

Chapter 5

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BEING YOUNG AND FEMALE: RISK FACTORS FOR MAJOR DEPRESSION

Depression is a significant health problem for young women. Although the increased risk of depression among women has been noted for more than 200 years, the emphasis on depression in young women is more recent. In a review of the epidemiologic data on depression, covering 30 countries over a period of more than 40 years, we found that, with few exceptions, depression had a high prevalence and was consistently more common in women than men, both as a symptom and as a clinical disorder (Weissman and Klerman, 1977). Depression was the psychiatric complaint most often reported by women in physicians' offices and in outpatient psychiatric clinics, as well as among women in the community who were not receiving any medical or psychiatric treatment (Weissman and Myers, 1978). Moreover, the incidence of depression seems to be increasing. Today, the typically depressed patient is apt to be a young woman under age 40, in her most productive years, often married and rearing children. Depression is no longer confined to middle-aged and elderly women, and seldom leads to hospitalization. Moreover, depression has a serious impact on the younger woman's

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capacity to enjoy life, to sustain intimate and enduring relationships, and to realize her full capacities (Weissman and Paykel, 1974).

Suicide attempts and depression are highly related disorders. Many suicide attempters are depressed, and a substantial minority of depressives have made suicide attempts. Therefore, attempted suicide, which also has a high prevalence, is, albeit indirect, another reflection of depression in women at an earlier stage of their life cycle. Whereas the typical depressed woman is a married person between 25 and 40 years of age, the typical suicide attempter is a single woman under the age of 25, often as young as 15. In a comprehensive review of studies of suicide attempters covering six countries and a period of more than 10 years, we consistently found that the typical suicide attempter was a young single woman (Weissman, 1974; Wexler et al., 1978). Rates of suicide attempts have increased dramatically over the past two decades in Western industrialized countries. This increase was found even after correcting for population growth or for changes in methods of reporting. The sex ratio for suicide attempts is about two females for every male and, for depression, two to three females for every male.

The increase in rates of major depression among women has sparked the curiosity of biologists, sociologists, and feminists, and many hypotheses have been put forth. The various explanations to account for the finding and the available data were reviewed by Dr. Klerman and me in 1977. We concluded that the increased rates among women were real, and not an artifact of differences in help-seeking or in reporting stress or distress. We proposed various theories for the increased risk to women and reviewed the available evidence to explain them (Weissman and Klerman, 1977).

This chapter reviews the new evidence since 1977, reports what we know about rates and risk factors for depression in young women, and discusses possible preventive intervention trials in light of these risk factors.

What is Depression?

In any discussion of depression in women, we must first clarify the definition of depression, since the rates and risk factors will vary by the definition used. In considering the epidemiology of depression it is useful to differentiate between depressive symptoms, the syndrome of major depression, and bipolar disorder. Depressive

symptoms usually include dysphoric mood; appetite and sleep disturbance; loss of interest or pleasure; loss of energy; feelings of worthlessness, hopelessness, or guilt; difficulty thinking; and thoughts of death. These symptoms can occur in a variety of medical as well as psychiatric disorders, and usually have been measured in epidemiologic studies by self-report scales.

The syndrome of major depression, as defined by the Diagnostic and Statistical Manual of Mental Disorders, Third Edition (*DSM-III*) (American Psychiatric Association, 1980), includes similar symptoms, but also includes criteria of persistence and impairment. The symptoms must persist for at least one to two weeks, resulting in impairment in social functioning. There are exclusion criteria as well. The symptoms must occur in the absence of other disorders (such as schizophrenia) that may better explain the condition.

Bipolar disorder, as defined by the *DSM-III*, is differentiated from major depression in that the patient with bipolar disorder has experienced sometime in the past a manic or hypomanic episode (that is, an episode of affective disturbance characterized by increased activity and talking, elevated, irritable and/or expansive mood, flight of ideas, grandiosity, and decreased need for sleep). The person with major depression experiences only depressive episodes.

Major depression and bipolar disorder differ by age of onset, treatment response, prevalence, and risk factors (Hirshfeld and Cross, 1982). Most important for this discussion, the sex ratios for bipolar disorder are about equal, so that being female is not specifically a risk factor for bipolar disorder. Depressive symptoms are also more common in women than in men. However, they are heterogeneous and probably include a variety of psychiatric and medical conditions (Boyd et al., 1982). Therefore, this chapter will focus on major depression, unless otherwise indicated.

How Common is Depression in Women?

There is little doubt that major depression is a common disorder. Community surveys show that from 20 to 30 percent of adult women experience a major depression at some point in their lives (Boyd et al., 1982; Weissman et al., 1982), although the exact rate varies. In a 1975 survey of more than 500 persons over the age of 25 living in New Haven, Connecticut, we found that on the day of the inter-

view nearly four percent of the women were in the midst of a major depressive episode, and only about one-third had received any treatment for their depression (Weissman et al., 1981). These findings were replicated in the 1981 Epidemiologic Catchment Area (EAC) Study that included nearly 15,000 persons 18 years and older, living in three urban areas (New Haven, Connecticut, Baltimore, Maryland, St. Louis, Missouri), and based on *DSM-III* criteria for major depression (Myers et al., 1984; Regier et al., 1984). In one of the few community surveys that focused exclusively on adolescents, it was found that 19.7 percent of adolescents (aged 14 to 18) were bothered by feeling sad or depressed in the past year. The rates of symptoms were higher in females (Kandel and Davies, 1982). Currently in the United States there are no community studies on the syndromes of depression in adolescents. Suicide attempts, another reflection of depression in young women, also have a high prevalence, estimated annually at 100/100,000 among men and women of all ages. Although specific age and sex rates have not been presented (Weissman, 1974; Wexler et al., 1978) the rates for younger women would be much higher.

Risk Factors

How Does Age Affect the Risk for Females?

Recent community surveys of rates of depression, as well as the indirect evidence from the rates of suicide attempts, suggest that younger women have the highest rates of depression.

Hirschfeld and Cross (1982) noted a higher prevalence of depressive symptoms in young adults (aged 18 to 44 years) than in older adults. The highest rates of depressive symptoms were found in women younger than 35 years of age, while the peak prevalence in men occurred during the 55- to 70-year-old age range. Kandel and Davies (1982) found that adolescent females had more often reported feeling sad and depressed than did their mothers. The rates were lowest in adolescent boys and their fathers.

Consistent with the findings from community studies, evidence available from clinical studies also suggests higher prevalences of the depressive syndrome in younger populations than in older groups. In an ongoing study of a heterogeneous group of depressed and manic patients, 61 percent of the 902 patients sampled were younger

than 40 years of age (Hirschfeld and Cross, 1982).

The Weissman and Myers (1978) survey of New Haven found considerably higher lifetime rates of major depression in persons aged 26 to 45 where the lifetime rate was 23.8/100, as compared to persons aged 65 and older where the lifetime rate was 14.4/100. At all ages, women had higher rates than did men.

The higher lifetime rates in the younger age group that had been at risk for shorter periods of time suggest an increasing incidence of depression in younger age cohorts. Explanations, including memory or acknowledgment problems, or selective survival of the elderly, are also possible. The higher lifetime rates of depression in younger persons is a consistent finding and has been replicated in a study of families of depressives (Weissman et al., 1984a), in the ECA Study (Weissman et al., 1984b), and in a large family study of birth cohort trends among relatives of patients with affective illness (Klerman et al., 1985).

Physiological Events in a Woman's Life Cycle

It is useful to consider common recurring physiological events in a woman's life cycle, which may explain the increased risk of depression in families.

Premenstrual period. Premenstrual tension (PMT) includes feeling irritated, bloated, tense, and blue during the 3 to 5 days before the onset of menses. Although reported by many women, these feelings usually do not occur with regularity in all women, and recent studies suggest that they do not seem to change a woman's actual performance at home or work, nor to be particularly apparent to others.

There is no conclusive evidence, thus far, to suggest that women are more vulnerable to the depressive syndrome during the premenstrual period (Weissman and Klerman, 1977). It is unclear whether the blue feelings reported by some women in the premenstrual phase are related to major depression, or whether they have a physiological basis. Investigations relating mood changes to the phases in the menstrual cycle by use of modern endocrinological methods and sensitive quantitative hormonal assays have been under way at Columbia University in New York and at Massachusetts General Hospital in Boston. The clinical studies thus far completed at Columbia University point out the complexity of the problem;

for example, that there are some subtypes of PMT that resemble some subtypes of affective disorders (Endicott et al., 1981; Halbreich et al., 1982, 1983).

Contraceptive medication. While there is widespread suspicion that oral contraceptives "cause depression," it is unclear from the studies thus far whether there is a physiological basis for any association (Weissman and Klerman, 1977). If a relationship exists between the use of oral contraceptives and the onset of depression, the relationship could just as well be associated with the psychological conflicts over preventing pregnancy or unwanted exposure to sexual relationships, as it could be to the pharmacologic ingredients of "the pill." A small number of women may be sensitive to steroid hormones in oral contraceptives. However, scientists have not been able to determine whether oral contraceptives increase the risk of depression on a pharmacological basis.

Postpartum period. The "new baby blues," mild and transitory feelings of sadness and tearfulness, are so common in the first few weeks following childbirth that they are considered "normal," rarely require treatment (Cox et al., 1982; Nott, 1982; Weissman and Klerman, 1977), and usually are self-limited. However, for a small number of women, a longer postpartum period of up to six months does carry a risk of more serious clinical depression (Nott, 1982, Pitt, 1982). Moreover, women who have previously become clinically depressed (not just mildly blue) in the postpartum period are at much greater risk for another recurrence with subsequent pregnancies and deliveries. The postpartum period does increase the risk of depression, but we do not know whether this is due to biological reasons such as hormonal changes, to the psychological reasons such as fear of responsibilities for the care of a child, or to changes in the marital relations.

The menopause. Despite conventional wisdom and popular folklore, the current data from several excellent epidemiologic studies in the United Kingdom, the United States, and Scandinavia show that women in the menopausal period are not at an increased risk for depression (Weissman, 1979). While the menopause is not directly relevant to a study of depression in younger women, there is an indirect relevance. Although there appears to be a decrease in depression among older women, the increase in the overall rates

of depression suggests that it is the younger women who are contributing to the increase.

The decrease in the occurrence of menopausal depression, called "involutional melancholia," may be a recent trend in the United States, the United Kingdom, and Scandinavia. The decrease in the rates of depression in the menopausal years seems to be counterbalanced by an increase in rates among the younger age groups.

Is the Sex Difference Due to Genetic Transmission?

There is little question that major depression is a family affair. Persons who have a family history of major depression in their first degree relatives are at an increased risk (about two- to threefold) themselves for developing a major depression, minor affective disorder, or both (Gershon et al., 1982; Weissman et al., 1982).

A parent who is depressed dramatically increases the risk that his or her children (under the age of 18) will be depressed. The effect on the children is nearly doubled if both parents are depressed (Weissman et al., 1984b). Moreover, the onset of depression can begin at quite a young age in the children. The data on sex differences in the rates of depression among prepubertal children are unclear.

Alternatively, if a child has a depressed parent, there is a high probability that both parents will be depressed, since there is a high degree of assortative mating for depression (Merikangas, 1982). It is unclear whether depressed persons are attracted to and marry other depressed persons or persons vulnerable to depression, or whether being married to a depressed person is depressing; that is, the time sequence of the onset of the depression—pre- and post-marriage—and the family history and personality characteristics of depressed mates have not been fully studied, although such research is currently under way. It is also unclear whether the gender of the person first depressed increases the probability that the mate will later become depressed.

A major unresolved issue is whether this increased risk of depression in biological relatives of depressed probands is genetic and, if so, whether it can explain the sex differences. A greater frequency of a disorder in one sex is a genetically interesting phenomenon. One possible explanation is X-linkage; that is, the location of the relevant locus on the X chromosome. For an X-linked locus,

If the trait is dominant, females (with two X chromosomes) will be affected more commonly. A rare X-linked recessive trait will seldom appear in the parents of children of an affected male, but will always be found in both the father and all sons of an affected female. A rare X-linked dominant trait will usually appear in the mother and all of the daughters of an affected male, and will occur in at least one parent and at least one-half of the children of an affected female. The exact frequency with which first-degree relatives are affected is also a function of the allele frequency in the population and of the mating pattern. Based on assumptions of random mating and an X-linked dominant trait, for every affected male sibling of an affected female, there would be three affected female siblings.

The results of family studies investigating X-linkage are conflicting. Perris has reported data consistent with X-linked transmission for major depression but not for bipolar disorder. However, Helzer, Winokur, Reich, and others found data suggesting X-linkage for bipolar disorder but not for major depression. The inconsistency of the findings has continued into recent studies as well. Gershon and his co-workers have found no evidence for X-linkage of bipolar affective disorder in a study in Jerusalem (Weissman and Klerman, 1977).

Another possible explanation for the different incidences in the two sexes is a differential interaction of genotype and environment depending on gender. A sex effect can be seen as evidence for a differential threshold, with the less commonly affected gender having a higher threshold (Weissman and Klerman, 1977). The underlying liability is determined by a combination of genetic and environmental factors.

Possible genetic transmission as an explanation of the increased risk of major depression in women has been investigated by Merikangas and colleagues (1985). If the sex difference is related to the genetic transmission of a disorder, in family studies, relatives of the less prevalent sex of the proband would have higher rates of the disorder. Thus, if the sex difference in major depression were related to genetic factors, it would be expected that relatives of male probands would have higher rates of depression than would relatives of female probands. This principle has been demonstrated for several other complex human disorders with a genetic component and an increased prevalence in one sex, such as stuttering and Tourette's Syndrome.

If rates do not differ among relatives of male and female pro-

bands, one can conclude that the sex difference in prevalence of the trait is not due to genetic transmission of that trait. This explanation is true for the majority of multifactorial genetic models that have been applied to complex human disorders.

Examining data on over 1,000 first degree relatives of 133 probands with major depression and 82 matched normal controls, Merikangas and colleagues (1985) found that the sex of the proband was not involved in the transmission of depression, because relatives of male and female probands had equal rates of depression. The results suggested that the increased prevalence of depression in women cannot be attributed to genetic factors responsible for the transmission of depression. Sex of the proband was not associated with different risks for relatives.

The sex difference can therefore be attributed to nontransmissible factors. Major depression, however, is probably heterogeneous as to etiology. These results may not apply to all subtypes of the disorder. Furthermore, genetic factors may be involved in other factors (such as endocrine), which may be related to the penetrance of the disorder.

Rice and colleagues (1984) reached similar conclusions. In a study of 523 families of affectively ill probands, they found equal sex ratios of bipolar disorder in relatives and increased rates of major depression in females, which persisted when relatives were classified by a variety of subtypes of major depression. There was a maternal effect for primary major depression, which applied equally to both sisters and brothers of probands. These findings on sex differences are compatible with a cultural or a nongenetic biological mechanism in transmission. While the findings suggest that genetic factors cannot explain the preponderance of women in rates of depression, genetic factors are likely to be important in the transmission of some form of major depression for both sexes.

Marriage

Being married. In a few attempts to test the hypothesis that the high rates of depression are related to the disadvantages of the woman's social status, particular attention has been given to differential rates of mental illness among married and unmarried women. If this hypothesis is correct, marriage should be of greater disadvantage to the woman than to the man, since married women are likely to embody the traditional roles and therefore should have

higher rates of depression. Gove, in particular, has focused his research on examining rates of mental illness among married women and married men. Gove and his associates (see Weissman and Klerman, 1977) found that the higher overall rates of many mental illnesses among females are largely accounted for by the higher rates for married women. In each marital status category, single, divorced, and widowed women have lower rates of mental illness than men. He concluded that being married has a protective effect for males but a detrimental effect for females. In a community study of adults in upstate New York, Ensel (1982) found that only one group of married women was at high risk for depression. These were young women aged 17 to 24. One out of every three young married females suffered from depression. However, unmarried women in general had the highest rates of depression, suggesting that it was not marriage per se but the age of the married women that was contributing to their increased rates of depression.

The Gove hypothesis about married women was not replicated by Weissman and Myers in their 1975 survey of New Haven, nor in the New Haven 1980 ECA study (Leaf et al., in press). The discrepancy here may have to do with the definition of depression. When depressive symptoms in the 1975 survey are studied—irrespective of diagnosis—the rates of symptoms, ranked lowest to highest, are for married men; married women; single and widowed women; single, widowed, and divorced men; and separated and divorced women (Hirschfeld and Cross, 1982). However, for major depression, rates are somewhat lower for married persons and for those with an intimate heterosexual relationship.

Marital status, marital relationships, and sex differences in rates continue to be an important area of investigation. The data that unmarried women have lower rates of mental illness than unmarried men, but that married women have higher rates than married men, while not replicated in all studies, are cited as evidence that the excess of depressive symptoms in women are not due entirely to biological factors intrinsic to being female but, rather, are contributed to by the conflicts generated by the traditional female role. However, the fact that younger aged women seem to be at greater risk for depression is a provocative finding that should be pursued.

The quality of the marriage. The fact of a marriage per se may not be as important in contributing to depression as is its quality. Lack of an intimate and confiding heterosexual relationship

and marital disputes have been shown to be related to depression in women. Brown and Harris (1978) studied the relationship between life events and depression in a sample of women in the community, and found that lack of an intimate and confiding heterosexual relationship increased the risk for depression in the face of life events. Confidants other than spouse or boyfriend did not have as protective an effect. Rather, the general levels of satisfaction and intimacy in the heterosexual relationship, and the amount of emotional support that her partner gave the woman in her role, were the important factors in preventing depression in the face of life stress. Employment outside the home also was a protective factor, although much less so. As interpreted by Brown and Harris, employment provided a protective effect by alleviating boredom, increasing self-esteem, improving economic circumstances, and increasing social contacts.

The association between poor interpersonal relations within the marriage and clinical depression is further supported by studies of depressed women during psychiatric treatment (Roy, 1978). Rounsaville and colleagues (1979) found that depressed patients, more often than nondepressed patients, reported marital discord to be the most common event in the previous six months. Weissman and Paykel (1974) found that acutely depressed women, as compared to matched normal controls, reported considerably more problems in marital intimacy, especially in the ability to communicate with the spouse. Moreover, these marital problems were enduring and did not completely subside with the women's symptomatic remission of the acute depression.

Leaf and colleagues (in press) found that the six-month rates of major depression were 45/100 among women who said they were not getting along with their spouse. When married women aged 18 to 44 were interviewed, the rates were even higher. It is impossible to interpret the direction of causality between marital problems and depression in a cross-sectional study, and either may be the cause. Merikangas and colleagues (1983) found that there was a high degree of assortative mating in the depressed women. While assortative mating did not impact on the course of the symptomatic illness, it did relate to the course of social functioning of the patient. Depressed women with an affectively ill spouse had much poorer social functioning over a two-year period following the index episode, and a much higher divorce rate. The divorce and separation rate was higher for all depressed patients, and it was

even higher (27 percent) among the couples concordant for depression in comparison to the discordant couples (four percent). It is unclear whether assortative mating impacts differently on men and women.

The breakup of the marriage. There is no question that separation and divorce increase the risk of depression in both men and women, and this can occur even in the person who initiated the separation or divorce (Bloom et al., 1978). Interestingly, however, we have found that women are more likely to come for treatment of depression during the marital breakdown and dispute period, whereas men rarely seek treatment until after the dissolution of the marriage by separation or divorce, when they become aware of the lost nurturance of the marriage. This suggests that marital disruption impacts differently on men and women (Rounsaville et al., 1979).

For many persons, however, divorce represents one of the more serious disruptions of personal-bond attachments, even if those attachments were negative. For women, divorce also means the loss of the role of wife to that of being a single woman, usually accompanied by a change in financial status, perhaps assumption of outside work, new friends, and the complications of raising children as a single parent, (Kessler and McRae, 1982).

Small Children

Several studies have suggested that the presence of small children may contribute to depression in young women (Brown and Harris, 1978; Hare and Shaw, 1965; Richman, 1978; Roy, 1978). In their London survey, Brown and Harris (1978) found the following: loss of a mother in childhood; three or more children under the age of 14 living at home; the already noted absence of an intimate and confiding relationship with husband or boyfriend; and lack of full-time employment outside of the home, were highly predictive of depression in women in the face of life stress. Taken together, these results suggest that an intimate supportive marriage can be protective and serve as a buffer for a woman, but that chronic marital problems and lack of intimacy may be more considerably detrimental than being single or being married with many small children. Unclear is the role of personality and how much it may predispose to marital and parental problems and divorce (Briscoe and Smith, 1973; Brugha et al., 1982; Henderson et al., 1981).

Death of a Loved One

Grief is a normal reaction to the death of a loved one, and usually resolves within two to four months. Abnormal grief is a specific problem arising from an inability to go through the usual process of mourning. Persons at increased risk for depression are those who have lost a loved one and do not go through a normal grieving reaction, or allow themselves an opportunity for recovery and reconstitution of their lives. Women, therefore, are at increased risk to depression to unresolved grief because, demographically, they are at much higher risk for grief. Despite the recent decrease in mortality in men, there is still a considerable differential in life expectancy between men and women. Today, women live an average of four to seven years longer than men. Compounding the life expectancy differential between men and women is the fact that most women are younger than the men they marry. Therefore, the majority of women who marry, even if the marriage does not end in divorce, can expect to spend nearly 10 years alone as a widow. Fortunately, grief is not a common experience among young women, but studies by Clayton (1981); Kraus and Lillienfeld (1979), and Parkes and Brown (1972) have shown that the experience of widowhood is much more difficult for younger women than for older women.

Moving

Moving has always been a strong characteristic of the American way of life. Throughout our history, changing patterns of agriculture and industry have encouraged the enterprising and the courageous to pull up stakes. Today, approximately 18 percent of our population—40 million people—makes at least one move each year. Americans of every class and income constantly move in larger numbers, and moving is much more common among the young under the age of 25. For young professionals, particularly, frequent and distant moves may be necessary to insure progress in their careers.

Only in recent years, however, have the psychological effects of mobility on family life been noted. The impact can be compounded if the woman is educated and wishes to pursue an independent career, and especially during the years when her children are young.

Moving can increase the risk of depression, especially for women,

even if the move is voluntary and results in greater financial rewards and better standards of living (Hull, 1979). Since moving occurs more frequently among younger persons, young women are at increased risk.

The Changing Role of Women

Rising expectations, access to new opportunities, and efforts to redress the social inequalities of women have been suggested as risks for depression. Depressions may occur not when things are at their worst but when there is a possibility for improvement and a discrepancy between one's rising aspirations and the likelihood of fulfilling them. The Women's Movement, government legislation, and efforts to improve educational and employment opportunities for women have created higher expectations. Social and economic achievements often have not kept pace with the promises, especially in a tightening job market, and in situations in which longstanding discriminatory practices perpetuate unequal opportunities.

New career expectations for women may also create internal personal conflicts, particularly among those women who want traditional families as well as employment and recognition outside the home. While the Women's Movement has mainly involved middle- and upper-class educated women, the Movement has had an impact on women from other social classes where opportunities for work outside the home, management of money, dominance in the marriage, and so forth, may be difficult. Even among educated and economically comfortable women there continues to be ambivalence and conflict about careers not conventionally seen as feminine. Clayton et al. (1980), Pitts et al. (1979), Welner et al. (1979), and others have found very high rates of depression in female M.D. and Ph.D. professionals, which were related to prejudice and conflict in their training and employment.

There have been several studies on the impact of women's employment on their own and on their spouse's mental health (Cochrane and Stopes-Roe, 1981; Ensel, 1982; Kessler and McRae, 1982; Warr and Parry, 1982). The results are conflicting. They show that working wives and housewives do not differ in type or prevalence of psychiatric disorders (Newberry et al., 1979); that paid employment and the woman's well-being depend on the quality of her job and her nonoccupational involvement (Warr and Parry, 1982); that paid employment increases the woman's well-being, but

not necessarily that of her spouse (Kessler and McRae, 1982); and that age and/or cohort of the working woman may be important factors in the impact of work on the woman's emotional health (Ensel, 1982).

The changing role of women and the present socioeconomic situation may have an impact on a number of areas. The Women's Movement increased the opportunities and expectations for women in employment and in education. These increased expectations came at a time of constraints in real opportunities for both men and women. Easterlin (1982), an economist, relates the constraints in opportunities to demographic changes. He notes that more people were born between 1946 and 1957 than were born in the previous 30 years. Thus, this generation—now young adults—is encountering more competition for everything—jobs, education, housing, and the like. There is greater economic pressure, and therefore a whole series of psychological strains, as a consequence of this pressure. The strain is particularly intensified as women have also entered the labor and career forces at the same time that opportunities are more competitive for everyone.

The data here are inconclusive. Srole and Fischer (1980), in a 20-year follow-up study of the overall mental health and impairment of a cohort of over 1,000 men and women living in midtown Manhattan in 1954, found no significant deterioration in the mental health of either the men or the women over the 20-year period. When different birth cohorts were examined by comparing the mental health of men and women aged 40 to 59 in 1954 (that is, born 1895–1914) with the mental health of men and women aged 40 to 59 in 1974 (born 1915–1934), they found that the younger women (those born in the latter birth cohort) experienced an improvement in their mental health. The authors attributed this improvement to the enhanced social and economic conditions of women.

Recent research on the specific mental disorders does not replicate Srole and Fischer's findings of a decrease in psychiatric disorders among the more recent birth cohorts. When lifetime rates of psychiatric disorders were obtained retrospectively, an *increase*, not a decrease, in the lifetime rates of both the men and the women in the younger age group has been found, suggesting that there may be an increasing, not decreasing, incidence of psychiatric disorder in young people (Klerman et al., 1985). We also found a decreasing age of onset for depression (Weissman et al., 1984a). The measure of psychiatric illness used in the Srole and Fischer

work differs from that used in the recent studies, and the retrospective nature of the recent studies may be obscuring changes in rates. Studies of the changing incidence of psychiatric disorder over time, using population samples, is a fruitful area of pursuit. Support for the hypothesis that the women's movement is associated with psychological distress is unclear and contradictory. It is unlikely that it is the major factor for the excess of depression in women, since the high rates of depression among women substantially antedate the Women's Movement.

Implications for Prevention

Definitions of Prevention

There are at least three levels of prevention: primary, secondary, and tertiary (Mausner and Bahn, 1974). *Primary* prevention is prevention of a disorder by altering susceptibility or by reducing exposure in individuals who are susceptible but not yet ill. Primary prevention requires an understanding of the risk factors that render a person susceptible or exposed. For chronic nonpsychiatric diseases, this often requires modification of deeply rooted behaviors associated with diet, smoking, physical activity, and the like. *Secondary* prevention is the early detection and treatment of a disorder, in which its progression is slowed or its complications and disability are reduced. Tertiary prevention consists of limiting the disability and rehabilitation in those cases in which a disorder has already occurred and left residual damage. This discussion focuses only on primary and secondary prevention.

Risk Factor Research

Preventive intervention strategies should be based on a solid foundation of research that has isolated and identified the persons, periods, and situations or risks for depression. The salient areas include:

1. broad community-based epidemiologic studies that use consistent and operationalized diagnostic criteria to overcome the problem of reporting and response set, that are longitudinal to detect changes in incidence and prevalence and associated risk

- factors, and that include younger age groups
2. cross-cultural epidemiologic studies, using consistent and similar diagnostic criteria, to determine whether depression is less frequent in females in nonindustrialized countries, or in countries where women have had consistently longer periods of equal access to the labor market
 3. longitudinal studies of the help-seeking patterns and rates of depression of women who do not assume the traditional female roles, especially in countries where women have achieved increased emancipation
 4. further research on the genetics of major depression, including the less severe forms of the disorder, and examination of the rates of depression in first degree relatives of depressed patients, to determine whether they fit frequencies and patterns consistent with a particular mode of inheritance
 5. endocrine studies of the relationship between hormonal changes and mood, particularly during the menstrual cycle and during use of oral contraceptives
 6. close surveillance of changes in rates by sex, marital, and women's occupational status as they relate to changing demographic and economic factors
 7. epidemiologic community-based studies of children and adolescents, to determine the incidence and prevalence rates of depression and the sex ratios of depression in children, and to relate the rates to risk factors at an early age
 8. studies of children at risk, particularly the young children of depressed parents (including nonpsychiatrically ill parents and parents with a chronic physical illness), to determine the early signs of disorder in children; to determine when and how the sex differences in rates of depression become manifest; and to determine whether there are differentiated risk factors by sex (such studies are currently underway at several university centers)
 9. longitudinal studies of young couples considering marriage, to determine the prevalence, sequence, and factors contributing to assortative mating.

Education of Professionals Seeing Young Women

The risk factors for depression in women are childbirth and child-rearing, marital problems, separation and divorce, and mov-

ing. There are many excellent treatments for depression, both pharmacologic and psychotherapeutic, whose efficacy has been established through controlled clinical trials. However, epidemiologic studies show that most depressions are untreated (Shapiro et al., 1984; Weissman et al., 1981). Women are treated in the health care system with great frequency and are mostly seen by professionals who are not psychiatrists. Therefore, general and family practitioners, college health personnel, pediatricians, obstetricians/gynecologists, and nonmedical mental health personnel—particularly those who see young women during periods of risk—should be educated in the recognition of depression, the available treatments, and the timing of referrals. The increased awareness might provide early detection of cases and appropriate intervention (that is, secondary prevention for persons already symptomatic, and primary prevention for those who are not).

Appropriate and early treatment might also reduce chronicity, as clinical follow-up studies indicate that untreated depressions have high rates of chronicity (Keller et al., 1982a). Education of the medical professional should also include training in the methods of taking a detailed family history. There is little question that depression is familial. Depressed women have increased frequency of a depressed spouse, parents, siblings, and children, especially young children. Alternately, depressed children often have one or more parents who are depressed. This finding has implications for persons treating adults and children. The familial nature of depression should be considered and inquired about when the patient is depressed. This information could lead to primary prevention for unaffected family members, and secondary prevention through early case finding for affected family members.

There are now several simple systematic interviewing methods to detect depression in adults and in children. After brief training, these methods can readily be administered by nonmedical personnel and could become part of standard medical and mental health practice. The training could be incorporated into medical and nonmedical professional (such as social workers and nurses) education, or as part of CME programs for physicians or other professionals.

Preventive Intervention Trials

In discussing intervention trials, it is useful to differentiate between primary and secondary prevention. Several specific pre-

ventive intervention trials are suggested by the data thus far. These are:

1. *Separation/divorce.* A study to test out the efficacy of various psychological treatments during the separation/divorce period. This would be primary prevention.
2. *Family therapy for depression.* A study to test the efficacy of family therapy for depressed patients, especially where there is evidence of assortative mating. This would provide secondary prevention for the patient and ill family members and, possibly, primary prevention for the family members who are not symptomatic.
3. *Moving.* A study to test the efficacy of brief psychological preparation of families that are about to move. This would be primary prevention.
4. *Marital disputes.* A study to test the efficacy of conjoint marital therapy versus individual therapy in depressed patients with marital disputes. This would be secondary prevention for the spouse who is depressed and primary prevention for the spouse who is well.
5. *Distressed at-risk individuals.* A study to identify women at high-risk periods in apparent preclinical distress, and to determine the efficacy of early identification and supportive intervention. The populations could include young women during periods of transition, such as when entering the labor force or when entering or leaving college, young women with more than three children, women in marital crisis, or women in prolonged periods of new-baby blues. The detection of these women at risk might best be conducted in high schools and colleges, and in pediatric, obstetric, or primary care settings, but not in psychiatric settings.
6. *Bereavement.* A study to test the efficacy of widow-to-widow programs, versus individual counseling of young widows, in enhancing social functioning and preventing unresolved grief. This would be primary prevention.

Summary

There is little question that being young and female increases the risk of being depressed. The increased rates of depression in women

have been documented over many years. The gradual increase in the rates among young women seems to be a more recent phenomenon. While periods of increased risk can be documented, the precise nature of the risk, whether it is related to biological vulnerability or changes in social conditions, is quite unclear. The changing incidence of depression in young women, if documented by properly designed longitudinal studies (none are currently available), would argue against a strictly biological hypothesis. However, the consistency of the findings on rates in women across Western cultures and different educational groups would argue against a strictly environmental hypothesis.

This chapter has outlined some of the diagnostic problems and the gaps in evidence, as well as suggested areas of possible fruitful research. There is little doubt, however, that the sex difference found in depression is a promising lead. It is highly unlikely that any one of the explanations already described will be the sole factor accounting for the phenomenon, or that all types of depressions will be associated with the same risk factors. As was shown, the explanations cross such a wide variety of disciplines that rarely are all interactions entertained by any one group of investigators. There has been an unfortunate tendency for fragmentation, so that the investigators in genetics, social psychology, or endocrinology are not specifically aware of attempts by their scientific colleagues to deal with similar phenomena. While there is a gap in understanding the reasons for the increased rates of depression in women, there is considerably less gap in understanding periods and persons at risk. Given the considerable advances in the detection and treatment of depression over the last two decades, there are now many fruitful opportunities for preventive intervention at several levels.

References

- American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III). Washington DC, American Psychiatric Association, 1980
- Bloom B, Asher SJ, White SW: Marital disruption as a stressor: a review and analysis. *Psychol Bull* 85:867-894, 1978
- Boyd JH, Welssman MM: The epidemiology of affective disorders: a reexamination and future directions. *Arch Gen Psychiatry* 38:1039-1046, 1981

- Boyd JH, Weissman MM, Thompson WD, et al: Screening for depression in a community sample. *Arch Gen Psychiatry* 39:1195-1204, 1982
- Briscoe BW, Smith J: Depression and marital turmoil. *Arch Gen Psychiatry* 29:811-817, 1973
- Brown GW, Harris T: *Social Origins of Depression*. London, Tavistock, 1978
- Brugha T, Conroy R, Walsh N, et al: Social networks, attachments and support in minor affective disorders: a replication. *Br J Psychiatry* 141:249-255, 1982
- Clayton PJ: Bereavement, in *Handbook of Affective Disorders*. Edited by Paykel ES. London, Churchill Livingstone, 1981
- Clayton PJ, Marten S, Davis MA, et al: Mood disorders in women professionals. *J Affect Dis* 2:37-46, 1980
- Cochrane R, Stopes-Roe M: Women, marriage, employment and mental health. *Br J Psychiatry* 139:373-381, 1981
- Cox JL, Connor Y, Kendell RE: Prospective study of the psychiatric disorders of childbirth. *Br J Psychiatry* 140:111-117, 1982
- Easterlin RA: *Birth and Fortune: The Impact of Numbers on Personal Welfare*. New York, Basic Books, 1980
- Endicott J, Halbreich U, Schacht S, et al: Premenstrual changes and affective disorders. *Psychosom Med* 43:519-529, 1981
- Ensel WM: The role of age in the relationship of gender and marital status to depression. *J Nerv Ment Dis* 170:536-543, 1982
- Gershon ES, Hamovit J, Guroff JJ, et al: A family study of schizoaffective, bipolar I, bipolar II, unipolar, and normal control probands. *Arch Gen Psychiatry* 39:1157-1172, 1982
- Halbreich U, Endicott J, Schacht S, et al: The diversity of premenstrual changes as reflected in the Premenstrual Assessment Form. *Acta Psychiatr Scand* 65:46-65, 1982
- Halbreich U, Endicott J, Nee J: Premenstrual depressive changes: value of differentiation. *Arch Gen Psychiatry* 40:535-542, 1983
- Hare EH, Shaw GK: *Mental Health in a New Housing Estate*. Maudsley Monograph 12. London, Oxford University Press, 1965
- Henderson S, Byrne DG, Duncan-Jones P: *Neurosis and The Social Environment*. London, Academic Press, 1981
- Hirschfeld RMA, Cross CK: Epidemiology of affective disorders: psychosocial risk factors. *Arch Gen Psychiatry* 39:35-46, 1982

- Hull D: Migration, adaptation, and illness: a review. *Soc Sci Med* 13A:25-36, 1979
- Kandel DB, Davies M: The epidemiology of depressive mood in adolescents. *Arch Gen Psychiatry* 39:1205-1216, 1982
- Keller MB, Shapiro RW, Lavori PW, et al: Recovery in major depressive disorder. *Arch Gen Psychiatry* 39:905-910, 1982a
- Keller MB, Shapiro RW, Lavori PW, et al: Relapse in major depressive disorder. *Arch Gen Psychiatry* 39:911-920, 1982b
- Kessler RC: Marital status and depression: the role of coping resources. *Social Forces* (in press)
- Kessler RC, McRae JA: The effect of wives' employment on the mental health of married men and women. *American Sociological Review* 47:216-227, 1982
- Klerman GL, Lavori PW, Rice J, et al: Birth cohort trends in rates of major depressive disorder among relatives of patients with affective disorder. *Arch Gen Psychiatry* 42:689-693, 1985
- Kraus AM, Lilienfeld AM: Some epidemiologic aspects of the high mortality rate in the young widowed group. *J Chron Dis* 10:207-217, 1979
- Leaf PJ, Weissman MM, Myers JK, et al: Psychosocial risks and correlates of major depression in one United States urban community, in *Mental Disorder in the Community: Progress and Challenge*. Edited by Barrett J. New York, Guilford Press (in press)
- Mausner J, Bahn A: *Epidemiology*. Philadelphia, WB Saunders, 1974
- Merikangas KR: Assortative mating for psychiatric disorders and psychological traits. *Arch Gen Psychiatry* 39:1173-1180, 1982
- Merikangas KR, Spiker DG: Assortative mating among inpatients with primary affective disorder. *Psychol Med* 12:753-764, 1982
- Merikangas KR, Bromet EJ, Spiker DG: The relationship of assortative mating to social adjustment and course of illness in primary affective disorder. *Arch Gen Psychiatry* 40:795-800, 1983
- Merikangas KR, Weissman MM, Pauls DL: Genetic factors in the sex ratio of major depression. *Psychol Med* 15:63-69, 1985
- Myers JK, Weissman MM, Tischler GL, et al: Six-month prevalence of psychiatric disorders in three communities: 1980-1982. *Arch Gen Psychiatry* 41:959-967, 1984
- Newberry P, Weissman MM, Myers JK: Working wives and housewives: do they differ in mental status and social adjustment? *Am J Orthopsychiatry* 49:282-291, 1979

- Nott PN: Psychiatric illness following childbirth in Southampton: a case register study. *Psychol Med* 12:557-561, 1982
- Parks CM, Brown R: Health after bereavement: a controlled study of young widows and widowers. *Psychosom Med* 34:449-461, 1972
- Pitt B: Depression and childbirth, in *Handbook of Affective Disorders*. Edited by Paykel ES. London, Churchill Livingstone, 1982
- Pitts FN, Schuller B, Rich CL, et al: Suicide among U.S. women physicians. *Am J Psychiatry* 136:694-696, 1979
- Regier DA, Myers JK, Kramer M, et al: the NIMH Epidemiologic Catchment Area program: historical context, major objectives, and study population characteristics. *Arch Gen Psychiatry* 41:934-941, 1984
- Richman N: Depression in mothers of young children. *J Royal Soc Med* 71:489-493, 1978
- Rice J, Reich T, Andreasen NC, et al: Sex-related differences in depression: familial evidence. *J Affect Dis* 71:199-210, 1984
- Rounsaville BJ, Weissman MM, Prusoff BA, et al: Marital disputes and treatment outcome in depressed women. *Compr Psychiatry* 20:483-490, 1979
- Roy A: Vulnerability factors and depression in women. *Br J Psychiatry* 133:106-110, 1978
- Shapiro S, Skinner EA, Kessler LG, et al: Utilization of health and mental health services: three epidemiologic catchment area sites. *Arch Gen Psychiatry* 41:971-978, 1984
- Srole L, Fischer AK: The midtown Manhattan longitudinal study vs. 'the mental paradise lost' doctrine. *Arch Gen Psychiatry* 37:209-221, 1980
- Warr P, Parry G: Paid employment and women's psychological well-being. *Psychol Bull* 92:498-516, 1982
- Weissman MM: The epidemiology of suicide attempts, 1960 to 1971. *Arch Gen Psychiatry* 30:737-746, 1974
- Weissman MM: The myth of involuntional melancholia. *JAMA* 242:742-744, 1979
- Weissman MM, Klerman GL: Sex differences and the epidemiology of depression. *Arch Gen Psychiatry* 34:98-111, 1977
- Weissman MM, Myers JK: Affective disorders in a United States community: the use of research diagnostic criteria in an epidemiologic survey. *Arch Gen Psychiatry* 34:1304-1311, 1978

- Weissman MM, Paykel ES: *The Depressed Woman: A Study of Social Relationships*. Chicago, University of Chicago Press, 1974
- Weissman MM, Myers JK, Thompson WD: Depression and its treatment in a U.S. urban community, 1975-76. *Arch Gen Psychiatry* 38:417-421, 1981
- Weissman MM, Kidd KK, Prusoff BA: Variability in the rates of affective disorders in the relatives of severe and mild major nonbipolar depressives and normals. *Arch Gen Psychiatry* 39:1397-1403, 1982
- Weissman MM, Leaf PJ, Holzer CE, et al: The epidemiology of depression: an update on sex differences in rates. *J Affect Dis* 7:179-188, 1984a
- Weissman MM, Prusoff BA, Gammon DG, et al: Psychopathology in the children (ages 6-18) of depressed and normal parents. *J Am Acad Child Psychiatry* 23:78-84, 1984b
- Weiner A, Martin, S, Wochnik E, et al: Psychiatric disorders among professional women. *Arch Gen Psychiatry* 36:169-172, 1979
- Wexler L, Weissman MM, Kasl SV: Suicide attempts 1970-75: updating a United States study and comparisons with international trends. *Br J Psychiatry* 132:180-185, 1978