier, Böhm, Damasceno, & Stewart, 2014). In recent years, the global incidence of PPCM has been estimated at approximately 1 case per 300 live births, while in the United States the incidence ranges from 1 per 3,000 to 4,000 live births. Mortality rates also vary considerably, with international estimates reporting a PPCM-related maternal mortality ratio of 47.1 per 100,000 births, compared to 0.62 per 100,000 births in the United States. The reported mortality rate reaches 15.3%, corresponding to 15 deaths among 98 patients (Fett, Christie, Carraway, & Murphy, 2005).

In Indonesia, comprehensive data on the prevalence of PPCM remain limited. Nevertheless, hospital-based studies and case reports suggest a growing burden of cardiovascular complications during pregnancy and the postpartum period. A study conducted at Hasan Sadikin Hospital in 2013 reported that 80 out of 305 patients (26.23%) experienced cardiovascular complications during pregnancy and up to six months postpartum. The highest proportion of PPCM cases was observed among women without hypertension (28–35%) and those with preeclampsia (35%) (Prameswari et al., 2015). These findings highlight PPCM as a clinically significant yet insufficiently recognized condition within maternal healthcare services.

One factor consistently suspected to contribute to delayed diagnosis of PPCM is the limited knowledge of pregnant and postpartum women regarding this condition. Symptoms such as shortness of breath, lower-extremity edema, and extreme fatigue are frequently misinterpreted as normal physiological responses to pregnancy or postpartum recovery. This misinterpretation may discourage mothers from seeking timely medical care, allowing the disease to progress unnoticed until severe heart failure develops. In urban areas with high pregnancy density, including Indonesia, this issue is increasingly concerning as healthcare systems face growing demands.

This study was conducted in response to the rising number of PPCM cases reported in Indonesia, particularly among postpartum mothers who develop heart failure days or weeks after delivery. Many

Suryani Manurung*, Dinny Atin Amanah, Emy Rianti, Ulty Desmarnita

Departemen Keperawatan, Politeknik Kesehatan Kementerian Kesehatan Jakarta I
Corresponding author: *E-mail: suryanimanurung19@gmail.com

DOI: <https://doi.org/10.33024/minh.v8i11.1832>

mothers remain uncertain whether cardiac symptoms experienced after childbirth represent residual pregnancy-related changes or an evolving pathological condition requiring immediate intervention. Such uncertainty underscores the importance of assessing maternal knowledge related to early detection of PPCM and understanding how this knowledge translates into medical care-seeking behavior.

The novelty of this study lies in its focus on postpartum mothers' knowledge of early detection of PPCM and their behavior in seeking medical care for PPCM-related symptoms. To date, limited research has examined this relationship, and PPCM itself remains a relatively underexplored topic within maternal health research. This gap in the literature provides a strong rationale for investigating the phenomenon, particularly in the context of primary healthcare services.

Community health centers (*Pusat Kesehatan Masyarakat / Puskesmas*), as frontline healthcare facilities, play a pivotal role in providing maternal health education during the peripartum period. Despite this strategic position, educational efforts related to non-communicable diseases such as PPCM are often insufficient and lack systematic evaluation. Therefore, it is essential to assess postpartum mothers' level of knowledge regarding PPCM and to examine how this knowledge relates to their medical care-seeking behavior in response to perceived risks or symptoms. Accordingly, this study aimed to analyze the relationship between knowledge of early detection of peripartum cardiomyopathy (PPCM) and medical care-seeking behavior among postpartum mothers in the *Puskesmas* service area.

RESEARCH METHOD

This quantitative analytical study used a *cross-sectional* design to examine the relationship between postpartum mothers' knowledge of early detection of *Peripartum Cardiomyopathy* (PPCM) and their medical care-seeking behavior. The study was conducted at a community health center (*Pusat Kesehatan Masyarakat / Puskesmas*) in South Jakarta from July to September 2025. The study population consisted of postpartum mothers within

0–6 months after delivery who visited the *Puskesmas* during the study period. A purposive sampling technique was applied, resulting in a total of 236 respondents. Inclusion criteria were mothers aged 18–45 years, within six months postpartum, who had delivered in a healthcare facility, were able to read and write, and consented to participate. Mothers with a history of heart disease or hypertension prior to pregnancy were excluded.

Data were collected using a structured questionnaire after obtaining informed consent. The instrument included demographic characteristics, a maternal knowledge questionnaire regarding early detection of PPCM, and a medical care-seeking behavior questionnaire. The knowledge questionnaire consisted of scored 1 for correct and 0 for incorrect and categorized into poor and good knowledge based on the mean score (29.82). The medical care-seeking behavior questionnaire comprised 10 items measured on a five-point Likert scale (score range 10–50) and categorized into poor and good behavior using the mean cutoff value (12.68). Validity and reliability testing were conducted on 30 postpartum mothers outside the main sample. All items demonstrated acceptable validity using the *Pearson Product Moment* correlation ($r > 0.3494$). Reliability testing yielded *Cronbach's Alpha* coefficients of 0.712 for the knowledge questionnaire and 0.723 for the medical care-seeking behavior questionnaire.

Data processing included editing, coding, entry, and tabulation, and statistical analysis was performed using the *Statistical Package for the Social Sciences* (SPSS) version 26.0. Univariate analysis was used to describe respondent characteristics, while bivariate analysis using the chi-square test examined the association between knowledge of early detection of PPCM and medical care-seeking behavior. A p-value of <0.05 was considered statistically significant (Gordis, 2013; Browner, Newman, Cummings, Grady, Huang, Kanaya, & Pletcher, 2022). This research has received an ethical statement or "Ethical Exemption" and has received approval from the Health Research Ethics Committee of the Jakarta I Ministry of Health Polytechnic on June 20, 2025 with the number: 017/KEPK-PKJI/VI/2025.

Suryani Manurung*, Dinny Atin Amanah, Emy Rianti, Ulty Desmarnita

Departemen Keperawatan, Politeknik Kesehatan Kementerian Kesehatan Jakarta I
Corresponding author: *E-mail: suryanimanurung19@gmail.com

DOI: <https://doi.org/10.33024/minh.v8i11.1832>

RESEARCH RESULTS

Table Characteristics of Respondents (N = 236)

Variables	Results	p-value
Age (Mean ± SD)(Range)(Years)	28.44 ± 5.17 (17–44)	
Postpartum Days (Mean ± SD)(Range)(Days)	74.78 ± 62.79 (0–180)	
Parity (n/%)		
Primiparous	108/45.8	
Multiparous	128/54.2	
PPCM Symptoms During Pregnancy (n/%)		
Shortness of breath when lying down		
Yes	53/22.5	
No	183/77.5	
Shortness of breath during activity		
Yes	53/22.5	
No	183/77.5	
Cough		
Yes	11/4.7	
No	225/95.3	
Swelling of the legs		
Yes	67/28.4	
No	169/71.6	
Irregular heartbeat		
Yes	14/5.9	
No	222/94.1	
PPCM Symptoms After Childbirth (n/%)		
Shortness of breath when lying down		
Yes	9/3.8	
No	227/96.2	
Shortness of breath during activity		
Yes	12/5.1	
No	224/94.9	
Cough		
Yes	6/2.5	
No	230/97.5	
Swelling of the legs		
Yes	15/6.4	
No	221/93.6	
Irregular heartbeat		
Yes	5/2.1	
No	231/97.9	
Knowledge of Early Detection of PPCM (n/%)		
Good	145/61.4	
Poor	91/38.6	
Medical Help-Seeking Behavior (n/%)		0.074
Good	126/53.4	
Poor	110/46.6	

Suryani Manurung*, Dinny Atin Amanah, Emy Rianti, Uity Desmarnita

Departemen Keperawatan, Politeknik Kesehatan Kementerian Kesehatan Jakarta 1

Corresponding author: *E-mail: suryanimanurung19@gmail.com

DOI: <https://doi.org/10.33024/minh.v8i11.1832>

The table above highlights the characteristics of the respondents in this study. The mean age of postpartum mothers was 28.44 ± 5.17 years, with an age range of 17-44 years, while the average postpartum period was 74.78 ± 62.79 days (range 0–180 days). Slightly more than half of the respondents were multiparous (128/54.2%), and the remainder were primiparous (108/45.8%). During pregnancy, most respondents did not report symptoms associated with *Peripartum Cardiomyopathy* (PPCM), including shortness of breath when lying down or during activity (183/77.5%), cough (225/95.3%), swelling of the legs (169/71.6%), and irregular heartbeat (222/94.1%). A similar pattern was observed in the postpartum period, where the majority of mothers reported no PPCM-related symptoms, such as shortness of breath when lying down (227/96.2%), shortness of breath during activity (224/94.9%), cough (230/97.5%), swelling of the legs (221/93.6%), and irregular heartbeat (231/97.9%).

Postpartum mothers' knowledge about early detection of *Peripartum Cardiomyopathy* (PPCM) was categorized as good as 145/61.4% and bad as 91/38.6%, while medical help-seeking behavior was categorized as good as 126/53.4% and bad as 110/46.6%. The chi-square analysis indicated no statistically significant association between knowledge of early detection of PPCM and medical help-seeking behavior ($p = 0.704$).

DISCUSSION

Postpartum mothers included in this study generally demonstrated maternal characteristics and clinical profiles associated with a relatively low risk of *Peripartum Cardiomyopathy* (PPCM). Although multiparous women constituted a slightly larger proportion of respondents, a considerable number were primiparous, reflecting patterns commonly reported in maternal health surveys conducted in populations with stable fertility rates (Prameswari, Dewi, Hasan, Martanto, Astuti, Saboe, & Cool, 2024). Parity has been proposed as a factor influencing cardiovascular adaptation during pregnancy and the postpartum period; however, existing evidence remains inconclusive, and its direct contribution to PPCM development requires further clarification (Sigauke, Ntsinjana, & Tsabedze, 2024). In this population, parity did not appear to play a

dominant role in shaping PPCM-related symptom presentation.

A notable proportion of respondents reported no symptoms suggestive of PPCM during pregnancy or after childbirth. Symptoms commonly associated with PPCM such as dyspnea at rest or during activity, cough, lower extremity edema, and palpitations were reported by only a minority of mothers, with an even lower frequency observed in the postpartum period. This pattern may reflect generally favorable maternal health conditions, including adequate nutritional status, regular antenatal care attendance, and early identification of pregnancy-related complications (Al Riyami, Al Khayari, Al Zadjali, Machado, Al Madhani, & Al Lawati, 2023; Prameswari et al., 2015). The absence of major clinical risk factors, such as hypertensive disorders of pregnancy or viral infections associated with myocardial injury, may further explain the limited manifestation of PPCM-related symptoms in this group (Sigauke et al., 2024).

The interpretation of low symptom prevalence requires careful consideration, given that PPCM symptoms often resemble physiological changes experienced during pregnancy and the postpartum period. Complaints such as mild dyspnea or peripheral edema are frequently perceived as normal maternal experiences, leading to underrecognition by both mothers and healthcare providers. Bauersachs et al. (2019) emphasize that this clinical overlap contributes substantially to delayed diagnosis and missed opportunities for early intervention. Continuous cardiovascular assessment and symptom surveillance therefore remain essential, particularly for mothers with identifiable risk factors, even when symptoms appear mild or nonspecific.

The age profile of respondents further supports the observed clinical pattern. With a mean age of 28.44 years, most mothers fell within the optimal reproductive age range, which is widely recognized as having a lower risk of obstetric and cardiovascular complications (Hoes, Arany, Bauersachs, Hilfiker-Kleiner, Petrie, Sliwa, & van der Meer, 2022). Previous studies have reported a higher incidence of PPCM among women aged 30–35 years and older, where age-related cardiovascular stress may predispose individuals to myocardial dysfunction (Al Riyami et al., 2023; Iorgoveanu, Zaghloul, & Ashwath, 2021). The relatively younger age

Suryani Manurung*, Dinny Atin Amanah, Emy Rianti, Ulty Desmarnita

Departemen Keperawatan, Politeknik Kesehatan Kementerian Kesehatan Jakarta I
Corresponding author: *E-mail: suryanimanurung19@gmail.com

DOI: <https://doi.org/10.33024/minh.v8i11.1832>

distribution in this study may therefore contribute to the limited occurrence of PPCM symptoms.

The postpartum duration among respondents, averaging approximately 75 days, places most mothers within the late postpartum phase, during which cardiovascular and hemodynamic changes associated with pregnancy tend to stabilize. Although PPCM can develop up to five months after delivery, this later postpartum period is often marked by gradual physiological recovery in healthy women (Davis, Arany, McNamara, Goland, & Elkayam, 2020; Sitio, Tjahjono, Martini, & Kurnianingsih, 2021). Continued vigilance remains necessary, particularly for mothers with multiparity, a history of hypertensive disorders, or underlying cardiovascular vulnerability.

The absence of a statistically significant association between early detection knowledge and help-seeking behavior highlights the complexity of maternal health decision-making. Knowledge alone may not be sufficient to trigger appropriate medical action. The *Health Belief Model* (HBM) explains this phenomenon by emphasizing the role of perceived susceptibility and perceived severity in shaping health-related behavior (Alyafei & Easton-Carr, 2024). When PPCM symptoms are perceived as normal postpartum discomfort, mothers may underestimate their personal risk and delay seeking professional care.

This challenge is compounded by psychological and contextual factors. That symptom normalization during the peripartum period is a major barrier to timely PPCM recognition (Farrell, Kuller, Goldstein, & Dotters-Katz, 2021). A related study suggests that argue that improved outcomes depend on multidisciplinary strategies that strengthen patient education and enhance recognition of cardiovascular *red flag* symptoms (Carlson, Schultz, Ramu, & Davis, 2023). Psychological conditions, including postpartum depressive symptoms, may further impair self-care capacity and reduce responsiveness to health education messages (Hwang, Pelter, Moser, & Dracup, 2020). Within the Indonesian context, these individual-level factors intersect with socio-cultural norms that encourage maternal resilience and prioritize family needs over personal health, potentially limiting proactive help-seeking behavior (Harahap, Adi, Sriatmi, & Purnami, 2024).

The discussion underscores the need for integrated interventions that move beyond knowledge dissemination. Effective prevention and early detection of PPCM require approaches that combine clear cardiovascular education, routine symptom screening, mental health support, and culturally sensitive counseling. Such strategies are critical to ensuring timely medical care and reducing the risk of severe cardiac complications during the peripartum period.

CONCLUSION

Knowledge of early detection of *Peripartum Cardiomyopathy* (PPCM) among postpartum mothers was not reflected in their medical care-seeking behavior. This finding suggests that factors such as risk perception, family support, access to health services, and cultural influences may play a more dominant role in shaping maternal health decisions. Strengthening continuous health education, family-centered interventions, and community-based early detection programs is therefore essential to reduce PPCM-related complications.

REFERENCES

- Al Riyami, N., Al Khayari, S., Al Zadjali, R., Machado, L., Al Madhani, A., & Al Lawati, H. (2023). Incidence, risk factors, maternal and neonatal outcomes of peripartum cardiomyopathy (PPCM) in Oman. *Global Heart*, 18(1), 23.
- Arany, Z. (2024). Peripartum cardiomyopathy. *New England Journal of Medicine*, 390(2), 154-164.
- Alyafei, A., & Easton-Carr, R. (2024). The health belief model of behavior change. *StatPearls*.
- Azibani, F., & Sliwa, K. (2018). Peripartum cardiomyopathy: an update. *Current heart failure reports*, 15(5), 297-306.
- Bauersachs, J., König, T., van der Meer, P., Petrie, M. C., Hilfiker-Kleiner, D., Mbakwem, A., Hamdan, R., Jackson, A. M., Forsyth, P., de Boer, R. A., Mueller, C., Lyon, A. R., Lund, L. H., Piepoli, M. F., Heymans, S., Chioncel, O., Anker,

Suryani Manurung*, Dinny Atin Amanah, Emy Rianti, Ulty Desmarnita

Departemen Keperawatan, Politeknik Kesehatan Kementerian Kesehatan Jakarta I
Corresponding author: *E-mail: suryanimanurung19@gmail.com

DOI: <https://doi.org/10.33024/minh.v8i11.1832>

- S. D., Ponikowski, P., Seferovic, P. M., Johnson, M. R., Mebazaa, A., & Sliwa, K. (2019). *Pathophysiology, diagnosis and management of peripartum cardiomyopathy: A position statement from the Heart Failure Association of the European Society of Cardiology Study Group on peripartum cardiomyopathy*. *European Journal of Heart Failure*, 21(7), 827–843.
- Browner, W. S., Newman, T. B., Cummings, S. R., Grady, D. G., Huang, A. J., Kanaya, A. M., & Pletcher, M. J. (2022). *Designing clinical research* (5th ed.). Wolters Kluwer.
- Carlson, S., Schultz, J., Ramu, B., & Davis, M. B. (2023). Peripartum cardiomyopathy: risks diagnosis and management. *Journal of Multidisciplinary Healthcare*, 1249-1258.
- Davis, M. B., Arany, Z., McNamara, D. M., Goland, S., & Elkayam, U. (2020). Peripartum cardiomyopathy: JACC state-of-the-art review. *Journal of the American College of Cardiology*, 75(2), 207-221.
- Gordis, L. (2013). *Epidemiology e-book*. Elsevier Health Sciences.
- Harahap, A. P., Adi, M. S., Siatmi, A., & Purnami, C. T. (2024). Exploring perinatal mental health in Indonesia: A mixed-method study in Mataram, West Nusa Tenggara. *Narra J*, 4(1), e667.
- Hoes, M. F., Arany, Z., Bauersachs, J., Hilfiker-Kleiner, D., Petrie, M. C., Sliwa, K., & van der Meer, P. (2022). Pathophysiology and risk factors of peripartum cardiomyopathy. *Nature Reviews Cardiology*, 19(8), 555-565.
- Hwang, B., Pelter, M. M., Moser, D. K., & Dracup, K. (2020). Effects of an educational intervention on heart failure knowledge, self-care behaviors, and health-related quality of life of patients with heart failure: Exploring the role of depression. *Patient education and counseling*, 103(6), 1201-1208.
- Iorgoveanu, C., Zaghloul, A., & Ashwath, M. (2021). Peripartum cardiomyopathy: a review. *Heart failure reviews*, 26(6), 1287-1296.
- Farrell, A. S., Kuller, J. A., Goldstein, S. A., & Dotters-Katz, S. K. (2021). Peripartum cardiomyopathy. *Obstetrical & Gynecological Survey*, 76(8), 485-492.
- Fett, J. D., Christie, L. G., Carraway, R. D., & Murphy, J. G. (2005). *Five-year prospective study of the incidence and prognosis of peripartum cardiomyopathy at a single institution*. *Mayo Clinic Proceedings*, 80(12), 1602–1606.
- Prameswari, H. S., Dewi, T. I., Hasan, M., Martanto, E., Astuti, A., Saboe, A., & Cool, C. J. (2024). Clinical Presentation and 6-Month Outcomes of Patients with Peripartum Cardiomyopathy in Indonesia. *International Journal of General Medicine*, 1073-1083.
- Prameswari, H. S., Purnomowati, A., & Aprami, T. M. (2015). Prevalence, Characteristics, and Risk Factor of Patient with Peripartum Cardiomyopathyin Hasan Sadikin Hospital Bandung. *Indonesian Journal of Cardiology*, 38-44.
- Sigauke, F. R., Ntsinjana, H., & Tsabedze, N. (2024). Peripartum cardiomyopathy: a comprehensive and contemporary review. *Heart Failure Reviews*, 29(6), 1261-1278.
- Sliwa, K., Ojji, D., Bachelier, K., Böhm, M., Damasceno, A., & Stewart, S. (2014). Hypertension and hypertensive heart disease in African women. *Clinical research in cardiology*, 103(7), 515-523.
- Setyawati, R., Astuti, A., Utami, T. P., Adiwijaya, S., & Hasyim, D. M. (2024). The importance of early detection in disease management. *Journal of World Future Medicine, Health and Nursing*, 2(1), 51-63.
- Sitio, M., Tjahjono, C. T., Martini, H., & Kurnianingsih, N. (2021). Peripartum Cardiomyopathy (PPCM): How to Diagnose and Deal with?. *Heart Science Journal*, 2(1), 46-49.

Suryani Manurung*, Dinny Atin Amanah, Emy Rianti, Ulty Desmarnita

Departemen Keperawatan, Politeknik Kesehatan Kementerian Kesehatan Jakarta I
Corresponding author: *E-mail: suryanimanurung19@gmail.com

DOI: <https://doi.org/10.33024/minh.v8i11.1832>