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Author

Day, Frances B

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Postpartum Depression:
Culture and Chemistry

By

Frances Bailey Day

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THESIS

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Approved:.....*Nancy Schep-Hughes*.....9/6/85
Chairman Date
.....*Jeffrey B. Gouldman*.....9/5/85
.....*Jeffrey A. Wiener*.....08/06/85

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INTRODUCTION

Definition

Depression is generally recognized to be the most common psychological disorder. It is an affective disorder, that is, primarily characterized by a disorder of mood that is experienced as persistent sadness; in severe form, thoughts of suicide are characteristic. The lifetime risk of ever having a major depressive episode appears to be about 10% for men, and 20% to 25% for women (Weissman, 1977). Originally it was thought that some depressions were caused by events (reactive) and others just descended unpredictably (endogenous). Recent genetic and biochemical studies have modified this view, however. Family studies indicate a three times higher risk among first degree relatives of someone who has depression. Identical twins have a 40% risk of depression if the other twin experiences it. These and certain other biochemical similarities detectable in families reveal that genetic influences affect a person's susceptibility, without absolutely determining whether a person ever gets depressed (Nadi, 1984; Schlessner, 1983). Psychosocial stresses may play an important role in precipitating the onset of a depressive episode, in a susceptible person (Anisman & Zacharko, 1982). Depression is usually

responsive to treatment with either tricyclic antidepressants or MAO inhibitors. By contrast, manic-depressive disorder (bipolar affective disorder) shows completely different characteristics. It affects men and women equally. The lifetime risk of the disorder is only 1%. First degree relatives show about a nine times increased risk of developing the disorder. Lithium was accidentally found to prevent the extreme cycles of mood that characterizes this disorder (Tosteson, 1976). Cycling does not appear to be precipitated by external events (Reus, 1983).

Postpartum episodes of depression usually appear to be the unipolar variety, with, of course, a specific preceding event, childbirth, coupled with psychosocial stressors (Stern & Kruckman, 1983).

DSM-III Status

The American Psychiatric Association in 1980 published the third edition of the Diagnostic and Statistical Manual of Mental Disorders (referred to as the DSM-III). The publication contains detailed descriptions of the agreed upon categories of mental disorders and criteria for diagnosing them; the purpose is to standardize the classifications, descriptions, and definitions of disorders so that data on various treatments can be compared accurately, and so that researchers everywhere will have a common reference for terms and categories of illness.

DSM-I was published in 1952, based on categories in the International Classification of Diseases (ICD) published by WHO. The DSM-II edition listed postpartum depression as a recognized illness; however, the DSM-III edition no longer lists this condition, referring the reader instead to five other possible categories, with the notation, "There is no compelling evidence that post-partum psychosis is a distinct entity." The term psychosis is used here with the ICD meaning "any impairment of mental function, including depression, that interferes with a person's ability to meet the ordinary demands of life."

There has been debate over whether postpartum depression differs substantially from common unipolar depression other than in terms of the circumstances surrounding it. Anthropologists Stern and Kruckman (1983) have described postpartum depression as a culture-bound syndrome, partly because of the degree to which social structures and beliefs appear to contribute to its occurrence. In this sense, it may be similar to folk syndromes or illnesses such as susto in Central America and voodoo death in Africa.

ANTHROPOLOGY

The psychological process of childbirth is the same for women of all human groups. The same hormones flow through all women's veins, supporting pregnancy and later lactation; the same physical changes happen to women's bodies. The same kind of muscular contractions of the uterus expel the infant at birth, often with pain and always with the known risk of death to both mother and infant if there should be a malpresentation, hemorrhage, or infection. But the personal and social experiences of pregnancy and birth may vary widely from one culture to another, for the cultural and biological systems are not separate and autonomous from each other. Biology and culture interact continuously.

Childbirth is one of the many life cycle changes that human groups experience and mark with ritual celebration or mourning. Kitzinger (1982) states:

Birth puts body percepts in sharp focus because dramatic things happen to the body, and its physical boundaries undergo rapid and marked changes in pregnancy, during labor, at delivery, and postpartum. No other physical transmutation occurs with such speed and on such a large scale except when there is gross mutilation or death. (Kitzinger, 1982, p. 198)

Despite the basic importance of birth in the human life cycle, there have been few accounts of direct observations of births in the anthropological literature. The traditional privacy around birth, and the frequent exclusion

of males from participation, long limited the ability of anthropologists, males especially, to explore or record information on births. One anthropologist, commenting candidly on the difficulties this presented to his research, wrote:

Never having witnessed an actual birth scene in Batticaloa, I can only indicate what people said about the events surrounding the delivery. . . . Among the Moors, the end of ritual contamination on the 40th day is marked by a bath for the mother and tonsure for the infant. . . . If the infant is a girl, she will receive a visit from the barber/circumcisor's wife near the end of the 40 day period. Most of my informants said . . .

The truth is that most of these accounts came from males, who have no idea what is actually done. (McGilvray, 1982)

Common Elements in Postpartum Structure

Stern and Kruckman's (1983) excellent review of the anthropological literature on postpartum depression analyzes the patterns that appeared consistent cross-culturally, then extrapolated these components with the suggestion that essential psychological and social functions are provided by these activities. The negative outcome of depression that frequently follows childbirth in the United States may result from the relative absence of assistance, recognition, and social structuring of events in the postpartum (Stern & Kruckman, 1983).

The length of time defined as "the postpartum" varies between cultures, but is known as a finite, specific length of time designated as special and different from ordinary

life. Mother and infant are considered to be especially vulnerable and in need of protection during this period. (The Western medical model is in agreement with this perception, as the highest mortality rate for both infant and maternal illness is during the first days and weeks after birth.) Rest and relative seclusion are mandated for the mother during this time. The rest period is formally concluded with a ceremony marking reentry into normal life for mother and infant.

Functional assistance to the new mother is another element observed in most cultures' patterning of the postpartum weeks. Protection from injury, physical or spiritual, is provided. Female relatives and neighbors provide food, care for other children in the family, take over household tasks, and most importantly, assist and care for the mother herself during and after the birth. Men often provide aid in the form of economic assistance.

The social status of new mothers increases in the community. Increased honor rewards women after giving birth; gifts and ceremonies, and extra attention from family members and others, may assist in the role transition to motherhood. The change is socially acknowledged; a formal transition from one role to another has occurred.

Accounts from Other Cultures

Several accounts of birth and postpartum customs will illustrate some of the elements in postpartum. From Africa,

a long version of the rest period is presented:

Among the Ibibio of Nigeria, the new mother and infant are secluded in the "fattening room" (a special hut in the family compound) for 2-3 months and cared for by older women (usually the maternal grandmother and mother-in-law). The new mother's only functions are to eat and sleep and care for her baby while mother and baby are fattening. (Kelly, 1967, p. 609)

In Ireland in the 19th century when a midwife delivered an infant at home, she customarily moved into the household for up to a month to give advice and domestic help after the birth (Scheper-Hughes, 1979). In many cultures, the role of experienced caregiver to the mother (called a doula) may be provided by a female friend or relative (Raphael, 1976).

In the Punjab region of India (Gideon, 1962), a young woman about to give birth returned to her family's home in the last month of her pregnancy, and remained there in the shelter of her own family until the infant was three months old. For the first nine days after the birth, the woman was relieved of her household duties entirely, instructed only to rest. Her mother and midwife made special foods for her to eat at ritually designated times. The midwife washed her hair and body on the ninth day in a ceremony of ritual purification. When she later returned to her husband's home and family, she brought with her the many gifts she had received for herself and the baby.

By Guatemalan custom, after a birth a new mother remained secluded in her home for the first eight days, keeping

herself and the infant warm. In her weakened state, it was necessary to keep her head covered to prevent illness or cold air from harming her. Immediately after the birth was completed, the midwife bathed the mother and washed her clothes. She assisted the mother and infant to begin nursing, then prepared chicken soup and tea with hot rum to give the mother strength. The following day, the midwife returned to massage the mother with warm oils. On the third day, the midwife prepared a hot herbal bath and bathed the woman, washed her hair, and applied hot herbal compresses to the mother's breasts and perineum to speed healing and reduce the chance of infection. She also wrapped the mother's belly with a binding cloth to return the uterus to its normal place. The bath was repeated on the eighth day, ending the period of ritual confinement. The midwife left dietary instructions to eat chicken and greens to keep the mother's milk warm. The mother was instructed not to carry water for 15 days; not to bathe in the river until the 20th day; and to abstain from sex until the 40th day. Families who could afford a feast held a ritual celebration called the Elesan Xe Chat on the 20th day. The celebration included another bath and massage by the midwife along with a thorough housecleaning and prayers of thanks. This event marked the end of the period of relative seclusion, and the mother's formal return to everyday life (Cosminsky, 1977).

In the Philippines, the midwife who delivered the baby

supervised the woman's recovery until the puerperium was ended with a ritual bath after three to four weeks. During this time, a masseuse called a mangihilot specialized in caring for women after birth by the practice of giving them an hour-long massage on each morning of the first postpartum month. "Only birth itself and death rivaled the puerperium as a focus of medico-ritual activity" (Hart et al., 1965).

Thai birth and postpartum customs traditionally were elaborate and carefully observed, for they were seen as not only safeguarding the physical health of mother and child, but also as furthering the mother's spiritual growth and maturity. Hanks (1963) states:

For facilitating delivery and preventing dangers resulting in death, the period of giving birth to a baby was regarded as so important that pregnancy was compared to a woman going forth into battle, or, as they say, like setting out in a little boat to cross the sea, one foot in the water and the other on the edge of the boat. (Hanks, 1963)

For up to 30 days after giving birth, the mother rested beside the holy fire in her home. For this purpose, a special fireplace was built by her husband and dedicated with appropriate ceremony before the birth. After the child had been born, the mother was bathed by the midwife, given a special drink, and massaged to "replace her bones." For the period of time by the fire, the herbal drinks, bathing, and massage were repeated at intervals. During this time the mother was visited by a few close relatives bringing her gifts. The fire period prevented long-term weakness

and disability in the new mother; but it had an even more important function:

In the events surrounding the birth of the child, the significant step for the woman personally was the post-partum rest period by the fire. Far more was at stake than just drying the uterus. The fire rest was one of the series of rites of the life-cycle which marked the course of an individual from birth to death. . . . Through the consecrated fire a woman formally achieved full maturity: she became suk (cooked, ripe, mature). Maturity did not come just by bearing a child. The fire brought about the transformation. How was mature womanhood viewed? What was the essential female role and office? Bang Chan saw a woman as one who "feeds and lengthens lives." As the custodian of growth she was first the guardian of the vital essential khwan (soul), and especially of the immature, flighty khwan of growing persons. Second, a woman was a donor of nourishment, whose primary responsibility was to nurture children and other tender things. (All the deities concerned with the welfare of our bodies and our khwan were maternal, e.g., Rice, Water, Earth, Mother-Goddess, and several Mother-Princesses.) (Hanks et al., 1963)

Among the nomadic !Kung hunter-gatherers of the Kalahari desert, there are similar observances:

Circumstances of group life permitting, the mother may remain in the village for a number of days after the birth of the child. Although there is no recognized "lying-in" period, she will also minimize her daily activities until she feels strong enough to resume them. . . . The birth of her first child marks a woman's full entry into adulthood. The firstborn is seen as distinct from subsequent children; a unique expression--literally, "the one from the middle of my forehead"--exists to describe this child. . . . With this entrance into the adult world, the young woman becomes the focus of loving attention from family, friends, and in-laws. She may feel she has proved herself by having faced the ordeal of childbirth. . . . She will also have stabilized her marriage; there are few divorces after the birth of the first child. (Shostak, 1981, p. 182)

A !Kung mother of four reflected:

When a baby is still inside you, before you give birth, you have many thoughts. You think, "The day I give

birth, will I be courageous? Will I be afraid? Will I live? The day I feel the pains will my heart be strong enough to withstand it?" Then it moves to where it is going to be born. That's when it first hurts; that's when the two of you meet up against each other. You struggle with each other, and the baby grabs at your heart. Your heart throbs; the strength of the pain grabs your heart away from you. . . . Babies, yes . . . the day your baby is about to be born, that day your heart is miserable. But once it is lying on the sand, a baby is a wonderful thing. Your heart is very happy. (Shostack, 1981, p. 185)

In Jamaica, much of the care and attention to the new mother comes through the person of the midwife, the nana.

Because the pregnant woman is in a state of transition, bringing to birth another individual who is undergoing the same dangerous transitional process, she is in ritual danger from which she is protected only through the careful observances of taboos. The nana guards her and helps her through this passage.

After the delivery, they [the nanas] care for mother and baby, and for any other children of the family, and do the housekeeping, washing, and shopping until the mother is ready to take over. In this, they are assisted by the mother's female kin, and the women work together in a shared enterprise in much the same way as did the "gossips" of medieval England when attending a lying-in.

A period of ritual seclusion follows birth. Traditionally this period of intense seclusion is supposed to last for 9 nights, the same as after a death. A secondary, less restricted period of seclusion lasts 40 nights from delivery.

During the first period the woman remains with her baby in the darkness of the hut, windows or shutters tightly closed, under the care of the "grandy" [her mother] and the nana. . . . She must refrain from all household chores while the bones of her lower spine, which it is believed must swing open like a gate for the baby to be born, "knit up." . . . At the end of the liminal [at the edge, the shore] period of 40 days, the mother unwraps her turban and washes her hair, so making entry into a new phase of existence. . . . The nana has a central and vitally important role in shepherding those involved through the drama of what is essentially the re-birth of a woman as a mother. (Kitzinger, 1982, p. 194)

A 1972 study of postpartum mood changes in Jamaican women by another author implicated a socioeconomic explanation: "The worry most often expressed was decreased earning potential. . . . Among young unmarried girls, the discontinuance of education proved stressful" (Davidson, 1972, p. 661).

In these descriptions, the threads of social structuring and assistance in the postpartum are evident. By contrast, Western cultures do not particularly honor the experience of women giving birth. The setting and direction of birth have become medical. The active role in the event is attributed to the professional who delivers the baby. The postpartum period is a time of much attention to the newborn, but most mothers do not get celebrations, gifts, household help, or extra personal attention for themselves. This time of adjustment may even seem anticlimactic and vaguely disappointing. Modern medical care has dramatically improved the survival of both infants and mothers; women in Western cultures are not usually at risk of death at this time--the common risk in our culture is not of death but of depression.

Although we lack customs and rituals that would furnish support to new mothers, it is not that Western cultures have given up rituals entirely; the problem is that they have become rituals for the support of the hospital or its staff, rather than for the birthing woman. Kitzinger (1982) states:

One question that might be asked about modern hospital rituals is whether the rites have become so professionalized and stressful for women undergoing them that re-entry into society as a mother is thereby made unnecessarily difficult. The incidence of postnatal depression, which has been estimated as affecting up to 25% of all mothers, and of postpartum anxiety and child abuse through Western society . . . suggests that a highly complex variety of rites serves largely to reinforce the medical care system, maintaining the structure of the hospital institution and the relative status of those in it . . . rather than supporting the women who are becoming mothers and the families into which the babies are being born. (Kitzinger, 1982, p. 184)

Though in the West we have more of many things--more material goods, more tools, more medical care, more years of life to look forward to--we seem to have lost some very valuable social supports.

Medically managed childbirth in a hospital setting, which is the norm in the United States, excludes friends and family, and often husbands as well. The hospital staff, though competent, are busy strangers who cannot offer much emotional support. The nursery often claims the newborn for hours or days after the delivery, at a time when in other cultures the infant is being admired and exclaimed over by all those present--a small ritual that reassures and honors the mother as well. In a hospital, the very size of the institution makes many people feel insignificant and small. As a preparation for the important role transition into motherhood, this type of experience lacks the social supports and positive elements that could help women making this adjustment. Sosa (1980) studied the effect

on laboring women of having a supportive companion with them constantly throughout their first labor. Complications in the control group occurred in 80%; in the group of mothers with a companion, complications occurred among only 40%. The average length of labor was more than twice as long in the control group as in the accompanied group. This study illustrates that human support systems can be extremely important factors in the perinatal period (Sosa, 1980).

Cross-cultural evidence clearly implicates lack of social supports to the new mother in the etiology of postpartum depression in Western culture. The cutting edge of research in biochemistry is unlikely to reach this conclusion. Further integration of the various fields of human knowledge may be necessary before we understand the ways in which social interactions are able to elicit the profound biochemical changes that we know as depression, or fear, or joy, or mother-love.

BIOCHEMISTRY

Neurotransmission in the Brain

The human brain, we like to think, is possibly the most complex biological system in the universe; but it isn't possible to say for sure yet as we do not completely understand what the brain is doing or how (Bloom, 1982). I would like to sketch out in a few broad, general strokes some of what we do know about the brain's structure and function.

The millions of neurons in the brain are talking to each other constantly. Some neurons speak only to one or two neighbors; cells of this type signal muscles to move. The message goes only to a specific target. Other neurons communicate with dozens or hundreds of neighbors; cells of this type are involved in memory and creative thought. In this way, meeting one old friend can bring back hundreds of memories. Brain cells are organized in such a way that each area is in charge of a specific function (Iverson, 1979). Following a stroke, certain abilities are often lost due to damage in the part of the brain that controlled, for example, the use of a left arm. A specific part of the brain directs speech. If this area is injured, a person may be able to write and hear perfectly well, but still be unable to talk (aphasia). Parkinson's disease, a familiar

problem in some older people, causes a slow, stopped, shuffling kind of walk; in this case, an area of the brain that normally coordinates effortless walking has become short of its neurotransmitter, the chemical that enables a nerve to signal its neighbor. A medication called L-dopa is useful in Parkinson's disease. When this is taken as a pill, it is absorbed through the stomach into the blood. Some of it will be absorbed from the blood into the brain--not every compound can get into the brain; dopamine cannot. L-dopa is one small chemical group different from the missing neurotransmitter, dopamine. If the cells get the precursor, L-dopa, they are able to change it into the dopamine they need; and while they have the precursor, the cells can function almost normally again. We do not know why the cells lose their ability to make their dopamine in the normal way. We do not know how to restore their normal function again. But the use of L-dopa seems to bypass the problem created by the lost function (Iverson, 1979).

Two neurotransmitters thought to be involved in depression are serotonin and norepinephrine. All three of these compounds are made by neurons from two amino acids that are present in the diet; only a few small changes are needed. The transmitters thus formed are stored up in the nerve until the time that it wants to signal its neighbor. Then a small squirt is released; the neighbor knows that it has been signaled when a small amount of the transmitter comes

over and sits on special receptors on the surface of the second neuron (Axelrod, 1974).

The parts of the brain that regulate such physical functions of the body as appetite, sexuality, sleep or wakefulness, physical activity, as well as emotion and mood, are also using these neurotransmitters to relay their message of "on" or "off" to other parts of the brain and to the body (Iverson, 1979).

Symptoms that Accompany Depression

The syndrome called depression usually is experienced as a combination of mental and physical symptoms. Feelings of sadness, hopelessness, or despair are accompanied by changes in body functions. Often there is a change from normal appetite, either up or down; usually tiredness with reduced activity or reduced inclination to exercise, and awakening in the small hours of the morning with difficulty in returning to sleep are common. One often experiences a decreased interest in sex, as well as in other activities that formerly brought pleasure. Difficulty initiating action; intrusion of unusually negative thoughts which may include guilt, lowered self-esteem, or a pessimistic or anxious assessment of the future are common indicators (Reus, 1983; Zung, 1965; Anisman & Zacharko, 1982). There are some biochemical reasons why these particular symptoms tend to cluster together. The observations that depressive syn-

dromes have some tendency to run in families implies that there is an inheritable biochemical vulnerability being passed on, and showing up only here and there--like red hair, or twins, or a tendency toward developing diabetes (Nadi, 1984; Reus, 1983; Schlessner, 1983). The observations that drugs, such as tricyclic antidepressants, can often reverse depression implies that a biological disorder is occurring in the brain, because these particular medications are imitators of the chemicals the brain itself normally makes and uses in sending signals along nerve pathways (Van Praag, 1982; Akiskal & Webb, 1983).

A characteristic of depression learned from observation is that it often appears to develop into a downward spiraling state to a point where a negative feedback loop appears to be operating. Some researchers feel that at that point, verbal therapies alone are ineffective; pharmacotherapy and psychotherapy together are thought to have an additive effect (Akiskal & Webb, 1983; Akiskal & McKinney, 1972, 1975; Beitman, 1984; Knauth, 1975).

Chemical Changes in the Brain Accompanying Depression

Depression in mind and body is accompanied by certain chemical changes in the brain and spinal fluid. Serotonin, known to be involved in mood and sleep regulation, gives a characteristic breakdown product when it is released and then degraded. Low levels of the breakdown product, 5-HIAA,

imply that little has been made and released; recent studies have correlated very low levels of this compound with suicidal depression or completed suicide (Anisman & LaPierre, 1982; Pines, 1983; Lidberg, 1984; Traskman, 1981). Most of the drugs called tricyclic antidepressants have some serotonin-like functions. An interesting sidelight is that LSD is also a serotonin agonist (mimic) (Barron, 1964). Tryptophan is the amino acid found in food that is transformed into serotonin in the brain (Hartman, 1978). Some experimenters have had some success with "precursor loading," that is, giving a person with depression a larger quantity of the precursor for the neurotransmitter that seems to be in short supply (Wurtman, 1982).

Norepinephrine also seems to be involved in mood regulation. Its breakdown product, MHPG, is also in some experiments found to be low in cases of depression (Van Praag, 1982). Precursor loading with tyrosine has been tried, but not found to be effective so far. One current hypothesis on the interaction of these two transmitters in depression postulates that a deficiency of serotonin sets up an instability, that with low norepinephrine, creates depression, but with high norepinephrine, causes mania, as in bipolar disorders where there is a cyclic alteration between excessively high moods and excessively low ones (Akiskal & McKinney, 1975).

Pharmacological Interventions in Neurotransmission

There are several different ways in which drugs and/or poisons can affect body function. Some things just destroy cells; for example, strong acid, or lye, or fire. Radiation and some cancer-causing chemicals affect cells by making small alterations in important molecules in the cell, such as the DNA which directs the cell to replicate itself accurately. Some chemicals affect cells by looking or behaving much like natural neurotransmitters, but being more persistent than the real transmitter. Some insecticides resemble the insect's major transmitter molecule, but are "stickier." Normally, neurotransmitters are just a flash in the pan, as they are almost immediately broken down by enzymes lying in wait for this purpose. If there were no breakdown process, the nerve signals would appear to be jammed on at top volume. The insecticide that is a sticky imitation transmitter does in fact "gum up" the breakdown enzymes for a while--long enough that the insect has fried its neural circuits by being unable to turn off its own signals. Under these circumstances, essential life functions are interrupted and the insect dies. Human beings, as it happens, also use the transmitter acetylcholine in some nerves; for this reason, the insecticide can do a similar thing to people if they inhale or ingest enough of it in them.

Curare, the South American arrow poison that causes paralysis, has a similar story, although it acts slightly

differently. Instead of gumming up the breakdown enzyme, it drifts over to the receptor molecules that should receive the neurotransmitter; once attached, it hangs on tightly, covering up many or all of the receptors, but not causing the second nerve to think it's being signaled. A drug that does this is called an antagonist of the proper neurotransmitter. Curare is an antagonist in the nerve pathways that send motion signals from the brain to the muscles. When the signals cannot get through, paralysis occurs. Eventually, the antagonist wears off and is eliminated. For someone experiencing this, if breathing has been supported by a respirator in the meantime, the person is still alive.

Morphine, which comes from poppies, binds enthusiastically to some receptors in the brain. They have been named opiate receptors, but they were in the brain long before the opiates ever were. These receptors seem to be active in the neural circuits that suppress pain signals coming in from the body to the brain (Marx, 1979). Some researchers reasoned that if the receptors were there, and apparently functioned when stimulated, then there must be a natural substance made by the brain precisely to fill that function (Snyder, 1977). Endorphin was the name given to these compounds when they were finally found. There is some speculation that acupuncture may work by activating the brain to release its own endorphins. This hypothesis is supported by experimental evidence that a morphine an-

tagonist which is used to bring people back from overdoses, Naloxone, is also an endorphin antagonist, and also antagonizes the pain relief that acupuncture produces (Goodman & Gilman, 1980). One of the theories about how acupuncture works is that it causes the brain to release its natural endorphins in larger amounts than normal (Iverson, 1979).

A number of drugs have effects on the neurotransmitters thought to be most closely involved in depression--norepinephrine and serotonin. Cocaine increases the available norepinephrine at the nerve terminals (Goodman & Gilman, 1980; Iverson, 1979). Amphetamines cause neurons to release more norepinephrine, thus increasing the effect of all the functions it normally directs (Axelrod, 1974; Reus, 1979). The tricyclic antidepressant drugs are norepinephrine agonists, as well as serotonin agonists, so that their effect is like increasing the amounts of both of these transmitters available to the brain. Apparently the tricyclics have a structure that looks sufficiently like either of the natural transmitters to substitute for them at some of their intended receptors, similar to the way a master key would fit more than one lock (Stahl, 1984). Such medications have a variety of side effects because the same two transmitters are used in regulating other functions in addition to mood; these other functions may be turned up or down somewhat from normal because of the presence of the drug substituting for the transmitter. So far, we cannot direct

drugs only to the receptors where we prefer them to act; like buckshot they are sprayed in the general direction of the target, and a number of other things get hit too (Richelson, 1984).

Pharmacology has developed some drugs that affect the functions and perceptions of the mind. Conversely, the function of the mind affects the level of transmitters in the brain (Akiskal & Tashjian, 1983). Brain scanning equipment is able to measure changes in brain metabolism that accompany thinking, feeling, and seeing (Wagner, 1985). Although we are almost totally ignorant of the detailed inner circuitry of our own minds, it is apparent that our neurotransmitter levels, as indicated by moods, are constantly being swung up and down by life (Paykel, 1969; Bloom, 1982). "Uppers" are food, hugs, falling in love, friends, beauty, play, and excitement. "Downers" are hunger, isolation, boredom, exhaustion, overwork, illness, rage, excessive cold, heat, or toxic chemicals, poverty, social stresses, discrimination, unreachable aspirations, acute frustrations. It is suspected that aversive experiences such as these deplete neurotransmitters (Anisman & Zacharko, 1982).

A thoughtful reflection on the problem of understanding the mind-brain connection is offered by Bloom (1982):

If we could establish the connections between emotions, motivation, psychic energy, and the inward and outward expressions of anxiety, we might be able to define a neurobiological to psychobiological continuum in which the best treatment, directed at the underlying

problem rather than at the immediate mode of its expression, might not necessarily be a drug. (p. 1381)

Indeed, it follows logically that as events and other people affect our moods and brain chemicals, so too do the larger collections of events and persons that we refer to as our social support systems, our tribe, or our society.

CULTURE

Epidemiology of Depression in Women

Depression is one of the most prevalent medical disorders, affecting women approximately twice as frequently as men. Although in women clinical depression is often seen in association with events in the reproductive cycle, no clear association with the level of any particular hormone has been demonstrated (Reus, 1983; Weissman, 1977; Rosenfield, 1980).

When epidemiologic studies assess the prevalence of depressive symptoms (experiences of intense, pervasive, and constant feelings of sadness or disappointment that affect normal functioning), 10% to 20% of persons surveyed report having such feelings at that point in time (the point prevalence rate). When the prevalence of major depression is assessed, the point prevalence for men is about 3%, while for women it is 5% to 10%. The lifetime risk of ever having a major depression is about 10% for men and near 25% for women (Reus, 1983).

Epidemiologic studies of the rates of depression have consistently shown that women have higher rates than men; this finding has been shown repeatedly over the last 40 years, in the United States and elsewhere. Weissman and Klerman (1977), having reviewed and summarized the results

of 34 studies, concluded that these results were not due to the fact that women were more willing to express distress and to seek help for it; but rather, were a reflection of the real rates of existing depression, and might be attributed either to a different biological susceptibility between the sexes, or else to social causes that affected males and females differently. Weissman and Klerman hypothesized that as men and women show different help-seeking patterns, an unknown proportion of depressed men may have been recorded in health surveys as alcohol abusers rather than identified as depressed. Rosenfield (1980) offered an alternative explanation: as the rate of stressful events seemed to be equal for men and women, it appeared that women responded more often with symptoms of depression, while men tended to respond with behaviors that became labeled as personality disorders.

A time when women are frequently susceptible is the postpartum period; about two thirds of new mothers experience some symptoms of depression, including tearfulness, irritability, and feelings of inability to cope with both the new infant and routine household chores. The incidence of such symptoms seems to be slightly higher following the birth of a first child, slightly higher in older mothers, higher in women with a prior history of mental illness, and, surprisingly, lower among unmarried teenage mothers. According to data on all mental hospital admissions for

women, the risk of major depression or other mental illness remains higher in the months after childbirth (Tauber, 1974).

Early psychoanalytic theory postulated that many characteristics of women's personality were based on feelings of inferiority and envy of the male's penis; Freud felt that women wanted babies to compensate for their fantasied loss of a penis. Clara Thompson, another early psychoanalytic theorist, challenged Freud's concept that an infant was a penis substitute, writing: "Childbearing is a sufficient biologic function to have value for its own sake. Surely only a man could have thought of it in terms of compensation or consolation (Friez, 1978, p. 40). She argued that many of the feminine behaviors that Freud attributed to penis envy were actually the result of women's envy of the superior status and privileges accorded to males in a patriarchal and competitive culture.

Women often find themselves granted less privilege and importance socially despite the obvious primary role of the female in reproducing the species (Rosaldo, 1978). Possibly, observation of this fact does not escape the notice of children in their early years; if so, envy of the opposite sex might characterize either males or females. Male children might envy the reproductive capability of women, while female children might envy the status and power of men.

Thus, both biologic and psychological inquiries seeking to explain the preponderance of depression among women lead

directly to further inquiry into the social structure for answers. One method of inquiry is the Social Readjustment Rating Scale developed by Holmes and Rahe (1967). This instrument is a list of stressful life events, each given a quantitative rating indicating their relative severity to an average person. Clinical and epidemiological studies have supported the hypothesis that stressful life events may trigger physical illness or depression. The use of this scale to study the lives of depressed men and women indicated that the number of stressful events was similar, but that women tended to report that they experienced more symptoms and a more intense response to events than did men, especially with regard to affective distress (Weissman, 1977). It seems likely that life events do not happen more frequently to women, but do impact differently on women's lives.

The scale itself does not value events differently by sex. However, certain events affect the sexes differently, such as a birth in the family, grown children leaving home, or divorce when there are still young children at home. Women's lives are often more severely affected because they lack the economic power to buffer these changes or losses. The emotional hardships may be amplified by the social reality that women are rarely able to earn as much as equally skilled men, while women more often have the final responsibility for the care of children. The general

scarcity of childcare options further limits women's choices.

In several other ways, life stress scales may underrate stresses on women. The scale does not refer to events in the lives of significant other persons. Women's sense of responsibility for others, especially husband and children, may result in their being stressed by events in the lives of other family members. For example, if there is a change in the health of a family member, it is often a wife or mother who alters her routine to care for the ill person. Life event scales omit certain types of events that stress women particularly, such as physical assault, sexual abuse, abortion, and incidents of sex discrimination (Carmen, 1981). Events such as marriage, childbearing, and divorce often have more significant or longer-term consequences for women. Chronic life stresses are not assessed by this measure, either; poverty, large family size, and some health problems affect women to a greater degree than men (Weissman, 1977).

Several items on the Social Readjustment Scale have been described by Paykel (1969) as "entrances" to the social field of the subject (marriage, birth, new person in the home), or as "exits" from the social field (divorce, death, family member leaving). While to other family members a birth is an entrance, nevertheless to the mother herself the birth is also a most profound and definitive exit. This single event is obviously more of a change for the mother herself than for any other family member; however,

the scale itself is not sensitive to such distinctions.

It would appear that the most likely explanation for the greater numbers of women experiencing depression lies not in unique female biology or psychology, but rather in the social interrelationships between women and those around them. Studies of mental health in relation to male and female sex roles have shed some light on this interesting area.

Evidence Linking Marriage and Depression

In an effort to investigate the possible influence of sex roles on the genesis of higher depression rates among women, a study by Gove (1972) looked at rates of depression in men and women by breaking down the data into statistics comparing married women with married men, unmarried women with unmarried men, etc. As before, the overall data showed that depression was higher among women; but upon examining the more detailed categories, the researchers found that almost all the higher rate occurred in the married women. The lowest rate of depression was found for married men. In each other marital status category, single, divorced, and widowed women had lower rates than men. It appeared that marriage had a protective effect against depression for men, but a detrimental effect for women. This finding has been replicated in other studies. Weissman, Gove, and Geerkin (in Carmen, 1981) have stated:

The data indicate that married men who work are in the best mental health, that married women who are unemployed are in the worst mental health, and that the mental health of employed housewives falls in between. Having children in the household generally contributes to poor mental health. (Carmen, 1981, p. 1323)

A study by Rosenfield (1980) examined the comparative rates of depression of husbands and wives in marriages where the wife worked, compared to marriages in which the wife did not work outside the home. These were called nontraditional and traditional divisions of labor, respectively. With the traditional divisions of labor, women showed higher rates of depression than men; with the nontraditional division of labor, men showed higher rates of depression than women. The author concluded, "The evidence favors explanations based on sex roles, rather than on either biological factors, or particular sociodemographic characteristics" (Rosenfield, 1979, p. 38).

Such studies clearly show that the social concomitants of being a married female in a traditional sex role contribute to depressions in many women. The common expectation of the woman's role in marriage is that she should attend to the caretaking and needs of others in a social context that affords little or no prestige to her contributions. Future studies should investigate the effects on both partners of using nontraditional division of labor in regard to childcare and housework; several key studies have found the highest rates of depression among women to be in mothers

staying at home with young children (Wolkind, 1981; Brown, 1975).

Evidence Linking Parenting and Depression

Several lines of investigation have examined the connection between women's parenting role and their higher rates of depression. Pregnancy and birth are major physical stresses on a mother; as with the hormonal changes occurring in the postpartum, however, no biological investigations have established any causal connection with the rate of depression.

Studies of social roles have found that the onset of parenthood is often accompanied by unanticipated changes in respective roles. Garrett (1981) points out:

One aspect of a couple's relationship markedly affected by the birth of a first child is the partners' mutual role arrangements. Not only do the entirely new and demanding roles of mother and father emerge with the birth, but the balance of the couple's other roles--who is responsible for household tasks, decision-making, and work outside the family--may change too. Researchers describing a move toward more traditional role arrangements after the birth of a first child seem to assume that traditional arrangements are less ideal for partners. The assumption is probably based on the pervasive impression of a gradual but marked shift in our society toward egalitarian roles for partners in couple relationships. There is evidence of a trend toward egalitarian attitudes in men and women, but not in behavior. It has been found that women still take most of the responsibility for household tasks, whether the partners are married or living together, whether or not both spouses work outside the home, and whether or not they have children. (Garrett, 1981, p. 1)

Economic as well as personal factors are influential. Brown, Bhrolchain, and Harris (1975) explored the relation-

ship between psychosocial stresses and depression in a London community in 1975, and reported:

Psychiatric disturbances, and in particular the depressive conditions we deal with, are in a critical sense social phenomena, and their distribution in a population is therefore an important way of evaluating and understanding the workings of a society. (p. 227)

The prevalence rate of depression among women in London was 16%. When various subgroups were separated out by class and income levels, striking differences appeared. The rate of depression was lowest (5%) for middle-class women or those without children living at home. At the other extreme were working-class women staying home with children under the age of six; 42% of women in these circumstances were depressed. (A different study found that 10% of mothers were continuously depressed throughout the first three and a half years of their child's life [Wolkind, 1981].) Middle income women with children at home were depressed at only one fifth the rate seen in the working-class group.

The two factors correlated with higher rates of depression: a woman having lost her own mother in childhood, and the presence of three or more children under the age of 14 living at home. Two factors that appeared to provide some protection from depression were also found: employment outside the home, and the presence of a strong, intimate, and supportive relationship with her spouse.

The homemaking role is restrictive and limited for many women, particularly in the nuclear family style that

has evolved in industrialized countries. The tasks required are defined by others' needs, and for the most part are confined to the home. Brown and associates (1975) concluded that the class difference seen in the rates of depression was due to a higher rate of real adverse life events (such as eviction) as well as to greater vulnerability to such events in the working-class, caused by their ongoing poverty, poor housing, more frequent unemployment, and other related variables.

Having a job seemed to help keep women from depression in several ways: their economic status improved; they were able to maintain adult relationships outside the family; they experienced raised self-esteem; and they had an antidote to the boredom of unrelieved homemaking.

A supportive partner in a strong, intimate relationship was often able to function as a buffer for a woman, protecting her from depression even in the presence of adverse life circumstances. Brown et al. (1975) point out, "Intimacy acts as a powerful mediator between a severe event or major difficulty and the onset of a psychiatric disorder" (p. 235).

Depression in the Postpartum Period

The role of physical stress. The postpartum period is a time of transition for a woman. That which was her own body one day has become two individuals the next day, one at the service of the other. Labor and delivery tend

to be a stressful physical experience for a woman. The beginning of the postpartum period with the new infant may be complicated by continued physical discomfort from sore muscles, healing lacerations, and the onset of lactation, which tends to initially overfill the breasts, causing discomfort. Under these circumstances, the woman may not feel ready to undertake the total care of a new infant when they return home from the hospital.

Sleep deprivation is often present in the early months; it is an unfortunate fact that many normal babies wake up crying several times a night to be fed. Lack of sleep is not a cause of depression in itself, but in combination with other factors, such as lack of help and support, may lead to feelings of helplessness and hopelessness, possible precursors to depression. The presence of other children in the family may prevent catch-up sleep during the day. Adequate sleep is an important restorative process that may not be available to a woman during the postpartum period.

Freedom of movement in the world is affected by the presence of a new baby. Household tasks that require both hands seem simple enough when both hands are free, but may become overwhelming if attempted while holding the baby. Many items in the adult world are not designed to accommodate pregnant women or mothers with infants or young children; public restrooms, theaters, and many stores become difficult places to use. Such factors as these tend to confine mothers

and their young children to relatively few friendly areas, such as home and the park, if there is one in the neighborhood. While a woman's adaptation to these changes in her life style may be accomplished with ease, such stresses may nevertheless be added to significant problems in other areas of her life and ultimately contribute to a depression.

The role of infant temperament. An infant is not born with a mind like a blank slate, contrary to what was once thought. A ten year study by Thomas and Chess (1984) identified nine categories of temperament that appeared to remain stable characteristics of the individual from infancy onward. These seem to be inherited tendencies and preferences that seem to be continuous despite the influence of parents or environment over long periods of time. Some studies find that an infant's motor activity level tends to remain stable; an inactive, quiet baby is likely to be similar years later. The regularity or irregularity of biological rhythms is a fairly consistent characteristic. A child's tendency to approach new situations or to withdraw from them is likely to remain the same. The ease with which a baby adjusts to changes in its routine seems to be stable over time. The threshold of responsiveness to sensory stimulation may be high or low; if an infant is easily startled this is likely to be characteristic years later. Positive or negative mood was observed to have a consistent quality over years. Intensity of reaction to stimuli, ease of distrac-

tibility, and persistence were all categories of behavior that characterized the child's personality over many years. Parents can do little to alter these traits, apparently. A child arrives with a distinct personality that unfolds over time; sometimes this is a major stress on a new mother. The most distinctive example is the colicky baby.

Demoralization may set in when a baby has regular inconsolable screaming spells. There is no known cure for colic; fortunately, babies usually outgrow it by three or four months. Mothers vary in their reaction to this problem; often, they become anxious and nervous. Many doctors still believe that colicky infants are merely reacting to anxiety and tension in the mother; this attitude is likely to increase both, but relieves the doctor of all further responsibility for the distressing condition. Lennane (1973) states:

This is a well-defined clinical entity, occurring in healthy thriving babies, usually beginning in the second or third week of life and subsiding spontaneously at three or four months, and occurring most frequently in the late afternoon or evening. The incidence of colic in a prospective study was 23 per cent. . . . A prospective study of 126 mothers of newborn infants, using a standardized objective psychological test . . . showed no relation to maternal emotional factors. (p. 290)

A recent study of infant temperament among the Masai tribe of the Kalahari desert assessed infants on a scale as either Easy, meaning calm, quiet, and tending to sleep much, or Difficult, meaning active, loud, irritable, given to much crying. In a six month follow-up study, it was

found that three quarters of the Easy babies had died; but three quarters of the Difficult group of babies had survived (to that point). The unusually challenging conditions imposed by the increasing drought conditions had diminished the livestock and food supply, and caused extremely high infant mortality (deVries, 1984). The unexpected implication was that the infant's temperament was highly correlated with its probability of survival. It could be speculated that natural selection over centuries may have encouraged the survival of "crabby" babies who demanded their mother's attention loudly and often.

Sociocultural factors contributing to postpartum depression. Concerning the low status of women, the following observations have been made. Children learn early as they grow, by observing the world around them, that females generally have less status than males. The message is inescapably transmitted in family interactions, schoolbooks, and the media. Women's work is considered less important, and worth less pay. One of the corollaries of these sociocultural values is that the essential and remarkable tasks of women in continuing the human race are almost ignored. Pregnant women are rarely seen on television, and mothers nursing infants even more rarely. Childbirth as frequently portrayed on television is not about courage and effort and the pride of accomplishment, but about hysteria and rescue by medical personnel. So, if after nine months of

continuous biological effort culminating in childbirth the postpartum should seem anticlimactic, it's understandable. Women's work is not celebrated and praised in our culture (Carmen, 1981, p. 1321). The reproductive and nurturing roles are often represented as unattractive (fat), unremarkable and undesirable ("knocked up"), and uninteresting. Mothering is not well paid, one indicator of cultural values; and reproduction except in marriage is still considered shameful. Gloria Steinem has written, "Childbearing was not always regarded as inferior; it was once worshipped." That was in a much earlier era.

The experiences of pregnancy, childbirth, and parenting have the potential to be deeply satisfying and affirming of life and self-esteem for women; when this satisfaction cannot be felt or claimed, the loss is very great. The cultural near absence of response to new mothers stands in sharp contrast to the importance of this period in the life cycle. Human infants require a high level of nurturing and positive response; it should not seem surprising that their mothers need the same care too.

With regard to **sexual prejudice**, as a consequence of the different reproductive roles of the sexes, men and women each suffer certain disorders that are never experienced by the other. Females are never bothered by prostate trouble. Males never suffer from menstrual cramps, nausea related to pregnancy, or painful labor (except in couvade), and

only rarely from colic or postpartum depressions. The historical preponderance of males in the medical profession has contributed in the past to a degree of difficulty in taking some of these women's problems seriously. In the absence of a scientifically acceptable alternative explanation, there has been a tendency to attribute these disorders to psychogenic factors. The suggestion may have originated with Freudian thought. An unfortunate effect of this view was that women who sought help for such conditions got pejorative psychiatric labels instead.

Lennane (1973) points out:

Dysmenorrhea, nausea of pregnancy, pain in labor, and infant behavioral disturbances (colic) are conditions commonly considered to be caused or aggravated by psychogenic factors. Although such scientific evidence as exists clearly implicates organic causes, acceptance of a psychogenic origin has led to an irrational and ineffective approach to their management. The severity and duration of pain in severe dysmenorrhea, which makes most patients apprehensive, has been reversed to show that fear and dislike of menstruation cause or aggravate dysmenorrhea. Nausea of pregnancy, particularly if severe, may make the woman ambivalent about the state that is causing it, as long as the symptoms last; this has been reversed to say that ambivalence or hostility cause nausea. Pain has a marked affective accompaniment; this has been interpreted to say that the affect (fear) causes the pain in labor. Prolonged bouts of unexplained screaming in the infant are likely to cause the mother anxiety; this has been explained on the ground that infantile colic is caused by maternal insecurity and tension. Because these conditions affect only women, the theories that characterize the relevant literature may be due to a form of sexual prejudice. . . . An erroneous belief in psychogenesis is damaging to the patient in many ways, though possibly convenient for the doctor.

Freudian psychiatric theory long taught that mature female sexual response consisted of vaginal orgasm; eventu-

ally, Masters and Johnson's definitive research disproved this. There is no exclusively vaginal orgasm.

Menstrual pain was often attributed to emotional problems, maladjustment to the female role, or to outright malingering to avoid some obligation. Within the last ten years, chemical compounds made in the body, called prostaglandins, were discovered. These function as the body's intercellular mediators of pain signals. They are present in high concentrations in the uterus during menstruation and labor. Investigators learned that aspirin accomplishes its pain-killing effect by preventing the formation of these compounds in the cell walls. From this line of research, several previously unconnected pieces of information were reorganized into a coherent picture of the physiological mechanism of pain. In this way, dysmenorrhea achieved scientific respectability.

Biases, however, do remain, and it is unfortunate that attitudinal problems in the medical profession as well as in the rest of society make it more difficult than should be for women to get help in areas related to reproductive and sex roles. Postpartum depression has been described as "so ubiquitous and ostensibly benign that it has not often been deemed worthy of serious study" (Stern & Kruckman, 1983, p. 1028). Not being taken seriously may contribute to depression.

Concerning the absence of social support and recogni-

tion, the anthropological literature provides little evidence for widespread occurrence of postpartum depression in other cultures. This lack of evidence could be due to the relatively small amount of attention paid by anthropologists, until recently, to pregnancy and birth. The distancing of males from birth has made much of this area of study relatively inaccessible to men. Another factor that may be contributing to the apparent absence of this type of depression is that the details of its expression seem to vary somewhat from one culture to another, making direct comparisons difficult (Megzich, 1981; Prince, 1981; Singer, 1975; Zung, 1969; Fabrega, 1974; Kramer, 1968).

Accounts in the anthropological literature do show, however, a consistent pattern of attention to the care and support of new mothers, though details vary from culture to culture. Social structuring of postpartum events, together with explicit recognition and honoring of the maternal role transition, and specific help with personal and household tasks, are the common elements of this pattern. To quote Kitzinger (1982):

If we view birth as a rite of passage, the pattern of interaction between individuals and social groups comes clearly into focus. Transitional rites define and regulate the passage from one social status to another. They guard the threshold between social categories of being. The individual on the journey between two kinds of social identity is controlled and protected and the behavior of everyone involved carefully circumscribed to achieve an orderly transition. . . . The concept of "at risk" is basic to such rites, for the transition between different social identities is believed to be fraught with peril. (p. 182)

In the early weeks after giving birth, a mother in our culture usually stays at home with the new infant, with other children if she has others, but without adult companionship or assistance. If this is a first baby, the mother may be isolated and without support for the first time in her life; there is no custom that assigns a doula to care for the new mother while she cares for the new baby. She is expected to function as a full-time caregiver of a totally helpless being without any role models, at a time when she is undergoing a dramatic change in role behavior. Tauber (1974) states:

The degree of isolation imposed on new mothers seems to be unique to our culture, and becomes almost incomprehensible when our "advanced" society is compared to more primitive cultures, where (regardless of the handling of the actual delivery), the new mother is surrounded in the days and weeks following parturition by older, experienced women. . . . Far from being isolated and neglected, the new mother is cared for, and thus is liberated to care for her own child. (p. 95)

Stern and Kruckman (1983) suggest that this syndrome may be described as a "culture-bound syndrome" in the sense that values and social structures unique to a particular culture interact to produce forms of illness not found elsewhere. They propose that a relationship exists between postpartum well-being and the rituals that mobilize support for the new mother. The absence of social supports may predispose toward negative emotional states in the postpartum.

CONCLUSION

The general conclusions about the sociocultural etiology of postpartum depression that have been drawn from anthropological comparisons are supported by the similar conclusions reached in the various studies of depression cited here. Social discrimination against women, coupled with a devaluation of traditional female roles, appears to contribute to women's substantially higher rates of depression in this culture. In a culture that patterns the postpartum, specific honor and status is accorded to the female role at that time. Employment outside the home ("nontraditional division of labor") is associated with lower rates of depression in women, perhaps by providing another role from which to gain status. Working-class women caring for young children at home show extremely high rates of depression. It appears that lack of assistance or adult companionship, coupled with economic strain, is a deadly combination, but an intimate, supportive relationship with a partner appears to have a very protective effect on mental health, even with these adverse conditions. Our custom is to isolate the birthing mother in a hospital, away from friends and family, then return her to near solitary confinement without assistance, role models, or companionship to learn her new role behavior. Positive mental health, in adults as well

as in children, requires nurturance and care to develop. Mothers in the postpartum period need a great deal of support in order to be able to give as much care as infants require. Biological, genetic, and endocrine factors alone do not account for the high incidence of "baby blues." Lack of caretaking for our primary caretakers underlies this pervasive culture-bound problem.

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