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Chicken or the egg? The biological–psychological controversy surrounding hyperemesis gravidarum

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Abstract

Women's somatic complaints are more likely to be labeled by physicians and other health care professionals as psychologically based when the condition has an obscure etiology. Perhaps because of this, there are a number of medical conditions which have been underinvestigated and where erroneous assumptions about them exist. Hyperemesis gravidarum (HG)—severe nausea and vomiting during pregnancy—is an example of such an illness. HG remains a puzzling condition for both physicians and patients because there is no known cause or cure. By its very nature, HG has a clearly established biological cause—pregnancy. Yet, because the exact causal pathophysiological mechanism is unknown, the organicity of the pregnant state is either minimized or ignored. This paper examines how HG is characterized in the literature and the empirical basis for psychogenesis. Analysis of the literature reveals a tension in the discourse such that both biologic and psychologic approaches to HG have existed in parallel tracks throughout history. Still, results support that sociocultural factors rather than scientific evidence have shaped the overarching and predominant illness paradigm of psychogenesis. Implications for women's health care and HG, in particular, are presented.

Keywords: Hyperemesis gravidarum; Pregnancy complication; Social construction of illness; Psychogenic attribution

Introduction

The increasing integration of social science knowledge into medicine has led to the consideration of both social and psychological as well as biological factors in the etiology and treatment of physical illness and disease. This shift away from a theory of biological primacy that ignores the role of social and psychological factors (Hamilton, 1993) toward more holistic perspectives was indeed warranted. Still, has the pendulum swung too far? Under conditions of medical uncertainty, psychogenic explanations for illness are often made to the exclusion of possible biological considerations. For example, women presenting with symptoms characteristic of interstitial cystitis are frequently labeled with the psychiatric diagnosis of somatization disorder, which results in subsequent mistreatment of the disease (Webster, 1993). Persons (mostly women) with fibromyalgia and chronic fatigue syndrome (CFS) find that their symptoms are often belittled or ignored (Clarke, 2000; Hart & Grace, 2000); the conditions are viewed as psychogenic in nature (Richman, Jason, Taylor, & Jahn, 2000). Richman et al. (2000) contend that medical conceptualizations of CFS may "eventually parallel the transformations that occurred in relation to multiple sclerosis...the discovery of biological markers for CFS may lay to rest the categorization of CFS as largely within the psychiatric realm" (p. 173).

The "default" toward psychogenic causal explanations in instances of obscure etiology certainly affect both women and men, however, this seems to occur more frequently with female patients. This phenomenon is described as psychologization in which "female illness is socially constructed as erroneously or disproportionately embracing psychiatric or sociocultural contributors" (Richman et al., 2000, p. 178; Blaxter, 1983). Women with reproductive disorders (e.g., premenstrual symptoms, dysmenorrhea, pelvic pain with unknown etiology), in particular, experience the impact

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of gender stereotypes and attitudes especially when medical professionals are unable to uncover the specific etiology of the condition (Nadelson & Notman, 1990; Stellman, 1990). Clinical observation and a review of the literature suggest that hyperemesis gravidarum (HG) is an example of such a problem (Bogen, 1994; Munch, 1991).

HG—severe nausea and vomiting during pregnancy—was characterized as a "diagnostic and therapeutic enigma for the obstetrician" by Starks (1984, p. 253). HG remains a puzzling condition because there is no known cause or cure. Before the use of intravenous (IV) fluids, HG was a significant factor leading to neurological disturbance and even maternal death (Cowan, 1996). Advancements in IV fluid therapy have greatly reduced the risk of these outcomes.

Unfortunately, health care professionals (HCPs) (e.g., nurses, physicians, psychiatrists, psychologists, social workers) often view the condition as something of a nuisance. Some contend that patients with HG "garner little attention and engender little sympathy from their physicians (Abell & Riely, 1992, p. 835). Another factor contributing to such a view may be that biologic and psychologic theories about the etiology of HG remain areas of considerable controversy. Although it seems illogical to suggest that HG is never impacted by or a result of psychologic factors, HCPs who presume a psychogenic etiology in HG may discount or minimize the severity of symptoms and the full impact of the illness on the woman's quality of life (O'Brien & Naber, 1992). This, in turn, can contribute to a less than optimal patient–physician relationship, as well as poor maternal and infant outcomes.

HG can also be an expensive obstetric problem. Despite its low incidence, HG may entail frequent multiple admissions to the high-risk antenatal unit (Godsey & Newman, 1991) and utilization of medical treatments such as total parenteral nutrition (Charlin, Borghesi, Hasbun, VonMulenbrock, & Moreno, 1992). Moreover, there is some evidence to suggest that women who suffer from severe HG during early pregnancy are more likely to give birth to low birth weight infants (Chin & Lao, 1988), risking costly neonatal and pediatric treatment. Although technological advancements have virtually eliminated death from HG, the condition warrants serious attention because of its potentially severe effects both to the mother and her baby (Callahan, Burnette, DeLawyer, & Brasted, 1986).

The fact that HG is an established medical diagnosis with diagnostic markers (ICD-9-CM, Practice Management Information Corporation, 1997) poses a central paradox. Unlike conditions such as CFS, HG by its very nature has a clear, established biological cause—pregnancy. Yet because the exact pathophysiological mechanism and cure is unknown, the organicity of the pregnant state is either minimized or ignored, echoing works by scholars who contend that the female reproductive system has been and continues to be negatively impacted by gender bias. It is also somewhat paradoxical, I would argue that HG remains suspect for psychogenicity while its less severe counterpart, nausea and vomiting of pregnancy (NVP) is considered normal and common today.

It is my thesis that under conditions of obscure etiology and absence of cure, physicians and other HCPs tend to explain HG in psychogenic terms which parallels other somatic complaints, especially female medical conditions. I will argue that this occurs despite a lack of empirical support that substantiates neither a specific psychologic or biologic pathophysiological mechanism, and that sociocultural factors rather than scientific evidence have shaped the discourse in the literature on HG as primarily a psychogenic disorder. To this aim, an exhaustive literature search on HG was conducted using Medline and social science data bases with the purpose of examining (a) how HG is characterized in the literature and (b) the empirical basis for psychogenesis. Articles specifically discussing HG in the NVP literature were also examined, although an exhaustive search was not possible due to the large amount published in this area. My interpretations of the centuries of thinking about HG draw upon literature in anthropology, medicine, nursing, sociology and psychology and are shaped by feminist theoretical perspectives.

Definition and epidemiology

One of the classic diagnostic symptoms of pregnancy is "morning sickness" (Williams, 1923), which is also commonly termed NVP (Deuchar, 1995). Historically, nausea was believed to be the result of resentment and ambivalence of women ill-prepared for motherhood (Corea, 1977). Today, mild to moderate NVP is considered normal and common (O'Brien & Naber, 1992), encompasses mild symptoms of nausea and vomiting during the first trimester of pregnancy (occurrence throughout the pregnancy is the exception), and generally disappears by the 12th–16th week with nutritional status and weight not seriously affected. The reported incidence in American women ranges from 50% to 80% (Katon, Ries, Bokan, & Kleinman, 1980–81) and from 50% to 90% (Abell & Riely, 1992) of all pregnancies.

In contrast, HG or "pernicious vomiting of pregnancy" (Williams, 1923) occurs when uncomplicated NVP become intractable (Starks, 1984). The condition is characterized by symptoms of such severity as to require hospitalization and/or extensive outpatient treatment and includes, but is not limited to, symptoms of dehydration, electrolyte imbalance, weight loss often greater than 5% of body weight, and ptyalism (Abell &

Riely, 1992). Like NVP, HG is a disorder of the first trimester of pregnancy; its onset occurs between the 4th and 10th weeks and typically resolves by the 20th week, with rare cases persisting well into the second trimester (Abell & Riely, 1992). The typical illness course includes a gradual recovery, frequent relapses, multiple episodes of inpatient management, and/or the use of home health care services, such as IV hydration (Naef et al., 1995).

The incidence of HG ranges from estimates of 1–3 cases per 1000 (Charlin et al., 1992) to 1–10 cases per 1000 pregnancies (Katon et al., 1980–81) in the United States and European societies. Cross-culturally, the incidence reported for Chinese women is within the range reported for European countries (Chin, Lao, & Kong, 1987). In the US, epidemiological studies have shown that the overall rate of HG has decreased since 1983, yet the severity appears to have increased (Erick, 1995). In 1956, the American Council on Pharmacy and Chemistry developed the definition of HG and its symptoms (Fairweather, 1968).

Theories of etiology and treatment approaches

Biologic theories

Examples of proposed biochemical or hormonal theories include elevated human chorionic gonadotropin levels and vitamin B6 deficiency (Eller & Randall, 1945), thyroid toxicosis (Kimura et al., 1993), elevated estrogen levels (Dupue, Dernstein, Ross, Judd, & Henderson, 1987), allergic reaction to the corpus luteum of pregnancy (Rosen, 1955), and hyperolfactation (Erick, 1995). Medical treatment encompasses either one or a combination of the following interventions: restricted diet (Anderson, 1994), IV fluid therapy (Zimmerman & Strauss, 1989), nasogastric tube (Gulley, VanderPleog, & Gulley, 1993), and total parenteral nutrition (Boyce, 1992). Antiemetic medications such as compazine, vitamin B6, and phenergan have been used with variable success. Recently, researchers have investigated the use of oral corticosteroids (Nelson-Piercy & DeSwiet, 1994), herbal remedies such as ginger root (Fischer-Rasmussen, Kjaer, Dahl, & Asping, 1990), acupressure (Belluomini, Litt, Lee, & Katz, 1994), and electrical stimulation of the vestibular system based on the theory that HG resembles the symptoms found in motion sickness (Golaszewski, Frigo, Schaller, & Mark, 1994).

Psychologic theories

Theories of psychogenesis have been rooted primarily in psychoanalytical theory. Traditional psychodynamic theory purports that a pregnant woman's vomiting may represent various intrapsychic conflicts. The pregnant woman's vomiting has been associated with neurotic tendencies (Atlee, 1934), hysteria (Fairweather, 1968), and as a symbolic rejection—an unconscious, oral attempt at abortion (Chertok, 1972). An ambivalent attitude (versus a marked rejection), representing conflict between wanting and rejecting the baby, also has been implicated (Chertok, 1972). Menninger (1939) thought NVP represented a rejection of femininity. Harvey and Sherfey (1954) implicated sexual frigidity and psychological immaturity in the etiology of HG. Others reported cases in which HG is sometimes manifested as a conversion disorder (El-Mallakh, Liebowitz, & Hale, 1990), is generally believed to be associated with psychopathology (Iancu, Kotler, Spivak, Radwan, & Weizman, 1994), or a result of psychosocial stressors (Tylden, 1968). A number of psychological interventions have been advanced for treating patients diagnosed with HG, such as extended psychotherapy (Henker, 1976), brief psychotherapy (Zechnich & Hammer, 1982), hypnosis (Simon & Schwartz, 1999), behavior modification (Callahan et al., 1986), relaxation training (Simone & Long, 1985), and biofeedback (W. Barcy, personal communication, October 25, 1990).

The etiologic controversy: a closer look

The historical discourse

The vast majority of scholarly literature about HG has been published by male physicians primarily in the medical specialties of obstetrics and family practice; scant literature exists in the domains of nursing, psychology, social work, and other medical specialties of psychiatry and nutrition. Fairweather (1968) provided a comprehensive historical review of NVP and HG, noting documentation of vomiting in an Egyptian papyrus dated 2000 BC, by Hippocrates some 1700 years later, and in an early Greek obstetric reference entitled *Soranus' Gynecology*, written by the early second century Roman physician, Soranus. Since HG was a significant factor leading to neurologic disturbance and even maternal death, the prevailing belief among early physicians was that HG was a biologically-based illness to be taken seriously.

In the early twentieth century, numerous diagnostic classifications of HG were proposed, which included psychiatric factors. For example, a popular obstetric text distinguished between two types of pernicious vomiting: neurotic and toxemic (Williams, 1923). Neurotic vomiting was viewed as the more common of the two and treatable by suggestion to alleviate the "nervous condition" (Williams, 1923, p. 579). The toxemic type was considered very serious, with a rapid course and grave prognosis. The condition was often fatal; attempts to induce abortion in order to save the life of the woman were often performed too late.

Williams stated, "A certain proportion of cases will die no matter what may be done" (p. 585). Essentially, biologic attributions were used to explain why women died from HG; yet for those who lived, psychogenic explanations were typically given.

At least two main factors appear to have influenced medicine's early illness paradigm of biogenesis toward a predominant paradigm of HG as mostly psychogenic in nature. First, the use of modern IV fluid therapy for NVP and HG occurred some time between its introduction for adult patients in the 1920s (Zimmerman & Strauss, 1989) and for pregnant patients around 1945 (Eller & Randall, 1945). IV fluid hydration therapy addressed the issue of dehydration and helped to keep women alive, but it did not necessarily stop the nausea and vomiting associated with HG. Once the concerns of dehydration were addressed and maternal morbidity and mortality were no longer a primary concern, HG was viewed more as a nuisance, and psychodynamic theories were looked to for explanations for this illness.

Second, psychoanalytic theory was gaining popularity at about the same time that medicine advanced the discovery of IV fluid therapy. The "psychotherapeutic movement" that began in Europe in the middle 1860s was in vogue by 1914 in the United States, with analysts such as Karl Menninger dominating the American movement into the late 1930s (Hale, 1971). Psychoanalytic theory infiltrated perspectives on women, femininity, sexuality and child bearing. A specific branch of medicine—psychiatry—then began to address the issue of the origins of HG. In a paper read before the Berlin Obstetrical Society in 1890, Kaltenbach, a German physician, was the first to suggest that vomiting of pregnancy is usually a manifestation of neurosis (Fairweather, 1978). However, it was the landmark study by physician Denys Fairweather of London, England—the most frequently cited in the NVP and HG literature—that embedded the presumption of psychogenic factors of moderate to severe NVP into the scholarly literature (O'Brien & Newton, 1991).

Opposition to the psychogenic explanation arose as early as 1929, when Peckham cautioned physicians to avoid assuming a neurotic element for fear of overlooking a potentially dangerous physiological condition. He concluded that it is difficult to conceive a neurotic etiology in patients who begin to vomit before a menstrual period has been missed, thereby being unaware of their pregnancy. Social psychological theories attempted to shift the paradigm from viewing vomiting of pregnancy as a predominately psychiatric illness to that of a response to psychosocial stressors such as poverty and marital conflict (Tsoi, Chin, & Chang, 1988; Tylden, 1968). Acknowledging the role of psychosocial stressors avoids the view that HG results from the inadequate personality (e.g., immature or ill-prepared for motherhood) of the pregnant woman. However, this position still advocates a theory of psychogenesis by suggesting that the etiology of HG is due to the pregnant woman's inability to cope with environmental stress. For example, based upon a case study of four hyperemetic women, Katon et al. (1980–81) concluded that the hospitalized hyperemetic woman seeks a "time out" from a stressful world. In sum, the discourse in the HG literature corroborates the work of O'Brien and Newton (1991) who provide an excellent historical analysis of beliefs and prevailing theories of etiology of NVP. The authors document the evolution of attitudinal shifts from the Somatic era (until 1920) to the Intrapsychic era (1930–1980), to our current Metabolic and Social Stress era (1981-present).

Over the years, HCPs have offered a variety of recommendations on how best to interact with HG patients. A supportive approach was described by Peckham (1929). He recommended that physicians rule out a physical cause for the vomiting, sensitively inquire about possible fears or personal problems that may be affecting the patient, and provide reassurance without minimizing the patient's illness experience. In contrast, the belief that HG is a psychosomatic disorder has contributed to a variety of punitive approaches towards the care of the hospitalized patient. Atlee (1934) ordered patients to have no contact with their husbands or families for the first 48 h of hospitalization and instructed nurses that patients were not to be given a "vomit bowl", but must vomit in bed. Moreover, he stated that "the nurse is instructed to be in no hurry about changing her" (p. 757). Others encouraged the physician to purposely invoke the element of fear, with "treatment rendered so harsh and painful that the patient stops vomiting to effect its discontinuance" (DeLee & Greenhill, 1943). For example, Williams (1923) agreed that pernicious vomiting was a manifestation of neurosis, based on his clinical observation that women with HG spontaneously improve with the physician's threat of induced abortion or after the application of leeches to various parts of the body. Walton (1973) recommended nursing strategies that included removing the "vomit bowl" from the patient's view (based on the assumption that if the bowl is out of sight the patient will not think of vomiting) and the withholding of "too much sympathy" for the patient's plight (p. 453). Despite early documentation by clinicians (Peckham, 1929) and scholars (Tylden, 1968) of their shock and disapproval regarding the punitive attitudes and behaviors of medical practitioners, these ideologies and interventions exist today. For example, one patient reported that her nurse "forced me to empty my own vomit basin" (Munch, 1991). The goal of this nursing intervention, akin to rubbing the dog's nose in his own urine, was to eliminate the undesired behavior of vomiting by introducing a type of aversion treatment. Furthermore, the presumption of psychopathology and

the practice by some physicians of an automatic psychiatric referral for women hospitalized with HG can be perceived as punitive to patients, and may actually increase patients' distress (O'Brien & Zhou, 1995).

The empirical evidence

As few as 10 empirical studies published in English have examined psychological and psychosocial aspects of HG. The methods used include quantitative survey, in-depth qualitative interview, and controlled experimental design. Descriptive articles, review articles and case studies are not included here as empirical evidence, but have been incorporated throughout this article. Only one non-English study (Nordmeyer, 1946) cited in a secondary source is presented due to its unusual approach to the problem of etiology.

Three studies advocate the theory of psychogenesis and will be described in chronological order. Fairweather (1968), an obstetrician in London, England, conducted psychiatric interviews and the MMPI on 44 HG inpatients. He found that the majority of subjects were diagnosed with infantile or immature personality associated with hysteria, and most subjects showed evidence of strong mother dependence. The author concluded that psychiatric factors may be implicated in 75–80% of all cases of HG. Extensive critiques of Fairweather's study have recently been documented by scholars who argue the study is methodologically weak and gender-biased (Bogen, 1994; O'Brien & Newton, 1991; Parker, 1997).

Obstetricians Farkas and Farkas (1971) of Romania treated 906 women with HG from 1966–1971. The first section of the article discusses case examples and observations obtained through medical interviews conducted by the authors. The sample size of interviews is not reported, and the reported methodology is vaguely stated (e.g., "psychological test" is not defined). The authors conclude an etiology of psychogenesis and/or conflicts at home. The authors go on to discuss what appears to be a second study that investigated the effectiveness of Chlorpromazine (Plegomazine) and placebo. The study consisted of 82 women, 30 cases with "positive attitudes" about their pregnancy and 52 with "negative attitudes" about their pregnancy. The medicinal treatment yielded 27–40% therapeutic results, and was found not significantly superior compared to placebo. A "much better" therapeutic effect was obtained for women with a wanted pregnancy—both in medicinal and placebo groups. The authors conclude "the results of these researches prove once more the psychogenic cause of HG" (p. 177), and that HG represents a protest reaction against pregnancy, as a result of psychical conflicts, especially from familial and home environments.

Tsoi et al. (1988) conducted 10 in-depth psychiatric interviews with HG inpatients in Hong Kong from 1986 to 1987. Over half of the subjects were found to be either ambivalent or overtly rejecting in their attitudes; and a large proportion were experiencing a considerable amount of stress, burdened with psychosocial problems. The authors contend "symptoms of severe vomiting can be construed as "a cry for help", attracting others' attention onto the problems which they cannot bear alone." (p. 459) They conclude that serious psychological and emotional problems exist; and that these factors determine whether a woman experiences a transient spell of mild vomiting or progresses towards HG. The authors do not offer alternative explanations for the stress.

Next, investigators from two studies reported more cautious conclusions in their support for a theory of psychogenesis. Harvey and Sherfey (1954) obtained Rorschach protocol and psychiatric interviews from 20 inpatient subjects in New York, NY. Subjects were found to have an anxious aversion to sexuality, a remarkable immaturity of personality, and an increased anxiety and tension related to pregnancy. The authors did not conclude a purely psychological genesis for HG, yet postulated that vomiting as part of the reaction to pregnancy depends on an integrated psychobiological development of which the psychological and the somatic are different aspects of the same process.

Rosen (1955), Syracuse, NY, conducted psychiatric interviews with 54 outpatients, including mild to severe cases of NVP ("Severe": $N = 8$). He found that the extent and degree of nausea and vomiting were correlated with the emotional stress to which the patients were subjected before and during the pregnancy, and with their characteristic modes of reaction. Although cautious about a definite conclusion and without distinction between mild and severe cases, Rosen offered the proposition that patients may be stable and happily married, or they may have severe anxiety.

Five studies refute the notion that HG is primarily psychologically based. A unique approach was taken in Nordmeyer's (1946) study of 85 German women applying for abortion, none of whom developed HG (Harvey & Sherfey, 1954). Nordmeyer argued against a psychogenic etiology, concluding that one would expect to find HG in this population of women in whom psychological factors were present. His findings were contrary to the prevailing theory that women who were ambivalent and/or emotionally distraught about their pregnancy tended to experience severe vomiting.

Guze, DeLong, Majerus, & Robins (1959) conducted psychiatric interviews with HG inpatients in St. Louis, MO in the US 1954–1955; the sample yielded 58 vomiters and 58 controls. The authors report that the great majority of HG is not a manifestation of

psychiatric disease. In the few cases in which it appeared, they noted hysteria (versus anxiety neurosis, obsessive–compulsive disorder, manic depression, schizophrenia). The authors extended their previous study through 1957, including subjects from the aforementioned 1959 study (Majerus, Guze, DeLong, & Robins, 1960). The second study included 81 vomiters and 80 controls and utilized the same methods. The authors report this as the first systematic study of a group of consecutive vomiters. No significant differences were found between vomiters and controls with respect to psychiatric illness or psychological symptoms or personal and social adjustment problems.

Two recent studies in the discipline of social work conducted in the US employed qualitative methodology and sought specifically female patients' experiences and perspectives about HG. Parker (1997) conducted two intensive, unstructured interviews with 19 patients actively experiencing HG in Pennsylvannia in the US in 1996 during and immediately after their HG; respondents were also asked to keep personal diaries. Findings include substantial evidence that HG is a biophysically derived disorder (versus "all in your head" mentality) that develops into a biopsychosocial illness system of the patient and her interpersonal environment. Author (Munch, 1998) conducted expost facto telephone interviews using structured questionnaires to elicit quantitative data, and semi-structured open-ended items for qualitative data for 96 respondents in a large mid-western city in the US who were hospitalized for HG 1994 through 1997. The study investigated, in part, patients' perceptions of the causal explanation of HG. The author found that a model of this illness based on a psychogenic etiology does not comport with patients' experiences. Ninety-three of the 96 women reported a belief that HG is caused by mostly biological factors, adamantly rejecting psychogenic theories. Three women strongly believed their HG was the result of psychological factors derived from life stress (e.g., death of a loved one). Some respondents acknowledged that preexisting life stress exacerbated symptoms, although most noted that the stress they experienced was not the *cause* of HG but was the *result* of the illness itself.

Interpretive analysis: social constructions of HG

Situating HG in the context of sociological theory based on the social construction of illness provides a context in which to understand HG. The social construction of illness refers to the idea that determinants of health, illness, and disease are constructed by individuals and groups of individuals within their particular culture at various points in history (Good, 1994; Kleinman, 1980). Symptoms designated as illness and disease in one culture may not be considered so in another culture; and within the same culture disease categories often change.

One agent of a culture's "social construction of sickness" is the medical profession. In western cultures, it is the medical profession that defines illness in theory, identifies illness in practice, and oversees those identified as "sick" (Ehrenreich and Ehrenreich, 1974). That is, it determines which biological phenomena admit one to the sick role and which are regarded as minor, psychosomatic, or otherwise ineligible for medical treatment. For example, Scully (1994) explains that early nineteenth century physicians found vaginal examinations distasteful and believed that women were merely seeking sexual gratification in their requests for examination; today, medical professionals view women who do not obtain regular pap smears as acting irresponsibly with regard to their health maintenance. Historically, medicine has had a tendency to adhere to a deterministic view that every effect has a cause and that the cause can be identified; and that "if there is a lack of bodily functioning there must be a specific cause, and this has to be identified before the patient's complaint can be credited with any veracity." (Hart & Grace, 2000, p. 199). This deterministic stance can lead to instances of blaming the victim, where patients are viewed as responsible for causing their medical condition (Marantz, 1990). Perhaps because science has been unable to establish the underlying pathophysiological mechanism of HG or a definitive treatment, many physicians and other HCPs tend to presume a psychosocial etiology, thereby placing greater responsibility for women's control of the disorder.

My review of the literature demonstrates that there is scant research, most of which has severe methodological limitations, to support or reject a theory of psychogenesis for HG. Not unlike other female medical conditions a medical folklore was socially constructed; the idea of psychogenesis was developed and embraced, and has essentially gone unchallenged (Tylden, 1968). For example, following is merely one illustration of the numerous articles that begin with introductory statements of "fact" that do not bear out in the literature:

> Psychosocial factors have long been believed to be important in the pathogenesis of... morning sickness and hyperemesis gravidarum... [this] has been confirmed during extensive studies over the last 30 years. (El-Mallakh et al., 1990, p. 655)

This medical folklore also infiltrates the conclusions that researchers have drawn, even in studies that do not examine psychosocial factors. For example, obstetricians Novey and Goodhand (1938) of Baltimore, MD in the US conducted chart reviews on 87 HG patients from 1921 to 1937. The authors examined variables including age, race, physical complications, medical treatment,

morbidity and mortality. The design did not include psychological factors as independent variables, and made no mention of such factors in either the presentation or discussion of the data. However, the entire conclusion is a discussion about psychological issues in which the authors claim, "although the neurotic element cannot be definitely proved, it does seem to play a rather important part in increasing the severity of the symptoms" (p. 489).

The paradox of HG is apparent. On the one hand, HG is legitimated by the medical profession as evidenced by the fact that symptoms have been given a diagnostic name, and this diagnosis is categorized in diagnostic manuals. On the other hand, unlike other medical diagnoses (e.g., cancer or emphysema), HG has not achieved full legitimation as a biological illness; the subcode labeled "psychogenic" for HG (ICD-9-CM; Practice Management Information Corporation, 1997) still exists. Moreover, for many years NVP was believed to be the result of psychogenic causes, but has virtually been exonerated in the literature and is now viewed as normal and common. HG *is* NVP, albeit in its most severe form. Why does HG continue to remain suspect for psychogenesis? Possible explanations may include its low incidence (although many rare conditions are not considered psychogenic), and conflicting evidence about the extent to which HG affects the health of mother and fetus (Broussard & Richter, 1998). The multiple hospital admissions and/or outpatient visits of HG patients leads one to speculate that physicians may feel helpless or merely intolerant for dependent, needy patients who require extra time and attention (Gordon, 1983). In his research on high-risk obstetric patients, Wohlreich (1986) identified that it is not uncommon for HCPs to become alarmed at a woman's expression of ambivalence about her pregnancy; they may respond in nonproductive ways by becoming annoyed, withdrawing from the patient, or labeling the patient "crazy." It is quite common for pregnant women to experience ambivalence during early pregnancy; even more usual for HG patients, in particular, as a result of the severity and duration of their symptoms.

Notions of HG are also socially constructed by its characterization in medical textbooks. Although there has certainly been improvement over the years, most texts neglect to describe the psychosocial effects created *by* HG, leaving readers to conclude that only psychological and stress-related factors are the predominant components contributing to the expression of this illness. One example is the 19th edition of *Williams Obstetrics* (Cunningham, MacDonald, Leveno, Gant, & Gilstrap, 1993), which states, "In many instances, social and psychological factors contribute to the illness.... The woman usually improves remarkably while hospitalized, only to relapse after discharge" (p. 1146). Statements such as these regarding relapse are often interpreted as an unconscious need for secondary gains (e.g., attention-seeking behavior) and/or unsuccessful coping with environmental stressors. Recent data suggest consideration of alternative explanations for relapse such as lack of known effective treatments lead to experimenting with multiple interventions, and patients' lack of rest due to others' invalidation of the sick role (Munch, 1998).

Disregard for alternative explanations for HG is most likely due to the aforementioned psychological theories, historical and sociocultural factors that continue to shape the discourse in the literature on HG. That is, there was an early fascination with the revolutionary ideas of psychoanalytic theory that labeled various reproductive disorders and related phenomena as psychogenic, and were considered to be related to conflicts about femininity or childbearing. This combined with erroneous and stereotypical societal attitudes and beliefs about women's "nature", and socialization of medical students to believe that women patients are less competent, present psychosomatic complaints, and are hysterical, shaped the ways physicians viewed and interacted with their female patients (Todd, 1989). These attitudes remain an insidious influence in medical practice. For example, a tendency for physicians to sometimes mislabel women's physical complaints as psychosomatic both in the presence of organic etiologic factors and when the underlying pathophysiological mechanism of the condition is unknown has been widely reported (Krieger & Fee, 1994; Wallen, Waitzkin, & Stoeckle, 1979).

Recently, modern theories of human development have begun to challenge preexisting theories. Theories of adult human development have emerged that have shifted our understanding of the psychology of women (Berzoff, 1989; Gilligan, 1982). For example, developmental theorists now view ambivalence in the first and second trimesters as a normal and expected aspect of the developmental and maturational processes of pregnancy (Nadelson & Notman, 1990). In contrast to traditional psychoanalytic theory that views ambivalence in pregnancy as a sign of immaturity and psychopathology and assumes psychogenic causality, a developmental framework postulates that ambivalence may cause HG, may be one of many contributing factors, or may be a separate and unrelated entity that has no relevant impact on the illness.

The epistemological assumptions that drive methodological considerations also play a crucial role in the social construction of illness. Feminist scholars have argued that research designs are often constructed merely to confirm preexisting gender stereotypes; gender, like race and class, is entrenched in the questions asked by clinical and scientific researchers (Lorber, 1997). For example, Rothman (1991) criticized designs based on retrospective studies that found women

suffering from severe nausea of pregnancy as more ambivalent about their pregnancies than women who do not experience severe nausea. She concluded, "It is as if these studies were designed to prove that the attitudes *cause* the physical condition, such as nausea" (p. 250). Rothman argued that prospective studies that start with women's beliefs and attitudes may more accurately portray the relationship, if any, between nausea and ambivalence. That is to say, being ambivalent about pregnancy may cause one to become sick; however, it is also plausible that experiencing severe physical sickness during pregnancy causes one to feel ambivalent.

More specifically, descriptive articles, case studies and research designs examining psychological predictors typically begin with the presumption that HG is a psychosomatic disorder. For example, Lub-Moss and Eurelings-Bontekoe (1997), clinical psychologists in The Netherlands, propose three subtypes of HG patients comprising: (a) personality pathology; (b) psychiatric symptoms and (c) psychosocial stress factors. The subtypes were based on clinical observations by nurses, medical and psychology/psychiatry staff, (hetero) anameses, and questionnaires (not standard) of 262 hospitalized patients over 9 years. Aside from methodological concerns that are not clearly described, it is the epistemological lens based on their assumption that "HG is a multi-conditional disorder where a combination of somatic and psychosocial factors are responsible for the symptoms" (p. 67) that may account for an apparent discrepancy between their findings and concluding remarks. The authors acknowledge "a great number of studies on the relationship between various psychosocial factors and the occurrence of HG are often contradictory." (p. 72) Despite contradictory evidence, the authors assume a "combination" of causal factors a priori, and that these factors are primarily found within their proposed typologies. Unfortunately, they neglect to entertain the possibility of a purely biomedical etiology for some women. In so doing, the authors abandon the likelihood of a fourth typology consisting of women who do not suffer from psychological or social pathology.

In sum, my initial impression of the HG literature was that a linear trend toward very early conceptualizations of HG as a biological illness to be taken very seriously (e.g., because women died) shifted to the propensity to view HG as mostly psychogenic in etiology. Although this may hold true in the very early days of medicine, a more accurate interpretation appears to be that both biologic and psychogenic approaches to HG exist in parallel tracks throughout history—with one surmounting the other in grabbing the imagination of clinicians and researchers depending on the zeitgeist of the times (e.g., post WWII fascination with psychoanalysis and Freud; various technological advancements in medicine). Still, the theory of psychogenesis was and remains today the overarching and predominant paradigm, despite controversy. Seemingly major shifts in HG paradigms perhaps may more accurately be portrayed as mild undercurrents of the debate with sociocultural factors (e.g., societal views about women)—rather than scientific evidence—playing a significant role in shaping the default paradigm of psychogenesis. Similarly, anecdotal accounts of HG remain unsettled. A female obstetric resident candidly and with some regret echoed the perceptions of her peers, "I have to admit most of us view them (HG patients) as whiners. There is not much we can do for them, like we can with a bleeder... HG cases are not technically exciting." (personal communication, July 1998). A male obstetrician exclaimed, "I can't believe anyone still thinks that HG is psychological... it's a disorder of pregnancy." (personal communication, November 2000).

Implications

Understanding the ways in which knowledge about female medical diagnoses and HG, in particular, has been constructed by medical professionals has important implications for women's health care. Nadelson and Notman (1990) concluded that labeling reproductive disorders and related phenomena psychogenic in the absence of clear data "is a simplistic and reductionistic approach to a complex process. It is supported by the need to resolve ambiguity and maintain an illusion of knowledge" (p. 1). Moreover, there is the potential for overlooking quite serious conditions, both biological and psychological. Erroneous beliefs and assumptions about sex-roles, for example, may lead to misdiagnosis and ineffective or even dangerous treatment (Council on Ethical and Judicial Affairs, 1991). Clinical assessment of both physical and psychosocial events should occur in most cases of illness. The danger occurs when female patients with certain disease/illness entities are singled out based on stereotypical assumptions and attitudes.

Furthermore, diagnoses deemed psychologically based may not be taken as seriously as those deemed biologically based, thereby, becoming even more marginalized in the health care practice and policy arenas. For example, there is some evidence to suggest that delayed diagnosis and treatment of HG occurs (Munch, 2000). Whether this occurs as a result of the inherent difficulty in making the differential diagnosis between NVP and HG or physicians' stereotypical beliefs about women with HG is not clear. What is clear, however, is that delayed diagnosis and treatment affects patient satisfaction; it can also contribute to the exacerbation of HG symptoms, thereby necessitating expensive invasive home health care and/or hospital services. In addition, insurance providers might benefit from understanding that unnecessary formal psychiatric consultations for

HG patients tend to reduce patient satisfaction and may impede patients' recovery, adding to health care costs, whereas integrating routine provision of inpatient and outpatient mental health benefits into primary care for all patients can be cost effective and improve clinical outcomes (Hoffman, Maraldo, Coons, & Johnson, 1997). Finally, in addition to biomedical competence, developing innovative medical education programs that reexamine stereotypical attitudes about women and health are warranted (Phillips, 1995).

There is a multiplicity of proposed causes, yet scarcity of research on the topic of HG. This is not unlike other female medical conditions that, until recently, have been underinvestigated. More women-centered research is needed, especially with regard to women's health care. Oakley (1993), an exemplary scholar on women's health issues, calls for research methods that address the important meanings of health to women. Similarly, King (1992) contends, "Too often, women's medical care as viewed through the cultural lens of gender differences becomes a contradiction between the "reality" of medicine and the woman's "own inner sense of the way things are" (p. 9). I have illustrated that descriptive articles and research designs examining psychological predictors have typically presumed that HG is a psychosomatic disorder. It is not surprising, however, to find that the HG data support a relationship between psychosocial indicators and HG. Most women diagnosed with pregnancy complications experience considerable stressors common to and resulting from the pregnancy complication itself (Aboudi & Zager, 1995; White & Ritchie, 1984; Yali & Lobel, 1999). The temporal relationship of psychological/stress factors has been challenged in recent HG studies. There is recent data to suggest that although psychological/stress factors may be primary contributors to HG, it is equally plausible that HG caused the stress and psychological distress (Munch, in press). Previous studies have overlooked this equally logical conclusion. Reframing the question about the temporal relationship between stress and HG is important in altering the misperception that HG is primarily a psychogenic illness. Merely looking for psychological predictors tends to frame the question as an intrapsychic problem—a matter of the patient's supposed dysfunctional personality or poor coping.

In addition to controlled studies on HG, studies that begin with the systematic examination of patients' experience with the illness are needed. Despite a design limitation such that self-report may not be an objective, accurate reflection of the role of psychological factors, these studies have significant treatment implications. For example, the literature suggests that perhaps the more cogent and compelling factor in patients' satisfaction with their health care and the patient–physician relationship is what patients perceive (Hauck, Zyzanski, Alemagno, & Medalie, 1990). Moreover, patient satisfaction as a legitimate indicator of health care quality (Ross, Steward, & Sinacore, 1995) is important in that it has been found to be associated with patient adherence to the medical regimen (Zisook & Gammon, 1980–81) and improved health status (Hauck et al., 1990).

Finally, implications for national health care policy and the allocation of research dollars to women's health issues exist. Despite advances in the organization and focus of women's health issues (Pinn & Chunko, 1999) women's health care continues to face a number of problems due to the relative lack of biomedical research on conditions affecting women, such as the lack of any effective treatment for the more than one million women who endure nausea and vomiting of early pregnancy (Longo, 1997).

Concluding remarks

Identifying and understanding the influence of the sociocultural ideologies that shape conceptualizations of HG is an important first step in reconstructing our misperceptions. Certainly, practitioners and scholars are immersed in the sociocultural times in which we live. Clinical practice and research is conducted within the context of historical and sociocultural periods. Therefore, our knowledge is constructed based on our ever-changing conceptualizations of gender, medical technologies, theories of human development, sophistication of research methods, and the epistemological stance of the researchers. Unfortunately, perspectives damaging to women and minorities often gain momentum, and studies such as Fairweather's that are considered today methodologically weak and glaringly biased are presented uncritically and invite an assumption that they are considered to have some transcendent truth or validity to them and their conclusions.

HG is not unlike other conditions such as CFS and chronic pelvic pain without organic pathology in which the "debate within this literature... tends to be premised on the dichotomous construction of either psychogenic or organic etiology." (Hart & Grace, 2000, p. 190). If the problem of gender bias in our society and health care system is ever resolved, the persistence of the mind-body dualism may diminish as we acknowledge a biopsychosocial model of health and illness—the interplay among the body, the mind, and the environment—without presuming a psychological etiology of HG based on erroneous assumptions. Unfortunately, our default toward gender bias remains especially in cases of medical uncertainty. In their landmark study of gender bias and women's health care, Lennane and Lennane (1973) concluded, "The belief in psychogenesis, once reached, is remarkably persistent' (p. 291).

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