

Psychological factors in the etiology and treatment of severe nausea and vomiting in pregnancy

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The assumption is frequently made that women with severe nausea and vomiting during pregnancy are transforming psychological distress into physical symptoms. Psychoanalytic theory supporting this assumption is reviewed, along with the few methodologically flawed empirical studies that have been conducted. Little support can be found for the hypothesis that nausea and vomiting during pregnancy is such a conversion disorder, but there are suggestions that psychological responses to the physiologic condition(s) underlying this problem may become entrenched, or conditioned. This possibility is supported by findings that psychological treatments, such as hypnosis, can be effective. This implies that psychological responses can interact with the physiology of nausea and vomiting during pregnancy to exacerbate the condition. As such, psychological treatments for the symptoms of this disorder need to be further explored. (Am J Obstet Gynecol 2002;186:S210-4.)

Key words: Nausea and vomiting in pregnancy, psychoanalysis, conversion disorder

Severe nausea and vomiting of pregnancy (NVP) that results in the need for intravenous rehydration occurs in 0.5% to 2% of all pregnancies.^{1,2} The condition results in a variety of symptoms that threaten the health of the mother and fetus, including weight loss, malnutrition, electrolyte imbalance, ketosis, and Wernicke's encephalopathy. The etiology of NVP is elusive, leaving the current state of knowledge much the same as when Kemp³ described the condition as "a disease of theories." Several biological theories are plausible, but psychological theories also exist. This paper will review and critique psychological theories proposed to contribute to the etiology of NVP and will discuss psychological approaches to its treatment.

The longest standing, and possibly most pervasive, theory for the etiology of NVP stems from the field of psychoanalysis. NVP is described as a conversion or somatization disorder.^{1, 2, 4-7} Conversion disorders can be broadly defined as transformation of purely psychic trauma into physical symptoms. The individual attempts to control an overwhelming psychic disturbance by converting it to physical symptomatology. This psychodynamic process is part of the diagnostic condition of hysteria. Hysteria is characterized by emotionality, attention-seeking, seductiveness, dependency, helplessness,

self-dramatization, a chameleon-like personality, and sexual problems. The physical symptoms associated with hysterical conversion reaction produce primary and secondary gain.

Psychoanalytic theorists have described pregnancy as a period during which women are highly susceptible to conversion disorders, as well as other psychiatric conditions. Pregnancy has been described as a time when past trauma is likely to be manifested through physical and psychological symptoms⁸ and as a maturational crisis when the expectant mother's self perception and perception by her family change.⁹ Psychoanalytic theory emphasizes the pregnant woman's relationship with her own mother, both present and past. Pregnancy is a time of separation and individuation, gender identity, and identification by the pregnant woman with her own mother.⁸ The nature of the relationship between mother and pregnant daughter is viewed as essential to the adjustment of the daughter during pregnancy. The expectant mother projects the image of her own mother onto the fetus and is likely to accept or reject the fetus based on the image she has of her mother.¹⁰

The psychoanalytic literature also describes vomiting as a psychosomatic symptom. Vomiting has been considered a hysterical defense against unconscious wishes¹¹ and a communicative function that expresses unconscious feelings.

These conceptualizations of pregnancy and vomiting are the foundation of a detailed psychoanalytic interpretation of NVP. Descriptions of NVP as a neurotic conversion disorder date back to the work of Kaltenbach¹² who reported that NVP was allied to hysteria. Other theorists assert that the mother is attempting to expel the fetus

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orally.¹³ This line of thinking argues that oral impregnation often serves as a childhood explanation of the cause of pregnancy that in turn leads to attempts to expel the pregnancy in the same way. Thus, vomiting reflects the mother's disgust with the pregnancy and allows her to reject it without feelings of guilt.²

As described above, pregnancy is a time when the relationship with one's own mother is thought to determine the pregnant woman's views toward her fetus. If the relationship with her mother is conflictual, the trauma is likely to be somaticized. NVP becomes an unconscious mechanism by which the pregnant woman rejects her own mother through the fetus.^{5, 14} It has also been proposed that NVP is a symptom of the pregnant woman's dissatisfaction with her relationship with her husband.⁷ The claim is that the woman expresses unconscious negative feelings about the marriage through vomiting.

Support for a psychoanalytic interpretation of NVP relies largely on case studies, clinical interviews, and anecdotal evidence. Robertson¹⁵ interviewed 100 pregnant women and reached the conclusion that those with NVP were characterized by dysfunctional relationships with their mothers. Further, they were termed frigid, and it was suggested that the severity and duration of symptoms were directly related to the frequency of undesired and unappreciated coitus. The author concluded that effective treatment might require that the woman be removed from propinquity to her husband and mother. This therapeutic option was deemed ineffective¹⁶ and has been, it is hoped, universally abandoned. Menninger¹⁷ concludes from a series of case studies that women with severe NVP rejected femininity. Grace and Graham,¹⁸ studying 11 women with severe NVP, found that vomiting occurred specifically when they were "throwing off something she wished had never happened." These women were also "preoccupied with their mistakes."

Several studies have used case-control designs. Harvey and Sherfey¹⁹ interviewed 34 women with NVP and 34 matched controls. Symptoms that occurred more frequently in the NVP group were early gastrointestinal disorders, failure to attain orgasm, frigidity, and dysmenorrhea. Harvey identified 4 diagnostic groups among women with NVP: hysteria, immaturity with no specific neurotic symptoms, organic brain disorders with low IQ, and severe personality disorders (paranoid, psychopathic). Fitzgerald⁵ assessed 86 women in their first trimester with the Goldberg Standardized Psychiatric Interview. Women with NVP reported unplanned pregnancies, undesired pregnancies, and ambivalent or negative relationships with their husband more frequently than women without NVP. In the only longitudinal study reported, Guze et al²⁰ conducted a 3.5-year follow-up of women with severe NVP and controls. Relying on psychiatric interviews, they reported the presence of hysteria in 15% of women with NVP and 2% of controls.

Fairweather⁴ conducted the most salient work in the psychology of NVP. Forty-four women with NVP were compared with 49 asymptomatic pregnant women. Psychiatric interviews were conducted for all women with NVP, the Minnesota Multiphasic Personality Inventory (MMPI) was given to an undefined proportion of women with NVP, and the Cornell Medical Index was administered to 22 women with NVP and all control subjects. There were no significant differences between subject groups on the Cornell Medical Index. No results are reported for the MMPI. Yet, based on interviews and unreported results, Fairweather⁴ concludes that women with NVP exhibit an "infantile, or immature personality associated with hysteria." He reports this condition exists in 75% to 80% of all women with NVP.

Based on these studies, the validity of the theory that NVP stems from a conversion disorder is questionable at best. These studies are fraught with possibilities for bias. Only 1 study has used a measure of personality that does not use unblinded examiner assessments of some type. Fairweather⁴ used the MMPI, an objective measure of long-standing personality traits based on patient responses to an extensive series of questions. However, this study did not administer the MMPI to pregnant controls, nor does it report any statistical information from the MMPI. There is only 1 longitudinal study (Guze et al²⁰), and it relies on unblinded interviews. Further, a study by Tylden¹⁶ found that pregnant women with psychiatric conditions showed a lower incidence of vomiting.

A recent study by Simpson et al²¹ challenges the notion that NVP is more common among women who have a long-standing conversion disorder. This study used the MMPI-2, and the Symptom Checklist-90 Revised (SCL-90-R), in 2 separate protocols. In the first, the MMPI-2 and SCL-90-R were given to 9 women with and 10 without NVP between their ninth and fourteenth weeks of pregnancy. In the second protocol, 10 women who did and 12 who did not have NVP during their most recent pregnancies were given the same tests. The average time since parturition was 16 months. All women in the second protocol were tested on the second or third day of their menstrual cycles to control for any variations in mood associated with hormonal fluctuations. All subjects from the first protocol were recruited for the second; however, only 4 (3 with NVP) agreed to participate in the second protocol.

In the first protocol, women with NVP showed significant elevations compared with the women without NVP, on the Hypochondriasis and Conversion Hysteria scales from the MMPI-2 and on the Somaticization scale from the SCL-90-R. These scales are associated with conversion disorder. All women with NVP had elevations on these scales at a level suggestive of clinically relevant disturbances. Women with NVP also showed greater disturbances than pregnant women without NVP in the areas of

depression (MMPI-2 Scale 2; SCL-90-R Depression Scale), anxiety (MMPI-2 Scale 7; SCL-90-R Anxiety Scale), psychoticism (MMPI-2 Scale 8), and obsessive-compulsive characteristics (SCL-90-R Obsessive Compulsive Scale).

In the second protocol there were no significant differences between women who had NVP in their most recent pregnancy when compared with women who did not have NVP during their most recent pregnancy. A likely explanation for the psychological symptoms associated with NVP during pregnancy is the severe, enduring, and incapacitating physical symptoms they experience. As Bogen²² suggests, NVP “could subject any normal expectant mother to stress sufficient to trigger adjustment disorders, generalized anxiety or even depressive episodes.” These findings support this assertion.

The effect of stress on pregnant women also has been explored as a possible cause for NVP. Reactions to stress during pregnancy can clearly be somatic and include vomiting. Vomiting is often a physical reaction to stress.¹¹ There is limited support for the hypothesis that stress may trigger NVP, however. Martin²³ found that women with high levels of anxiety during pregnancy had more somatic complaints, including vomiting, than controls. Georgas et al²⁴ found that vomiting during pregnancy was related to emotionally disturbing events. Iatrakis et al⁷ administered a “specially constructed questionnaire” to 102 women in their first trimester and found NVP to be associated with stress, lack of information about pregnancy, and poor communication skills. Living in overcrowded or unfamiliar circumstances has been linked to the development of NVP.¹

However, as with the studies on NVP as a conversion disorder, these studies do not consider the likelihood that stress may be the result of NVP, not the cause. Further, numerous studies do not find differences in social factors related to stress, such as marital status, whether the pregnancy was planned,²⁵ or positive feelings about the pregnancy.²⁶ Social support may mitigate the negative effects of stress²⁷ during pregnancy. The relationship the pregnant woman has with her husband may be of particular importance in buffering the negative physical and psychological effects of stress.²⁸

It also has been argued that women’s own coping skills play a role in NVP, based on findings that emesis may diminish with hospitalization, residing in the home of the mother, or receiving visitors in the hospital.^{2, 7, 13, 14} NVP has been argued to reflect immature coping mechanisms. As stated by Iancu et al,⁶ “Vomiting is a learned behavior which enables the patient to avoid or escape an intolerable and stressful situation.”

A final psychological explanation offered for NVP is that women with NVP are highly susceptible to suggestion. Apfel et al²⁹ found that 17 subjects with NVP were significantly more hypnotizable than 13 control women. NVP may result from increased susceptibility to environmental cues that trigger emesis.^{30, 31} This increased suggestibility

may lead to the rapid development of vomiting as a conditioned response to specific environmental triggers. Much of the support for this hypothesis comes from studies of vomiting as a conditioned response to chemotherapy. Many cancer patients treated with chemotherapy develop anticipatory vomiting.³² This is an example in which vomiting initially develops in response to a physical condition but then is exacerbated by one’s psychological reaction to the physical stimuli. The success of behavioral interventions³³ supports the presence of a psychological component in anticipatory vomiting. It is possible that NVP represents a similar instance of conditioned vomiting. Women with NVP may begin to vomit in response to a specific physiologic condition. Vomiting may then become a conditioned, anticipatory response that resists extinction.

The hypothesis that NVP may involve some degree of conditioning is given further support by reports that emesis is decreased with the use of hypnosis. Hypnosis is a set of procedures by which a hypnotist suggests that a person experience change in perception, sensation, cognition, or control over motor behavior. A limited number of uncontrolled studies have shown hypnosis to decrease vomiting in patients undergoing chemotherapy^{34, 35} and to decrease anticipatory vomiting with chemotherapy as well.³⁶ Given the suggestion that women with NVP are highly hypnotizable, it is reasonable that hypnosis may diminish any conditioned aspect of NVP. In the largest study to date, Fuchs et al³⁷ enrolled 160 women with severe NVP who did not respond to conservative treatment (antiemetic drugs, isolation through hospitalization, intravenous rehydration) from which 138 women participated in hypnotherapy. Eighty-eight percent ceased vomiting after 1 to 3 hypnosis sessions. It could not be determined, however, whether this improvement was a result of the course of pregnancy. The literature on hypnosis currently lacks the needed methodologic rigor, but there is certainly enough theoretical plausibility and preliminary data to warrant controlled trials of the effectiveness of hypnosis in the treatment of NVP. The lack of negative side effects also adds to the appeal of hypnosis in the treatment of NVP.

A limited number of studies suggest that more traditional psychotherapeutic approaches have some efficacy in the treatment of NVP. Callahan et al³⁸ report success using a behavioral approach with 4 patients. This form of treatment had the patient identify specific events that either preceded or followed vomiting, which, the authors state, generally led to the recognition of critical events. Intervention then sought to change the antecedents and consequences of vomiting. Imagery³⁹ and psychotherapy⁴⁰ also have been reported to be successful in the treatment of NVP.

The literature available on the psychological causes of NVP does not seem to warrant its widespread acceptance as a conversion disorder/psychosomatic process. For example, in the International Statistical Classification of Dis-

eases and Related Health Problems (ICD-10) classification of Mental and Behavioral Disturbances in Category F50.5 (Vomiting Associated with Other Psychological Factors), it is stated that “in pregnancy emotional factors may contribute to recurrent nausea and vomiting.” The category also includes “psychogenic hyperemesis gravidarum.” Empirical studies have yet to establish this.

Given the lack of methodologically sound studies that establish a psychological component—particularly a psychosomatic one—in NVP, one is left to consider other reasons for the pervasiveness of this assumption. A medical gender bias resulting in the frequent misdiagnosis of women with psychological disorders, particularly psychosomatic disorders, may contribute to the conceptualization of NVP as a psychosomatic disorder. Mowbray⁴¹ asserts that women “are reported by physicians to have more psychiatric problems, psychosomatic complaints, and unexplained symptoms.” Hoppe⁴² attributes this to the fact that more than half of all medical patients are women, whereas the majority of their physicians are men. Hoppe also cites evidence that physicians, even when faced with a menstrual or reproductive disorder that has an established physiological etiology, attribute hysterical features to the aggravation of such a disorder.

It is certainly premature to conclude that there are no psychological aspects of NVP. The seeming success of hypnosis and other psychotherapeutic approaches in treating NVP suggests an interaction of biological, psychological, and sociocultural factors. It is becoming increasingly clear that biological factors predispose a woman to NVP. To conclude, however, that NVP represents either a purely biological or psychological disorder would be to disregard the intricate relationship between these factors. The unparalleled physiologic changes associated with pregnancy inevitably interact with each woman’s psychological state and her cultural values in a unique manner. Such an interaction, however, is much different than the ill-supported assumption held by many that NVP stems from a particular psychological state. To accept the assumption that NVP results from some character flaw is yet another example of placing blame on the victim. Further information is needed to fully understand the interaction of factors underlying NVP; however, women with NVP definitely experience substantial psychological distress. Recognition of this distress as a real phenomenon, as well as provision of an emotionally supportive environment, is a clear starting point for treating these individuals.

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