

Short Report

Evaluation of a new Perinatal Mental Health Service in a University Maternity Hospital

C. Cooney¹, N. Kennedy², A. Doherty³ , M. Shipsey³, S. W. Lindow³ and C. Hinds¹

¹Coombe Women and Infants University Hospital, Specialist Perinatal Mental Health Service, Cork St, Dolphin's Barn, Dublin 8, Ireland, ²St. Patrick's University Hospital, St James' St, Dublin 8, Ireland and ³Coombe Women and Infant's University Hospital, Dublin 8, Ireland

Abstract

Objectives: Specialist Perinatal Mental Health Services (SPMHS) are a new development in Ireland. This service evaluation examined the impact of the introduction of a SPMHS multidisciplinary team (MDT) on prescribing practices and treatment pathways in an Irish maternity hospital.

Methods: Clinical charts were reviewed to collect data on all referrals, diagnoses, pharmacological and non-pharmacological interventions delivered in a SPMHS over a 3-week period in 2019. The findings were compared to the same 3-week period in 2020 following the expansion of the SPMHS MDT.

Results: In 2019 ($n = 32$) and 2020 ($n = 47$), most (75 and 79%, respectively) assessments were antenatal. The proportion of patients prescribed psychotropic medication within the SPMHS was not significantly different from 2019 (31%) to 2020 (23%), though more patients were already prescribed psychotropic medications at the time of referral (22% in 2019 *v.* 36% in 2020). There was an increase in MDT interventions in 2020 with more input from psychology, clinical nurse specialist (CNS), and social work intervention. Adherence to prescribing standards improved from 2019 to 2020.

Conclusion: Prescribing patterns remained unchanged between 2019 and 2020. Improvement was observed in adherence to prescribing standards and there was increased provision of MDT interventions in 2020. Broader diagnostic categories were also used in 2020, possibly suggesting that the service is now providing more individualized care.

Keywords: Infants; Ireland; maternal health; perinatal mental health; prescribing; service model; women

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Introduction

Pregnancy does not protect against mental illnesses such as depression, but it is a time of vulnerability for women to become mentally unwell (Rich-Edwards 2006). The prevalence of probable depression in an Irish sample of pregnant women was estimated to be 15.7% in a large-scale screening study in 2018 (Jairaj et al., 2018). This is in keeping with international data, where prevalence rates of depression in pregnancy have found to be 14.5% for episodes of minor or major depression (Gavin et al., 2005). Untreated antenatal depression may result in an increased incidence of preterm births and low-birth-weight babies (Jarde et al., 2016). Other risks include pre-eclampsia and eclampsia, increased irritability of the newborn, and increased risk of postpartum depression (Dubovicky, et al., 2017). Untreated perinatal mental disorder can negatively impact on children's psychological and developmental well-being into adolescence (Stein et al., 2014).

Due to the limitations on pharmacotherapy research in the perinatal population, health care professionals often rely on lower quality evidence to make treatment decisions with their patients (Ayad & Costantine, 2015). The risk of harm to the fetus is a major cause of pregnant women not being included in clinical trials. Nevertheless, it is evident that large numbers of women are prescribed medication (Mitchell et al., 2011), with fetuses and women therefore being exposed to unknown risks.

The COVID-19 pandemic has had a considerable impact on the mental health of women in the perinatal period. A study conducted at CWIUH found high levels of self-reported anxiety and obsessional symptoms among women attending the service (Hinds et al., 2021). This is in keeping with international data which indicated that rates of anxiety and depression among women in the perinatal period were higher during the COVID-19 pandemic period. (Ceulemans, et al., 2020).

Specialist Perinatal Mental Health Services (SPMHS) have been introduced in each of Ireland's six hospital groups to better serve the complex mental health needs of women in the perinatal period (HSE 2017). The Health Service Executive's Specialist Perinatal Mental Health Services Model of Care was launched in late November 2017 and implemented within the CWIUH, Dublin from late 2019 onward, with the addition of consultant psychiatrist hours (to 1.1 WTE), increased non-consultant hospital doctor

Corresponding author: Caoimhe Cooney; Email: caoimhecooney@gmail.com, caoimhe.cooney@hse.ie

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(NCHD) hours (1.0 WTE), clinical nurse specialists (CNS) (2.0 WTE), senior clinical psychologist (1.0 WTE), and a mental health social worker (MHSW) (1.0 WTE), additionally leaving in place 0.1 WTE (junior NCHD), and a mental health midwife (MHM) (1.0 WTE). Administrative staff increased from 2.0 WTE to 2.2 WTE.

The SPMHS provides multidisciplinary outpatient care and liaison ward-based inpatient care to the hospital. The CWIUH offers SPMHS to women throughout the perinatal period and continued to operate at full capacity throughout the COVID-19 lockdown periods, by switching from in-person to virtual consultation provided by the HSE (Attend Anywhere). This cross-sectional service evaluation sought to compare service delivery and prescribing patterns before and after the introduction of a SPMHS in a large Irish university maternity hospital.

Methods

All new patient mental health assessments were retrospectively reviewed over a 3-week period from 9 September 2019 to 27 September 2019, respectively, prior to the introduction of a resourced SPMHS in CWIUH, a large university maternity hospital, and repeated over the same 3-week period in September 2020 after the expansion of the service and educational sessions on maternal mental health targeted mainly at NCHDs. A standardized proforma was designed and used by the lead author (CC) to extract sociodemographic data and clinical data including clinician conducting the first assessment, diagnosis, and interventions including pharmacological treatment and adherence to internationally recognized guidelines. As such, prescribing practices were compared to the Standards for Community Perinatal Mental Health Services (4th Edition), 2018 namely: (1) documentation of discussion of risk benefit balance in prescribing psychotropic medication in addition to the provision of written information about medication in the perinatal period; (2) documentation of the involvement of the next-of-kin (NOK) in the management plan; and (3) documentation of breastfeeding status. An anonymized database was generated on SPSS (IBM, Armonk, New York), and variables for 2020 and 2019 were compared and analyzed. Categorical variables were compared using Chi-squared or Fisher's exact test.

Results

In 2019 and 2020, there was 32 and 47 new assessments conducted respectively, with the majority (75 and 79%, respectively) being antenatal assessments. There was no change in the proportion of primiparae in 2019 ($n = 7$, 22%) and in 2020 ($n = 12$, 26%) (Fisher's exact test, $p = 0.8$). Mean (SD) age was 31.7 (6.7) in 2019 and 32.4 (6.3) in 2020. Similarly, the mean duration of patient contact (weeks) was similar during both time periods with the SPMHS namely 19.3 weeks in 2019 and 22.7 weeks in 2020.

Compared to 2019, the clinician most frequently conducting new patient assessments changed in 2020 from MHMW ($n = 15$, 47% in 2019 *v.* $n = 1$, 2% in 2020) (Fisher's exact test, $p < 0.05$) to CNS (none in 2019 *v.* $n = 14$, 30% in 2020) (Fisher's exact test, $p < 0.05$). A similar number of assessments were undertaken by doctors in 2020 ($n = 17$, 53% in 2019 *v.* $n = 29$, 62% in 2020) (Fisher's exact test, $p = 0.49$), and some new assessments were carried out by psychologists in 2020 ($n = 3$, 6%) compared to none in 2019 (Fisher's exact test, $p = 0.26$).

Depression was significantly more frequently assigned as the primary diagnosis in 2019 ($n = 19$, 59%) with six (19%) being diagnosed with generalized anxiety disorder and two (6%) having a

Table 1. Non-pharmacological treatment provided to assessed patients in 2019 and 2020

	2019 $n = 32$ n (%)	2020 $n = 47$ n (%)	P (Fisher's exact test)
Non-pharmacological treatment			
Individual psychological assessment	0	8 (17%)	$P < 0.05$
Social worker assessments	0	7 (15%)	$P = 0.04$
Clinical nurse specialist individual support	1 (3%)	15 (32%)	$P < 0.01$
Cognitive behavioral therapy	1 (3%)	8 (17%)	$P = 0.08$
Mental health midwife support	20 (63%)	3 (6%)	$P < 0.001$
Bereavement midwife support	1 (3%)	2 (4%)	$P = 1.0$
Birth reflection midwife support	2 (6%)	1 (2%)	$P = 0.5626$

diagnosis of substance misuse with individual patients being diagnosed with adjustment disorder, bipolar affective disorder, panic disorder, and post-traumatic stress disorder (PTSD). By contrast, in 2020, clinicians used a wider range of diagnoses at first assessments with only nine (19%) having a primary diagnosis of depression, with more having a diagnosis of various anxiety disorders namely generalized anxiety disorder ($n = 11$, 23%), panic disorder ($n = 7$, 15%), PTSD ($n = 3$, 6%), and obsessive-compulsive disorder ($n = 2$, 4%). Similarly, more patients were likely to be diagnosed with adjustment disorder ($n = 4$, 9%) or emotionally unstable personality disorder ($n = 4$, 9%) though not substance misuse ($n = 3$, 6%) in 2020. The broader range of diagnoses in 2020 is likely to reflect the greater level of expertise among clinicians at that time.

Similarly, there was an increase in multidisciplinary team (MDT) interventions in 2020 reflecting broader individualized treatment with increased CNS support, psychological, and social worker assessments (see Table 1). By contrast, the number of patients prescribed psychotropic medication by the SPMHS was not significantly different in 2020 compared to 2019 ($n = 10$, 31% in 2019 *v.* $n = 11$, 23% in 2020; $\chi^2 = 0.61$; $p = 0.44$) or in already being prescribed psychotropic medications at the time of referral in 2020 ($n = 7$, 22% in 2019 *v.* $n = 17$, 36% in 2020; $\chi^2 = 1.83$; $p = 0.18$). Prescribing standards also improved from 2019 to 2020. The discussion of risk benefit balance in prescribing psychotropic medication was documented in 60% ($n = 10$) of patients in 2019 and 91% ($n = 11$) of patients in 2020, not significantly different (Fisher's exact test, $p = 0.15$). The provision of written information about medication in the perinatal period increased from none provided in 2019 to 73% ($n = 11$) in 2020 (Fisher's exact test, $p < 0.05$) as did the involvement of the NOK in the management plan, none in 2019 compared to 64% ($n = 11$) in 2020 (Fisher's exact test, $p < 0.05$). Similarly, there was an increase in the number of patients whose breastfeeding status was documented from 30% ($n = 10$) in 2019 to 100% ($n = 11$) in 2020 (Fisher's exact test, $p < 0.05$).

Discussion

This study compared changes in clinical practice after the development of the SPMHS over a 1-year period. Improvement was shown in adherence to and documentation of prescribing guidelines, and an increased range of multidisciplinary

assessments were conducted and a broader range of diagnoses utilized. There was little change in the overall proportion of patients initiated on psychotropic medications by the service.

More referrals were seen in 2020 in comparison with 2019, though the demographics of patients seen were unchanged. It is possible that the increased number of referrals was due to the COVID-19 pandemic, contributing to increased risk of mental health difficulties in this population though given the relatively small sample sizes it is difficult to be certain. There may also be increased awareness among referrers about the availability of the SPMHS as a result of promotional campaigns and educational sessions, on a national and hospital level. Diagnostic categorization of patients changed significantly, with depression less frequently assigned as the primary diagnosis after the introduction of the PMHS. This is not in keeping with international data, which indicate that the COVID-19 pandemic has resulted in significantly increased risk of depressive symptoms (Ettman et al., 2020). The reasons for the reduced proportion of depression diagnosis in 2020 are unclear, though it is likely that the introduction of specialized MDT members may have resulted in greater nuance and expertise in clinical formulation and a wider range of diagnostic categories being used. It is also possible that other diagnoses such as anxiety disorders occurred more frequently in the context of the COVID-19 pandemic which has been shown to increase the rates of perinatal anxiety disorders (Brik et al., 2021).

Increased rates of antidepressant prescribing, particularly in the primary care setting, have been shown to have occurred between May and September 2020 across the National Health Service (NHS), United Kingdom (Armitage, 2021). In the present study, a higher proportion of patients were prescribed psychotropic medications by their GP/CMHT prior to attending the SPMHS in 2020, though this change was not statistically significant. It is possible that the impact of the COVID-19 pandemic resulted in higher rates of mental health difficulties and more prescribing of psychotropic medication at a primary care level. Prescribing proportions within our service were not shown to increase from 2019 to 2020, despite an increase in prescribing rates of psychotropic medications internationally in the context of the COVID-19 pandemic (Armitage, 2021).

Prescribing standards and documentation improved from 2019 to 2020 with an improvement in the documentation of discussion of risk benefit balance in prescribing psychotropic medication in addition to the provision of written information about medication in the perinatal period, the involvement of the NOK in the management plan in addition to an increase in the number of patients whose breastfeeding status was documented. The discussion of risk benefit balance with the patient in deciding whether to prescribe psychotropic medications is of particular importance in the perinatal patient population. Pharmaceutical manufacturers generally recommend against prescribing psychotropic medications to women who are pregnant or breastfeeding. The resulting “off-label” prescribing leaves clinicians with a potentially higher level of responsibility for their prescribing practices (Baldwin and Kosky 2007), meaning good documentation and adherence to internationally recognized standards are vital for clinicians involved in such a service. Generic factors relating to prescribing in the perinatal period are important to prescribing clinicians, given the higher level of uncertainty around specific medication choices (McAllister-Williams et al., 2017). This includes collaborative decision-making with the patient and their NOK around treatment choices, and provision of non-pharmacological treatment options where feasible.

Strengths of this cross-sectional study include that this study evaluated the effects of development of a PMHS in a large maternity hospital which appear to lead to improvements in diagnosis, multidisciplinary treatment, and adherence in prescribing standards which enhances patient care and safety. The study is naturalistic, and there are a paucity of studies describing perinatal mental health care in an Irish setting. Limitations include the relatively short periods of evaluation and subsequently number of assessments limiting power to detect differences in care and which may limit generalizability of findings.

Conclusion

This cross-sectional service evaluation shows broader diagnosis, increased non-pharmacological assessments, and better adherence with prescribing standards after the introduction of the SPMHS MDT. The broader range assessments and treatments may have led clinicians to rely less heavily on pharmacological treatments. This also likely represents an improvement in evidence-based clinical practice with more patient-centered, individualized care plans being offered to women and their families. Our findings highlight the need to further improve adherence to prescribing guidelines relating to the documentation of collaborative decision-making around the use of medications in the perinatal period; documenting breastfeeding status where relevant, as this has implications for the use of medication in the perinatal period; increasing involvement of the NOK in care plans; and the provision of written information to patients. Larger prospective studies are now needed to further evaluate the provision of additional perinatal mental health services.

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Competing interests. Dr Catherine Hinds is a member of the national implementation group for perinatal mental health services.

Ethical standards. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation with the Helsinki Declaration of 1975, as revised in 2008. The study protocol was approved by the AQUA Committee of Coombe Women and Infant's University Hospital, Dublin 8.

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Appendix

Standards for Community Perinatal Mental Health Services (4th Edition), 2018) (2021) Rcpsych.ac.uk\ Available at: https://www.rcpsych.ac.uk/docs/default-source/improving-care/ccqi/quality-networks/perinatal/pqn-standards-for-community-perinatal-mental-health-services-4th-edition.pdf?sfvrsn=f31a205a_4 (Accessed: 25 May 2021), 2021)

4.4 When medication is prescribed, patients are given written and verbal information to ensure they understand the purpose, expected outcomes, interactions and limitations, and side effects.

4.5 Patients and their partner/significant others (with patient consent) are helped to understand the functions, expected outcomes, limitations, and side effects of their medications and to self-manage as far as possible

5.1f Current or planned mode of feeding and any previous or current problems with feeding.