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Special Feature Article

Interprofessional Collaboration at General Hospitals: From the Perspective of an Obstetrician and Gynecologist

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Abstract

Women's mental health care related to the perinatal period, such as postpartum depression care, has become an area of focus for obstetricians and gynecologists. Obstetric clinical practice guidelines have also started referring to puerperal mental disorders and screening for mental disorders during pregnancy. Therefore, in 2020, we conducted a questionnaire survey through the Kinki Society of Obstetrics and Gynecology Perinatal Study Group to explore the current status of obstetricians' management of mental disorders during the perinatal period. This survey revealed that the execution rate of maternal mental health screening was 100%; however, about 40% of maternity facilities answered that psychiatric referrals made them feel stressed for reasons such as "it is difficult to recommend psychiatric consultations.

At our hospital, a liaison psychiatric team (consisting of a specialist nurse for maternity care, pharmacist, social worker, and patient support center admission/discharge coordinating nurse) led by a liaison psychiatric nurse works as a multidisciplinary collaboration group. The team was formed in 2015; herein, we retrospectively studied the effect of the intervention by the liaison team. More specifically, the investigation was retrospectively performed from January 2011 to December 2019 using medical records from a single university medical hospital in Japan. The participants comprised pregnant women with mental disorders. Of the 4,066 women who delivered during the study period,

152 were detected as having access to the liaison team (2015~2019), while 92 were recognized as controls (2011~2014). Then, we conducted a comparative analysis between those who contact to the liaison team and the control group. We found that the liaison system was associated with an increased rate of referral to the local public health center ($P=0.003$). The system also significantly delayed the time at which patients first visited a psychiatrist because a psychiatric nurse could determine the urgency through interviews with the patients. The liaison nurse conducted interviews at obstetrics units, making it easier for obstetricians and gynecologists to refer pregnant women with psychiatric disorders and puerperal women to psychiatrist. In addition, the liaison system may contribute to reducing the burden on psychiatrists because the information for medical treatment is already recorded by the liaison team before the first visit to a psychiatrist. However, we believe that it is necessary to create awareness about the activities of multidisciplinary collaboration groups. This is because, when we approached a local obstetrician, they complained, "Why don't you approach a psychiatrist? If it's just an interview with a nurse, we can manage it."

Keywords: interprofessional collaboration, pregnant women's mental health, liaison psychiatric nursing specialist nurse

Introduction

Japan has the lowest maternal mortality rate in the world, reflecting the provision of a safe perinatal medical care system over many years. However, it has become clear that Japan's late maternal mortality rate is higher than that in other countries.¹⁾ Furthermore, mental disorders, particularly postpartum depression, have been identified as underlying factors. As a result, postpartum mental disorders were included in the "Guidelines for Obstetrics and Gynecology," considered the standard reference for obstetric

practice, starting in 2014. These guidelines are revised every three years, and the 2017 edition also addressed mental disorders during pregnancy, and recommended screening for such disorders beginning in the prenatal period. Moreover, various guidelines and related academic societies have increasingly emphasized the importance of interprofessional collaboration in this field. This paper introduces the current state of pregnant women's mental health care in general hospitals, and describes the interprofessional collaboration

initiatives implemented at our hospital, along with their outcomes.

I. Actual Practices of Pregnant Women's Mental Health Care in General Hospitals

To investigate the actual situation in general hospitals, a questionnaire-based survey was conducted in 2020 using the mailing list of the Perinatal Research Committee of the Kansai Society of Obstetrics and Gynecology.²⁾ Among the 12 facilities that responded, six were comprehensive perinatal centers, five were regional perinatal centers, and one was classified as "other." The average number of deliveries per facility was 427, with an average of 9 NICU beds. Ten facilities had an affiliated psychiatric department, and seven had an affiliated psychiatric ward. The average number of pregnancies complicated by mental illness per facility per year was 24.

Mental health screening was conducted at all facilities, covering all eligible individuals. With respect to the timing, approximately half of the facilities performed screening during pregnancy, but the methods and timing were not standardized. In contrast, all facilities reported conducting postpartum screening at one month after delivery. The Edinburgh Postnatal Depression Scale (EPDS) was used as the screening method at all facilities. In

summary, screening for postpartum mental disorders was appropriately conducted using EPDS in accordance with the guidelines, whereas screening during pregnancy and its methods varied across facilities and were not standardized.

The most common response to a positive screening result was contacting local government authorities, followed by interviews conducted by midwives or nurses, and referrals to clinical psychologists. Only 25% of facilities recommended psychiatric consultation. This finding suggests that obstetricians and gynecologists experience burdens or difficulties in collaborating with psychiatrists. According to the questionnaire responses, some facilities reported "difficulty recommending psychiatric consultation," "difficulty determining the need for consultation," and "weak ties with psychiatry," highlighting the need for a "bridge role," such as liaison psychiatric nurses (hereafter, liaison nurses). Regarding the current state of interprofessional collaboration already implemented in general hospitals, social workers were most frequently involved (53%), followed by liaison nurses (33%). When asked about satisfaction with the allied health professionals responsible for interprofessional collaboration, 75% of facilities responded with the highest rating, suggesting that obstetricians

and gynecologists in facilities currently practicing interprofessional collaboration recognize the effectiveness of the system.

II. Interprofessional Collaboration at Our Hospital

1. Our Approach

Previously, at our hospital, pregnant women who brought a referral letter from their primary psychiatrist were referred directly to the psychiatry department for concurrent care. Additionally, when mental illness was suspected during a prenatal checkup, the pregnant woman was encouraged to visit the psychiatry department directly. However, since 2015, a liaison psychiatry team, led primarily by liaison psychiatric nurse specialists, has been involved in care. Instead of immediately referring pregnant women presenting with a referral letter to the psychiatric department, obstetricians now request an interview with the liaison nurse. Similarly, when midwives identify pregnant or postpartum women suspected of having a mental illness, they refer them to the liaison nurse.

Liaison nurses conduct interviews in the obstetrics outpatient department, so patients do not feel the same resistance they might have when directly visiting a psychiatric department. Also, the medical records are documented in a manner that facilitates psychiatric

assessment. During the initial interview, the frequency and other aspects of care are planned. Subsequent interviews are conducted as appropriate during prenatal checkups, with referrals to psychiatrists made as and when needed. If the content of the interview suggests the marked urgency for referral to a psychiatrist, the liaison nurse consults the psychiatrist immediately. Furthermore, the liaison nurse provides and shares this information during the liaison psychiatric team conference. This conference comprises a multidisciplinary team including maternal nursing specialists, pharmacists, social workers, and discharge planning nurses from the patient support center.

2. Effect of Interprofessional Collaboration

We examined the extent and nature of the impact of introducing a liaison psychiatric team at our hospital. This study was conducted after obtaining approval from our hospital's Ethics Committee. Information was collected from the medical records of pregnant women with comorbid psychiatric disorders who visited our hospital between January 2011 and December 2019, and it was conducted as a retrospective cohort study.³⁾ The method involved comparing the period before the liaison psychiatric team began

activities (2011–2014) as the control group with the period after activities began (2015–2019) as the comparison group to evaluate the effects on pregnancies with comorbid mental disorders.

Information on 92 pregnancies with comorbid mental disorders was collected during the 4 years before introduction, and on 152 pregnancies during the 5 years after introduction. The total number of deliveries over the entire period was 4,066, with pregnancies complicated by mental disorders accounting for 6% of all deliveries at our hospital. Patient characteristics before and after introduction of the team activities are shown in Table 1. No significant differences were observed in age, partner age, primiparity, unmarried status, unwanted pregnancy, presence of a referral letter from a community psychiatrist, type of psychiatric disorder, medication details, or number of medications prescribed. Furthermore, as shown in Table 2, no significant differences were noted in short-term perinatal outcomes, including mode of delivery, gestational age at delivery, birth weight, Apgar score, and neonatal prognosis up to one month postpartum. However, significant differences were identified in the presence of community liaison and gestational age at the first psychiatric visit (Table 3). When the

liaison psychiatric team intervened, the rate of community liaison significantly increased, and the gestational age at the initial psychiatric visit was significantly delayed.

Next, to examine the influence of each factor, multivariate analysis of variables that showed significant differences in univariate analysis was conducted. Multivariate logistic regression analysis regarding the presence of regional collaboration identified primiparity, number of medications, and liaison psychiatric team intervention as significant factors (Table 4). In addition, the gestational week at the first psychiatric consultation tended to be significantly earlier in primiparous women and those receiving a greater number of medications, and significantly later in unmarried women and those with liaison psychiatric team intervention (Table 5).

These results indicate that intervention by the liaison psychiatric team significantly contributes to connecting pregnant women with mental disorders to regional resources and significantly delays the gestational week at the first psychiatric visit. The delayed gestational week at the first psychiatric visit likely resulted from carefully planning the timing of psychiatric care after establishing trust with the patient, suggesting patient-

centered management. While delayed psychiatric consultation may lead to delayed psychiatric intervention and subsequent worsening of the patient's condition, liaison nurses encouraged early consultations for such patients, thereby mitigating this risk. Thus, liaison nurses functioned as a triage system. Furthermore, as a secondary effect, when liaison nurses conducted interviews prior to the initial psychiatric consultation and documented detailed information in the medical records, this likely contributed to reducing the burden on psychiatrists.

However, it is important to note that this study was retrospective, representing one of its limitations. Factors such as the severity of mental illness and a history of prior hospitalization may also be associated with regional collaboration rates and gestational weeks at the first psychiatric consultation; however, such information could not be collected in this study. Furthermore, it was not possible to determine whether the liaison nurses' intervention reduced the stress associated with psychiatric referrals among the obstetricians and gynecologists mentioned earlier. Moreover, it was not possible to clarify whether the liaison nurse intervention ultimately contributed to a reduction in the incidence of postpartum depression or suicide rates. However, it is expected

that an increase in the regional collaboration rate contributes to improved postpartum mental health.

Conclusion

This paper described the actual practice of interprofessional collaboration in a general hospital and initiatives implemented at our institution. It is self-evident that maternal mental health care is a challenge that requires close collaboration between obstetrics and psychiatry departments. Based on our data, interprofessional collaboration, exemplified by liaison nurses, is indispensable for the smooth operation of these services and such interventions are highly effective. Recent revisions to medical reimbursement systems are beginning to recognize these efforts, and we aim to continue our activities with the goal of further strengthening them.

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There are no conflicts of interest to disclose related to this paper.

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Table 1. Patient background

	Control group (n=92)	After team implementation (n=152)	P-value
Age (Interquartile range)	34 (30-38)	33 (28-36)	N.S.
Partner's age (Interquartile range)	35 (30-40)	35 (30-39)	N.S.
First pregnancy (%)	56 (60.8)	94 (61.8)	N.S.
Unmarried (%)	5 (5.4)	13 (8.5)	N.S.
Unintended pregnancy (%)	2 (2.2)	6 (3.9)	N.S.
Presence of referral letter from local psychiatrist			
Present (%)	61 (66.3)	86 (56.6)	N.S.
Absent (%)	31 (33.7)	66 (43.4)	N.S.
Mental disorders			
Depression (%)	29 (31.5)	49 (32.2)	N.S.
Panic disorder (%)	25 (27.1)	39 (25.7)	N.S.
Schizophrenia (%)	13 (14.1)	24 (15.8)	N.S.
Bipolar disorder (%)	9 (9.8)	18 (11.8)	N.S.
Anxiety disorder (%)	6 (6.5)	13 (8.6)	N.S.
Eating disorder (%)	6 (6.5)	7 (4.6)	N.S.
Obsessive compulsive disorder (%)	2 (2.2)	5 (3.3)	N.S.
Other (%)	9 (9.8)	15 (9.9)	N.S.
Type of medication			
Anxiolytics (%)	37 (40.2)	59 (38.8)	N.S.
Antidepressants (%)	31 (33.7)	35 (23.0)	N.S.
Antipsychotics (%)	26 (28.3)	48 (31.5)	N.S.
Antiepileptics (%)	10 (10.9)	14 (9.2)	N.S.
Number of medications administered			
No medication (%)	32 (34.7)	63 (41.4)	N.S.
Monotherapy (%)	21 (22.8)	38 (25.0)	N.S.
Two drugs (%)	15 (16.3)	24 (15.7)	N.S.
Three or more drugs (%)	14 (15.2)	32 (21.0)	N.S.

(Quoted from Reference 3)

Table 1. Patient background

Table 2. Maternal and infant outcomes up to 1 month postpartum

	Control group (n = 92)	After team implementation (n = 152)	P-value
Cesarean delivery (%)	40 (43.4)	56 (36.8)	N.S.
Gestational weeks at delivery (interquartile range)	38 (37-39)	38 (37-39)	N.S.
Birth weight (g) (interquartile range)	2834 (2599-3082)	2857 (2546-3101)	N.S.
Apgar score			
1-minute score (interquartile range)	8 (8-9)	8 (8-8)	N.S.
5-minute score (interquartile range)	9 (9-9)	9 (9-9)	0.0387
Umbilical artery blood pH (interquartile range)	7.302 (7.28-7.33)	7.294 (7.25-7.32)	N.S.
NICU admission (%)	22 (23.9)	34 (22.4)	N.S.
Congenital structural anomaly (%)	0 (0)	3 (2.0)	N.S.
Drug withdrawal syndrome (%)	6 (6.5)	6 (3.9)	N.S.
Breastfeeding (%)	64(69.6)	107 (70.4)	N.S.
Weight gain at 1-month checkup (interquartile range)	967.5 (754-1171)	1008 (777-1243)	N.S.

(Quoted from Reference 3)

Table 2. Maternal and infant outcomes up to 1 month postpartum

Table 3. Impacts on regional collaboration and psychiatric services

	Control group (n = 92)	After team implementation (n = 152)	P-value
Regional collaboration (%)	57 (62.0)	121 (79.6)	0.003
Gestational week at first psychiatric visit (interquartile range)	16 (11-28)	25 (18-32)	0.004
Psychiatric inpatient admission (%)	14 (15.2)	20 (13.2)	N.S.

(Quoted from Reference 3)

Table 3. Impacts on regional collaboration and psychiatric services

Table 4: Multivariate logistic regression analysis of factors associated with regional collaboration

Variables	Odds ratio	95% CI	P-value
Age	1.000	0.923-1.084	0.993
First-time birth	2.408	1.009-5.747	0.048
Unmarried	4.319	0.324-57.555	0.268
Mental illness			
Depression	1.984	0.514-7.659	0.320
Panic disorder	0.569	0.145-2.232	0.419
Schizophrenia	6.723	0.783-57.682	0.082
Bipolar disorder	5.595	0.409-76.631	0.197
Anxiety disorder	0.244	0.037-1.600	0.142
Eating disorder	2.318	0.307-17.486	0.415
Obsessive compulsive disorder	6.440	0.530-78.200	0.144
Others	3.218	0.501-20.692	0.218
Number of medications	1.730	1.187-2.521	0.004
Cesarean delivery	2.050	0.8264-5.083	0.122
Breastfeeding	0.432	0.137-1.365	0.153
Liaison psychiatric team intervention	6.230	1.853-20.916	0.003
Admission to psychiatric ward	1.200	0.368-3.919	0.762

(Quoted from Reference 3)

Table 4. Multivariate logistic regression analysis of factors associated with regional collaboration

Table 5: Multiple regression analysis of factors associated with gestational age at first psychiatric visit

Variables	Regression coefficient	95% CI	P-value
Age	-0.018	-0.299, 0.242	0.835
First-time birth	-0.189	-3.247, -0.235	0.024
Unmarried	0.213	0.736, 5.922	0.012
Mental illness			
Depression	-0.033	-2.390, 1.784	0.775
Panic disorder	-0.051	-2.843, 1.717	0.626
Schizophrenia	-0.097	-3.663, 1.428	0.387
Bipolar disorder	0.068	-2.049, 4.112	0.509
Anxiety disorder	0.036	-2.214, 3.396	0.678
Eating disorder	-0.017	-4.569, 3.713	0.838
Obsessive compulsive disorder	-0.003	-4.764, 4.622	0.976
Others	0.034	-2.710, 3.777	0.745
Number of medications	-0.183	-1.960, -0.065	0.037
Liaison psychiatric team intervention	0.266	0.873, 3.929	0.002

(Quoted from Reference 3)

Table 5. Multiple regression analysis of factors associated with gestational age at first psychiatric visit