The relationship between perinatal depression, anxiety, and sexist beliefs

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SUMMARY

Objective: Exposure to sexism is negatively associated with women's mental health. On the other hand, there is limited research in the literature on sexism and mental health during pregnancy. This study aimed to investigate the relationship between common mental disorders during pregnancy, such as depression and anxiety, and sexist beliefs.

Method: For this scope, 170 pregnant women over 18 were contacted. All participants completed information forms measuring sociodemographic and clinical characteristics, the Tilburg Pregnancy Distress Scale, the Multidimensional Scale of Perceived Social Support, the Hospital Anxiety and Depression Scale, and the Ambivalent Sexism Inventory. The correlation coefficient was calculated for the relationships between variables. Two separate hierarchical regression models were tested to determine the predictors of depression and anxiety.

Results: Depression and anxiety had different characteristics in terms of predictive variables. Consistent with the literature, negative affect, partner involvement, and perceived social support significantly predict both depression and anxiety. Negative affect and partner involvement are factors of the Tilburg Pregnancy Distress Scale. However, there is no common predictive variable other than those three. In addition to this common triad, internalized hostile sexism significantly predicts depression. Moreover, low education and health problems related to pregnancy are significant variables in predicting only anxiety levels but not depression. In this respect, the findings show that there are variables that predict prenatal depression and anxiety in common, as well as different predictors of these two mental health problems observed in the perinatal period.

Discussion: Hostile sexist beliefs of pregnant women are not associated with anxiety but predict perinatal depression.

Key Words: Pregnancy; women's mental health; perinatal depression; sexism; gender discrimination

INTRODUCTION

Sexism is an ideology that includes prejudice or discrimination based on one's sex or gender. On this ideology, social and biological differences between sexes are exaggerated via gender roles. Ambivalent sexism theory is dominantly used in the literature to understand discrimination based on sex and gender (1). The theory implies that sexist ideology may include the belief that one sex is superior to or more vulnerable than another sex and the behaviors linked to these two.

People attribute both positive and negative characteristics to genders during their daily lives. Ambivalent sexism theory emphasizes these two valences. According to the theory, sexism is displayed in two ways: attitudes of mixed content that appear favorable from the outside and hostile attitudes that are negative. Hence, seemingly positive attributions that imply weakness or fragility, named ambivalent and explicitly hostile emotions, beliefs, and behaviors about the sexes, are identified as hostile forms of sexism.

Sexist attitudes are generally defined as beliefs and behaviors that contribute to the protection of exis-

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ting gender inequality in society. On the other hand, sexist practices may be performed by institutions by rules, incentives, or precedents. Moreover, people may internalize discriminatory ideologies per se. In this regard, sexism has three headings (2). These may be listed as interpersonal, institutional, and internalized. The most commonly known form is the former. Stereotypes as nurturer women or leader men are examples of interpersonal sexist attitudes. Practices such as granting parental leave only to women for child care are institutional sexist approaches. Sexism is considered a harmful coping mechanism developed to manage social expectations (3). Moreover, sexism might be a form of self-stigmatization.

It is widely accepted that sexism is more harmful to women. Moreover, results have been repeatedly reported that all three types of sexism are negatively associated with women's mental health. Studies indicated that sexism was positively associated with psychological distress, alcohol, and drug-related consequences (4,5). Also, it's known that sexism is a significant predictor of poor mental health, depression, and anxiety(3,6,7). Study results prove that both exposure to and internalizing sexism are associated with poor mental health.

As the study results show, women are exposed to sexism in explicit or implicit ways throughout their lives and are negatively affected by it (8). This situation poses a significant threat to women's mental health. On the other hand, women have life periods such as pregnancy and postpartum that directly determine the health of future generations. These periods directly affect public health in terms of fetal and newborn health. In this respect, the relationship between sexism and pregnant mental health is a public health issue.

Pregnancy is a period that is viewed positively in many cultures. Studies have shown that women are evaluated more positively during the pro-natal periods (8). However, there are also study results showing that women are exposed to ambivalent sexism during the pro-natal periods. According to the study results, limiting women's choices is significantly associated with both ambivalent and hostile sexism (9–11). Notwithstanding, no study has been found reporting the relationship between sexism and pregnant mental health. It has been emphasized many times in recent years that there are not enough studies on pregnant mental health in the literature (12–14).

Studies conducted in developing countries show that age (15), lack of social support (15,16), marital status (16), past interpersonal traumatic experience (16–18), unintended pregnancy (16), socioeconomic status (16,18), history of psychiatric disorder (17,18), presence of health risk (18), current obstetric complications (15) are prominent risk factors associated with maternal mental health. Literature on pregnant women's mental health also shows that the perinatal mental health of women is closely related to the physical health of the fetus (19) and newborns (20). Moreover, maternal mental health problems have been reported to be associated with the infants' illnesses (21) and the child's emotional development (22). Along with mental health problems, positive mental health during pregnancy is emphasized as a distinct construct associated with improved birth outcomes (23). In a review study, it is reported that maternal positive mental health is related to parenting styles that facilitate a child's future academic achievements and socioemotional function (23).

Pregnancy is a significant transformation process towards motherhood. Women could experience psychological distress, depression, and anxiety in that particular period. However, little is known about if sexist beliefs contribute to women's mental health during pregnancy. Thus, we aimed to examine the relationship between common mental disorders and sexist beliefs among pregnant women.

METHODS

In a cross-sectional study design, we recruited pregnant women admitted to the Gynecology and Obstetrics Outpatient Clinic of Eskisehir Osmangazi University Hospital between February 15, 2021, and April 8, 2021. The Non-Interventional Clinical Research Ethics Committee of Eskisehir Osmangazi University approved the present study (26.01.2021/ 04).

Participants

We recruited pregnant women older than 18 years, fluent in Turkish, who can complete forms alone, and willing to participate in the study. All participants provided informed written consent.

The situation on the COVID-19 pandemic during data collection: The first COVID-19 case was reported on March 11, 2020, in Turkey (24). The same day, the World Health Organization declared the novel coronavirus outbreak a pandemic (25). During the present study's data collection, the total number of COVID-19 cases increased from 2,594,128 to 3,689,866; the number of COVID-19 cases reported daily increased from 7,945 to 55,941; and the daily number of deaths due to COVID-19 increased from 91 to 258 (26).

Variables

Sociodemographic and clinical characteristics: We collected the data of participants' sociodemographic and clinical characteristics using the questionnaire we developed. Participants' age, education level, years of relationship with current partner, and employment status were recorded. Two Likert questions measured perceived economic satisfaction and voluntariness level of current pregnancy: scoring zero meant the worst situation while scoring five equaled the most desired/ best situation. In addition, we registered pregnant women's obstetric characteristics like pregnancy week, health problems related to pregnancy, health problems of the fetus, number of pregnancies, number of living children, and involuntary fetal losses.

Intimate partner violence exposure by current partner: The following three questions aimed to assess psychological, physical, and sexual forms of IPV: "Has your spouse ever insulted or cursed you?", "Has your spouse hit you with a fist or any other object, even once, or has he physically harmed you in any way?" "Has your spouse forced you to have sexual intercourse even once, or has he forced sexual intercourse without your consent?" The answers were "yes" or "no."

Pregnancy-related psychological distress: We utilized the Tilburg Pregnancy Distress Scale (TPDS) to measure pregnancy-related psychological distress. Pop and colleagues developed the scale with two subscales, Negative Affect and Partner Involvement (14). Rising scores are associated with pregnancy-related psychological distress. Among all three trimesters, the TPDS shows satisfactory test-retest coefficients and adequate internal consistency (27). The TPDS is valid and reliable among Turkish pregnant women (28). Scores ≥28 demonstrate pregnancy-related psychological distress (28).

Perceived social support: The Multidimensional Scale of Perceived Social Support (MSPSS)—Revised Form quantifies perceived social support (29). Three subscales evaluate social support from family, friends, and significant others. Eker and Arkar conducted a Turkish validation study of MSPSS (30) and its revised version (31).

Anxiety and depression: The Hospital Anxiety and Depression Scale (HADS) is a self-assessment scale comprising fourteen questions that measure the levels of anxiety and depression in primary health care services (32). The scale is valid and reliable among the Turkish population (33). The anxiety subscale has a cut-off value of 10 points, while the depression subscale has a cut-off value of 7 points, as Aydemir and colleagues calculated for the Turkish version of the HADS (33).

Sexist beliefs: The Ambivalent Sexism Inventory (ASI) measures sexist beliefs. Glick and Fiske developed it in 1996, and Glick and colleagues revised it in 2000 (1,34). Sakallı-Uğurlu performed ASI's Turkish validation study (35). ASI is a 22-item self-report inventory in a six-point Likert style (1=totally disagree, 6=totally agree). Higher scores mean strong sexist beliefs. ASI has two subscales: hostile sexism and benevolent sexism.

Statistical Analysis

Statistical analyses were conducted using SPSS Version 23.0 (Statistical Package for the Social Science). Descriptive statistics for the demographic variables were presented as the frequency/percen-

tage for the categorical variables and the mean and standard deviation for continuous variables such as age. We assessed the normality of the data by examining skewness and kurtosis. Pearson's correlational analysis examined the association between the variables. Two hierarchical multiple regression models with the enter method were used to determine the predictors of depression and anxiety. Variance inflation factor (VIF) was conducted to detect multicollinearity between the variables we examined. All statistical analyses were considered significant, with a p-level of 0.05.

RESULTS

Sociodemographic characteristics

The sociodemographic characteristics of the sample are shown in Table 1.

170 pregnant women, all legally married to men, participated in our study. Sample characteristics are presented in Table 1. The mean age of the participants was 29.54 ± 5.28. Most (65.9%) were unpaid domestic workers, also known as homemakers. 27.6% of pregnant women had a high school degree, while 37.1% had a college degree. The mean value of the pregnancy week was 21.45 ± 8.66. Most women (49.4%) were in the second trimester.

21.8% of pregnant women (n=37) had health problems due to pregnancy or there were health problems with the fetus. While 15.3% (n=26) of the participants had a pregnancy-related health problem, 6.5% (n=11) stated that they had experienced health problems with the fetus. 5.3% (n=9) of the participants had gestational diabetes, 3.5% (n=6) women had gestational hypertension, 2.4% (n=4) had hypothyroidism, 2.4% (n=4) suffered from hypercoagulability, 1.2% (n=2) had none-specific

Table 1. Sociodemographic and clinical variables of the participants (n=170)

Variable		Mean/ Frequency	Standard deviation/ Percentage
Age		29.54	± 5.28
Duration of relationship with current partner (years)		5.30	± 4.01
Education	Primary school	18	10.6%
	Secondary school	34	20.0%
	High school	47	27.6%
	College degree	63	37.1%
	Master's degree or more	7	4.1%
Employment status	Employed	45	26.5%
	Homemaker	112	65.9%
	Unemployed	13	7.6%
Pregnancy week		21.45	± 8.66
Current trimester	First	34	20.0%
	Second	84	49.4%
	Third	52	30.6%
Pregnancy-related health problems	of women	26	15.3%
	of fetus	11	6.5%
	No problem	133	78.2%
Intimate partner violence exposure (lifetime)	Psychological	21	12.4%
	Physical	5	2.9%
	Sexual	2	1.2%
Perceived economic satisfaction (likert question, 0: worst, 5: best)		2.83	± 1.35
Voluntary pregnancy (Likert, 0: least voluntariness, 5: most voluntariness)		4.52	± 1.03
Previous infertility treatment	Yes	19	11.2%
	No	151	88.8%
Pregnancy number	1	59	34.7%
	2	56	32.9%
	3	23	13.5%
	4	17	10.0%
	5 or more	15	8.8%
Number of living children	None	75	44.1%
	1	69	40.6%
	2	20	11.8%
	3 or more	6	3.5%
Number of previous involuntary fetal loss	None	128	75.3%
	1	35	20.6%
	2	7	4.1%

Table 2. Means, standard deviations, and intercorrelations among study variables.

	Mean–SD	1	2	3	4	5	6	7
1. Depression	5.75–3.65	1						
2. Anxiety	7.26–3.97	**.576****	1					
3. Negative Affect	10.85–6.50	**.286****	**.524****	1				
4. Partner Involvement	4.54–3.74	**.504****	**.307****	.043	1			
5. Hostile Sexism	36.0–13.91	**.235****	.108	.030	**.220****	1		
6. Benevolent Sexism	46.14–13.14	**.170***	.119	**.156***	.136	**.492****	1	
7. Perceived Social Support	67.19–16.70	**-.524****	**-.317****	-.072	**-.360****	.006	.099	1

** p < .01, * p < .05.

pain and 0.6% (n=1) women had uterine myoma. Among the pregnancies, 3.5% (n=6) of them had fetal developmental problems, 1.2% (n=2) had threatened miscarriage, 1.2% (n=2) had blood incompatibility, and 0.6% (n=1) had twin-to-twin transfusion syndrome.

Among the pregnant women, 11.2% had previous infertility treatment. 75.8% of the participants had never experienced an involuntary fetal loss. 44.1% did not have any children. The mean value of the self-rated planning of the current pregnancy was 4.52 ± 1.03. Self-rated perceived economic satisfaction mean value was 2.83 ± 1.35.

Prevalences of common mental disorders

According to clinical scale cut-off values, the psychometric prevalences of common mental disorders were calculated. Anxiety was 21.2% (n=36), and depression was 30% (n=51) prevalent. Pregnancy distress prevalence was 7.1% (n=12), its subscale negative affect was 8.8% (n=15), and the partner involvement subscale was 10.6% (n=18).

Correlations

As a result of examining normality, it was seen that our variables were normally distributed; the levels of skewness ranged between -.73 and -1.06, and the levels of kurtosis ranged between -.36 and -1.00. We conducted a correlational analysis to examine the associations of the study variables. As presented in Table 2, depression was negatively associated with perceived social support and positively associated with negative affect, partner involvement, and hostile and benevolent sexism. Whereas anxiety was found to be negatively associated with perceived social support and positively correlated with negative affect and partner involvement ($p < .05$).

Regression

To examine which factors affect depression and anxiety in pregnant women, we carried out two separate hierarchical regressions. Besides the study variables, we added some sociodemographic variables according to the previous research findings. That means age, education, pregnancy weeks, health issues concerning pregnancy, number of living children, and fetal loss were entered in the first step of multiple regression models. Perceived social support, sexist beliefs, and subdimensions of pregnancy distress were entered in the second step of two regression models. For depression, 50.7% of the total variance was explained by the study variables [$F(5, 158)=22.19$, $p<0.001$)]. Sociodemographic variables, except education concerning pregnancy, did not significantly contribute to the explained variance. Accordingly, as the level of education increases, the experience of depressive symptoms decreases (ß =-.25, SE=.26, $p<0.001$). We also found that negative affect (ß =.24, SE= .03, $p<0.001$), partner involvement (ß =.30, SE=.07, $p<0.001$), hostile sexism (ß =.14, SE=.02, $p<0.05$) positively predicted depression whereas, perceived social support (ß =-.38, SE=.01, $p<0.001$) negatively predicted depression in pregnant women (Table 3). Since the VIF values of the variables ranged between 1.11 and 1.67, we

Table 3. Hierarchical regression analysis on depression

Step	B	SE	t	VIF
1				
Age	.010	.05	.13	1.18
Education	-.25	.26	**-3.22****	1.13
Pregnancy week	.02	.03	.23	1.13
Number of living child	.21	.32	2.56	1.30
Number of fetal loss	.10	.38	1.35	1.10
Health problems related to pregnancy	-.01	.67	-.19	1.13
ΔR2	**.160****			
2				
Age	-.03	.04	-.54	1.12
Education	-.09	.22	-1.39	1.31
Pregnancy week	-.01	.02	.82	1.17
Number of living child	.10	.26	1.47	1.49
Number of fetal loss	.06	.30	.99	1.12
Health problems related to pregnancy	-.08	.54	-1.31	1.20
Negative Affect	.24	.03	**4.15****	1.11
Partner Involvement	.25	.07	**3.70****	1.44
Perceived social support	-.38	.01	**-6.09****	1.28
Hostile sexism	.14	.02	**2.14***	1.38
Benevolent sexism	.03	.02	.64	1.62
ΔR2	**.347****			
Total ΔR2	**.507****			

** p < .01, * p < .05.

Table 4. Hierarchical regression analysis on anxiety

Step	B	SE	t	VIF
1				
Age	.009	.06	.09	1.18
Education	-.001	.30	-.01	1.13
Pregnancy week	.08	.04	1.00	1.13
Number of living child	.11	.37	1.32	1.30
Number of fetal loss	.03	.44	.41	1.10
Health problems related to pregnancy	-.12	.78	-1.52	1.13
ΔR2	.046			
2				
Age	-.02	.05	-.30	1.12
Education	.14	.25	**2.09***	1.31
Pregnancy week	.005	.03	.08	1.17
Number of living child	.08	.31	1.04	1.49
Number of fetal loss	-.01	.35	-.16	1.12
Health problems related to pregnancy	-.17	.63	**-2.64****	1.20
Negative Affect	.48	.04	**7.71****	1.11
Partner Involvement	.18	.08	**2.48****	1.44
Perceived social support	-.26	.02	**-3.82****	1.28
Hostile sexism	.04	.02	.63	1.38
Benevolent sexism	.08	.02	1.10	1.62
ΔR2	**.391****			
Total ΔR2	**.437****			

** p < .01, * p < .05.

did not observe any obvious multicollinearity in the model.

For anxiety, we followed a similar analysis as in the depression model. R2 of this model was found at .437, indicating that 43.7% of the variance was explained by the study variables that we entered into regression [F(5, 158)=21.93, p<0.001)]. We found that some sociodemographic variables, in particular, education (ß =.14, SE= .02, p<0.05) and pregnancy-related health problems (ß =-.17, SE= .06, p<0.01) made significant contributions to anxiety. Furthermore, while perceived social support (ß =-26, SE= .02, p<0.001) negatively predicted, negative affect (ß =.48, SE= .04, p<0.001) and partner involvement (ß =.18, SE= .08, p<0.05) positively predicted anxiety in pregnant women (See Table 4). The values of VIF ranged between 1.11 and 1.62, suggesting no obvious multicollinearity in the anxiety model.

DISCUSSION

The present study tested mainly whether sexist beliefs among pregnant women predict depression and anxiety. Results showed that depression was predicted by hostile sexism. In addition, depression and anxiety differed regarding the predictors.

Sociodemographic variables, emphasized in the previous research findings, are considered control variables. Therefore, age, education, pregnancy weeks, health issues peculiar to pregnancy, number of living children, and number of fetal losses were entered in the first step of multiple regression models as control variables both in depression and anxiety models. When the first model run with control variables for depression and anxiety is examined, it is seen that only depression is negatively predicted by education level. This result means that depression, but not anxiety, decreases as the level of education increases. When the second model was carried out with the variables whose predictive power was tested in this study in addition to the control variables, it was seen that the predictive variables for depression and anxiety were different again. In the second model, negative affect, partner involvement, and perceived social support significantly predict both depression and anxiety. Whereas negative affect and distress related to a pregnant woman's relationship with the partner increases both depression and anxiety increase; as perceived social support increases, both depression and anxiety decrease. However, there is no common predictive variable other than those three. Instead, in addition to this common triad, hostile sexism significantly predicts depression. On the contrary, low education and health problems related to pregnancy are significant variables in predicting only anxiety levels.

The most important result of the study is that sexist attitudes of pregnant women, particularly hostile sexist beliefs, are related to perinatal depression. Since sexism is an ideology that claims women are inferior, internalizing hostile prejudices toward women affects their mental health. Sexism is the most common form of discrimination that harms almost half of the world's population. Hostile sexism containing microaggressions might reduce females' well-being when internalized. It is shown that exposure to gender discrimination is related to low self-esteem and internalized gender inferiority in different cultures (36).

Several researchers stated that exposure to sexist discrimination harms the mental health of women, Causing adverse effects such as anxiety and depression during the postpartum period (37). Research that studied workplace gender discrimination discovered that it was related to depression, especially among young women (38). Moreover, it is reported

that organizational and interpersonal sexism exposure is associated with depression, anxiety, and stress (39).

Compared to the adverse mental health effects of sexist discrimination exposure, sexism, and mental health are less studied. Researching among a large community sample, it is found that having hostile sexist attitudes predicted depression, anxiety, and stress among women and men (6). Among perinatal fathers, hostile sexism was found to be related to depression (40). However, there are contradicting results saying that anxiety and depression as mental health outcomes were not significantly related to sexism among young women aged between 18 and 25 years (41). Additionally, a mother-daughter study showed no significant relationship between sexism and mental health (3). On the other hand, it is put forward that sexism might moderate the relationship between sexist discrimination exposure and mental health (3). Those differences may be rooted in the complexity of the relationship between sexism and mental health.

While there are insufficient results to make comparisons between sexism and mental health in pregnancy, negative affect, partner involvement, and perceived social support are commonly reported with mental health issues. Also, the results regarding the latter triad are solid. It is known that positive partner involvement and perceived social support are related to mental health positively not only during pregnancy but also in general. Likewise, negative affect is positively correlated to depression and anxiety during pregnancy and in general. Results in this study yielded that both depression and anxiety are consistent with the literature regarding negative affect, partner involvement, and perceived social support.

It is seen many results in the literature regarding sociodemographic variables linked to pregnant mental health, such as age (15,42), education (18,42), pregnancy weeks (43), health issues peculiar to pregnancy (15,18), number of living children (44), and number of fetal losses (45). Findings for anxiety suggest that pregnancy-specific anxiety is higher in earlier pregnancy weeks, those with prior loss, and health issues peculiar to pregnancy (46–48). Also, it is reported mainly that young maternal age and poor education are related to perinatal depression (49,50).

However, results for sociodemographic variables in this study, both in depression and anxiety, are twisted. Among the sociodemographic variables, education has a significant predictive power only in depression. Notwithstanding, for the anxiety model, when entered into the model together with the variables tested in this study, sociodemographic variables of education and health problems related to pregnancy were also found to be significant. This result indicates that sociodemographic variables found to be significant in the literature have predictive power only when other pregnancy-related stressor variables, such as partner involvement, are added. Possible reasons for the skewed result regarding sociodemographic variables may be that previous studies considered the correlation of the variables in question rather than their predictive power or that the variables were included in the regression models one by one instead of a cluster.

It is seen that the variables used in this study as sociodemographic control variables are reported in the literature with WEIRD (White, educated, industrialized, rich, democratic) samples dominantly (51). Hence, this study makes an important contribution to the literature, primarily regarding its application in a predominantly Muslim sample with a low-middle socioeconomic level. Also, one other reason why the results regarding the variables used as control variables, such as age, education, pregnancy weeks, health issues peculiar to pregnancy, number of living children, and number of fetal losses, are not precisely consistent with the literature may be the sample selection. This situation might also be considered as a limitation of the study. In this respect, it is recommended that samples with culturally different characteristics be examined comparatively in future studies.

Health during pregnancy and the infant's health is a public health issue. In this regard, producing information to improve health conditions during pregnancy is important to public health. On the other hand, mental health during pregnancy has been negated for many years (13). In terms of

addressing pregnancy from a mental health perspective, this study is a prominent effort to fill the gap in the literature.

Another significant contribution of this study to the literature is regarding the imaging of intimate partner violence during pregnancy. Pregnancy is depicted as a particularly vulnerable period for intimate partner violence in terms of changes in physical, emotional, social, and economic demands and needs. Additionally, at the same time, this period allows monitoring the violence due to regular contact with healthcare providers (52). Therefore, intimate partner violence was questioned, although it was not the main subject of this study.

The strength of the study is testing sexism's effect on perinatal mental health while controlling for the common factors, including pregnancy distress. Besides, the study uses data from low- and middle-income Muslim countries, which are relatively less studied. Despite its strengths, the study has limitations. The cross-sectional nature of the study limits the interpretation of the results. The study did not use structured scales to measure intimate partner violence, which harms women's mental health across the lifespan. That may result in false negative intimate partner violence responses of the participants. A further limitation of this study is related to the measurement tools. Different measurement tools for sexism exist in the literature (2). In this study, sexism was measured through Glick's conceptualization. This theory does not offer specific explanations for sexism. On the other hand, this is the generally used theory for sexism. In future studies, research designs can be created in which both measurement tools are used together.

The present study shows that among sociodemographic variables, only education predicts both depression and anxiety. However, the significant effect of education is not in the same direction for depression and anxiety. As the level of education increases, depressive symptoms decrease, but anxious symptoms increase. Three common variables predict both depression and anxiety. These are negative affect, partner involvement and perceived social support. Additionally, hostile sexist attitudes of pregnant women are not associated with anxiety but predict perinatal depression among Turkish pregnant women.

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Data availability: The data is available upon reasonable request.

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