

THE APPLIED IMV MODEL OF SUICIDAL BEHAVIOUR FOR PREMENSTRUAL DYSPHORIC DISORDER (IMV-PMDD)

FINAL REPORT

Authors: Lynsay Matthews, Julie Riddell, Seonaid Cleare,
Eileen Harkess-Murphy and Rory C. O'Connor

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Summary

Why is a model needed to understand suicide risk and PMDD?

Premenstrual Dysphoric Disorder (PMDD) is a severe hormone-based mood disorder with high rates of suicidality and self-harm. PMDD affects around 3–8% of women and individuals assigned female at birth (AFAB).¹ One in three people with PMDD will attempt suicide at least once.² In the UK PMDD Research Agenda, addressing suicide and self-harm was identified as a top 5 priority for PMDD research.³

"I just think back to all the teenage years and the suicide attempts, and how I could have just not been here, how close I can imagine we've all been to just not being here anymore." (Person with PMDD)

Understanding how PMDD contributes to suicide and self-harm is critical to developing effective prevention strategies. One way to understand suicidal behaviour is through the **Integrated Motivational-Volitional (IMV)** model,⁴ a predominant theoretical model which describes common pathways to the development of suicidal behaviour across three phases: pre-motivational (predisposing factors); motivational (formation of suicidal ideation); and volitional (suicidal action). Given the cyclical nature and core symptoms of PMDD, we have refined the IMV model to account for specific factors which increase suicide risk in those with PMDD.

Our applied model identifies factors and mechanisms that need to be considered when supporting people with PMDD.

1 Reilly TJ, et al. (2024) The prevalence of Premenstrual Dysphoric Disorder: Systematic review and meta-analysis. *J Affect Disord*, 349:534–540. <https://doi.org/10.1016/j.jad.2024.01.066>

2 Eisenlohr-Moul T, et al. (2022) Prevalence of lifetime self-injurious thoughts and behaviors in a global sample of 599 patients reporting prospectively confirmed diagnosis with Premenstrual Dysphoric Disorder. *BMC Psych*, 22(1):199. <https://doi.org/10.1186/s12888-022-03851-0>

3 Matthews L, Riddell J. (2025). Premenstrual Dysphoric Disorder (PMDD): The UK research agenda. University of the West of Scotland. <https://doi.org/10.5281/zenodo.14644017>

4 O'Connor RC & Kirtley OJ. (2018). The integrated motivational-volitional model of suicidal behaviour. *Philos Trans R Soc B*, 373(1754), 20170268. <https://doi.org/10.1098/rstb.2017.0268>

5 Riddell J, Cleare S, O'Connor R, Matthews L. (2024) Risk and protective factors associated with suicide risk and self-harm in people with premenstrual dysphoric disorder. PROSPERO. Available from <https://www.crd.york.ac.uk/PROSPERO/view/CRD42024626538>



What did we do?

We refined the original IMV model using five phases of research.

Phase 1	Thematic analysis of interviews (n=22) and seven focus groups (n=50) with people living with PMDD
Phase 2	Qualitative insight from four focus groups with professional stakeholders (n=17)
Phase 3	Online survey (n=208) and final stakeholder workshop (n=6)
Phase 4	Identification of IMV-model as an adaptable tool for suicide prevention in people with PMDD, and initial scoping of the evidence-base
Phase 5	Systematic review of risk and protective factors AND associations with PMDD

Phases 1–3 yielded consented data from three of our PMDD studies. Phase 5 is currently ongoing.⁵

What did we find out?

1. Suicide risk and PMDD

- There are clear links between PMDD and suicide risk and self-harm, co-occurring mental health conditions, and neurodiversity.
- People with PMDD report cyclical self-injurious behaviours, including self-harm, suicidal ideation or attempts, and feelings of being “out of control”. These are experienced across the life course.
- The risk of hospitalisation for suicidal behaviour increases during the luteal phase (latter half) of the menstrual cycle.

2. Gaps in Awareness and Support

- Knowledge and awareness of PMDD is low amongst healthcare and support professionals.
- There is limited access to PMDD-specific mental health support and resources (for people with PMDD and those who support them).

3. Challenges and Opportunities for Assessment

- Traditional mental health assessment scales (e.g., Patient Health Questionnaire-9, PHQ-9) often miss the fluctuating, cyclical pattern of PMDD, leading to missed opportunities for diagnosis and support.
- Existing scales can be effective, but accuracy depends on timing (e.g. luteal versus follicular phase) and attention to symptom frequency.

- Asking “how often” symptoms occur can improve clinical conversations and reveal patterns related to PMDD.
- People with PMDD reported their period typically began in the hours following suicidal behaviour. This important information was never explored by health professionals. Best practice should explore what happens before and after a crisis.

How to use the model

- The model is presented on page 8. Purple boxes, and arrows, indicate the original IMV model. Teal coloured boxes indicate the addition of PMDD-specific factors. Considering these factors will help inform appropriate interventions.
- **Pre-motivational phase:** This phase identifies factors that predispose people to suicidal thoughts and behaviours. Research suggests a strong link between neurodiversity and PMDD.⁶ Menstrual and mental health stigma plays a role in how people with PMDD are assessed in health settings. Hormonal trigger events (e.g., starting or stopping hormonal treatments) exacerbate mental health crises. People with PMDD have negative responses to normal fluctuating hormone levels, making them high risk for any hormonal changes.
- **Motivational phase:** This phase identifies factors that motivate suicidality. Repeated dismissal or misdiagnosis leads to feeling trapped in a monthly ‘vicious cycle’. People typically experience this cycle for years (up to 40 years), leading to cumulative exhaustion.⁷
- **Volitional phase:** This phase identifies factors that govern the transition from suicidal ideation to suicidal behaviours. People with PMDD report feeling “out of control”, with suicidal behaviour driven by impulsivity rather than planning.
- **Overarching considerations:**
 - Timing of risk factors is influenced by menstrual cycle phase. The luteal phase is high risk for suicidal behaviour in people with PMDD.
 - People with PMDD are typically not symptomatic outside of their luteal phase, making it difficult to access support.
 - The factors identified for PMDD may also affect the general population.

6 Lin PC, et al. (2024) Comorbid Attention Deficit Hyperactivity Disorder in Women with Premenstrual Dysphoric Disorder. J Womens Health (Larchmt). Sep;33(9):1267–1275. <https://doi.org/10.1089/jwh.2023.0907>

7. Brown D, et al. (2024) Women with Premenstrual Dysphoric Disorder experiences of suicidal thoughts and behaviours: a mixed methods study. Front Psychiatry. 6;15:1442767. <https://doi.org/10.3389/fpsyt.2024.1442767>

Next Steps

We are finalising our systematic review, which when published, will present the model in more detail.

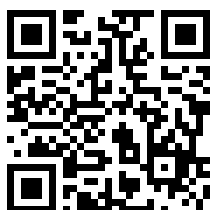
To stay updated about developments please visit www.pmdresearch.com and www.suicideresearch.info

We want to hear from you

Has the PMDD model changed how you think about suicidality in women and AFAB individuals?

How has the model changed (or intend to change) your support of those living with PMDD?

To share your feedback simply click or scan the QR code. This helps us understand how the PMDD model impacts on knowledge and practice.

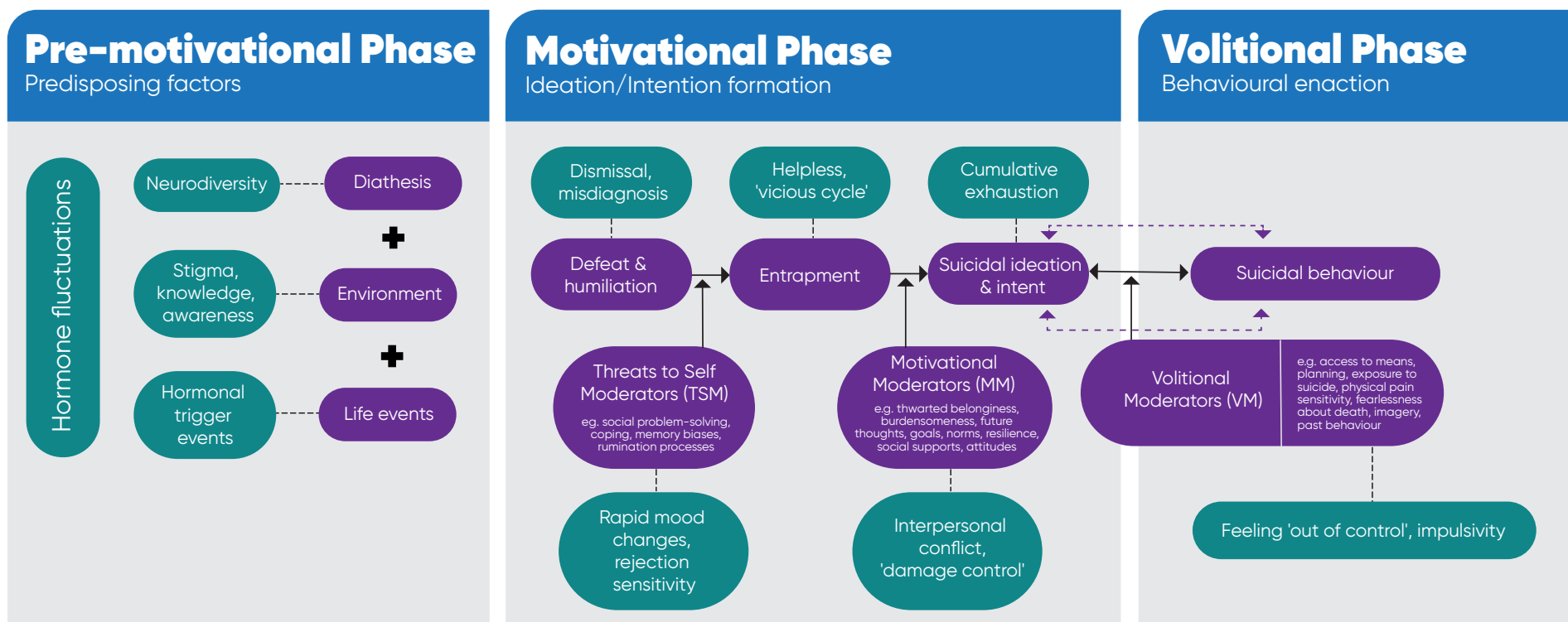


The Applied IMV* Model of Suicidal Behaviour for Premenstrual Dysphoric Disorder (IMV-PMDD)

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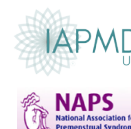


Note: Timing of risk factors is influenced by menstrual cycle phase. The luteal phase (latter half of cycle) is high risk for suicidal behaviour.



Guidance note: Purple boxes and arrows indicate the original IMV model* of suicidal behaviour in the general population. Teal coloured boxes identify PMDD-specific factors for consideration.

*Adapted from the original Integrated Motivational-Volitional model of suicidal behaviour (O'Connor & Kirtley al., 2018) <https://suicideresearch.info/the-imv/>



Resources



This research addresses Research Priority 3 'Suicide and Self-Harm Prevention' from the UK PMDD Research Agenda

Matthews L, Riddell J. (2025). *Premenstrual Dysphoric Disorder (PMDD): The UK research agenda*. University of the West of Scotland. <https://doi.org/10.5281/zenodo.14644017>



The International Association for Premenstrual Disorders (IAPMD Global and IAPMD UK) provides evidence-based information for health professionals, researchers and people living with premenstrual disorders. You will find guidelines, training, webinars and an online professionals' community at www.iapmd.org



The National Association for Premenstrual Syndromes (NAPS) provides resources and support for premenstrual syndromes. Visit www.pms.org.uk for information on their NHS study days and resources.



To stay updated about our PMDD research please visit www.pmdresearch.com



To stay updated about the work of the Suicidal Behaviour Research Lab (SBRL) please visit www.suicideresearch.info

