

Effects of Stress on Women

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It is common knowledge that recent societal changes are associated with alterations in illness patterns among women. Though woman's longer life expectancy implies that she generally sustains life's stresses better than the male, there is cause for concern in that certain previously male morbidity and mortality trends have been advancing in the female population. Elimination of stress-related disorders among women requires definite stress-reduction measures to be taken by society and by the woman herself.

The term stress, despite its popularity in the professional and lay literature, has relatively little value for the scientist because it cannot be satisfactorily or objectively defined. What is stressful for one individual may be pleasurable for another or, alternatively, have little significance either way. Stress has become increasingly implicated in a variety of physical and emotional disorders or complaints, which in turn are usually linked to changing societal or occupational demands. Illness patterns among women have changed dramatically since the turn of the century particularly in the past few decades. This may be due to the stress imposed by abrupt changes in roles and social status, attendant upon the women's movement, pressures for the Equal Rights Amendment, increased divorce rates, disruptive family relationships, and women's steady migration into all areas of the work force. Female role models have changed dramatically. At one time, being a homemaker and mother was in itself a fulfilling, desirable, and respectable goal. In today's society, housewives are apt to be denigrated or looked down on. Now there is a premium on so-called upward mobility that involves liberation from household chores, which are viewed as demeaning.

Today, a woman may feel inadequate if she is not engaged in some attractive profession, successful

business, or social venture. She is expected to be up-to-date on the latest behavioral aspects of child rearing; involved in PTA, den mother, or chauffeuring activities; and at the same time learning to excel at golf, tennis, bridge, boating, skiing, or other skills supposedly needed to keep up with a husband, boyfriend, or other females. To some, it seems as though modern

fast take

Frustration breeds stress: The subordinate who has little decision-making authority or control over the outcome of her job duties is in a much more stressful position than her boss, who exercises authority and control over the work situation.

society expects a woman to "act like a lady, think like a man, and work like a dog".

There is nothing new about that. Unquestionably, women sustain increasing responsibilities as more and more of them have to assume the father's role in a rapidly rising number of single-parent households. Some support parents and relatives by working at jobs where they face discrimination and sexual harassment

Many authorities consider work-related stress the chief health problem in the 20 to 65-year old group in the United States today. Customarily we think of job stress in terms of the hyperfrenetic, harried, coronary-prone male executive, striving to reach the top of the corporate ladder, but increasing numbers of Type A females are now joining those ranks. Significantly, studies of occupational stress make it clear that it is those who are bossed, rather than those who do the bossing who suffer more work-related illness. Such nonexecutive stress appears to occur predominantly among subordinates in occupations involving the psychological strain of heavy responsibility, but relatively little decision-making control over outcomes. Many of these are traditionally female occupations, such as waitress, telephone operator, assembly or garment worker, cashier, or sales clerk.

It is not necessarily the nature of the job that imposes stress and its consequent health risks; it is, rather, the individual's perception of the status and social significance of her occupation and its compatibility, or incompatibility, with her own goals, talents, and personality. This was illustrated dramatically in a study done more than 30 years ago of nearly 2,000 telephone operators. Significant differences were noted between those who were habitually or chronically sick and those who were relatively free of illness. Most of the individuals in the chronically sick group had a professional background and a high school or some college education. They tended to describe their duties as confining or boring and generally considered themselves stuck with the wrong jobs. They were often unhappy at home as well as at work and appeared to experience repeated series of small crises in their lives. Indeed, their illnesses seemed to occur in "clusters" that coincided with such crises.

In contrast, most of the healthy workers came from lower middle class backgrounds and had an elementary school education. As a group, they appeared to be content with their lot in life, and felt that their jobs were satisfying and not overly complex or difficult. Generally, their attitudes also carried over into their home lives, which they found equally satisfying. They usually got along better than members of the chronically sick group with fellow workers and family members. This group's expectations had been fulfilled: their backgrounds, aspirations, and interests were compatible with the circumstances of their occupation. As a consequence they were more stress-resistant, despite the fact that in their daily lives they were exposed to a variety of external stressful events usually associated with increased illness patterns.

As we have mentioned, new sources of job stress should be anticipated for women as they enter occupations and activities previously dominated by

Table 1 **Stress Reduction Techniques**

Self-Directed Techniques
Prioritization of activities and objectives
Physical exercise — jogging, aerobics, running
Recreation: hobbies, sports, travel
Individual activities and occupational therapies: knitting, needlepoint, painting, sculpting
Social support systems: any group activity, involvement in service or social organization, religious activities
Behavioral Approaches
Examination of life goals
Identification of stressors
Recognition of harmful personality traits
Behavioral modification with stress inoculation techniques
Relaxation Training
Meditation
Guided imagery
Progressive muscular relaxation exercises
Hypnosis
Isolation tank
Biofeedback
Muscle tension control
Temperature control
Galvanic skin response
Pharmacologic
Sedatives
Tranquilizers
Antidepressants
Beta blockers

Source: Rosch PJ and Hendler NH: Stress management. In Health Promotion: Principles and Clinical Applications, RB Taylor (ed.), East Norwalk, Conn., Appleton-Century-Croft, 1982.

men: athletic competition and work areas once the province of men, such as mining, police and fire duties, racing thoroughbreds, or rocketing into space. There is likely to be a tacit implication that women must have superior qualities to achieve such roles or positions. Consequently, there will be greater expectations for outstanding performance. Any deficiency will probably be attributed to their membership in the "weaker" sex.

Changing Patterns of Stress

During the Victorian era, when women were repressed and subjected to rigorous, demanding, and unappreciated domestic duties, ulcers were a female disease, and 7 women developed ulcers for every 3 men so afflicted. As mechanical and electrical appliances and social and medical advances began to make life easier for women, the ratio changed dramatically: by the middle of this century, 9 out of 10 ulcer patients were male. The pendulum is now swinging back in the other direction, as women increasingly enter highly competitive and often frustrating business, professional, and political activities.

At the turn of the century, cigarette smoking, serious alcoholism, heart attacks, or lung cancer were rarely observed in women. Federal officials now estimate that 1 out of every 3 problem drinkers is female; the figure was 1 out of 6 only a decade ago. A 1977 Rand Corporation study revealed that working

wives had significantly more drinking problems than housewives or single employed women.

Many female executives reported to the investiga-

fast take

Women entering male-dominated job fields are exposed to stresses previously associated almost exclusively with men. Peptic ulcer, a disorder prevalent among homebound Victorian females, dropped among women as housework became easier, but rose among male jobholders. Today it is on the rise among women who work.

ors that in order to compete with men, it is necessary to "go out and drink with the boys" to attract clients. This is facilitated by an expense account, which subsidizes the habit.

Table 2 Mean Psychosocial Scores Among Housewives, Working Women, and Men Ages 45-64 at their 8th or 9th Biennial Medical Examinations

Psychosocial Scales Grouped According to Differences by	Housewives (350)	Working Women (387)	Men (580)
Sex			
Emotional lability	.36	.37	.30
Tension	.36	.40	.25
Anxiety symptoms	.21	.20	.11
Anger symptoms	.30	.31	.18
Anger-in	.51	.54	.47
Educational mobility	2.38	2.37	2.53
Employment			
Framingham Type A	.31	.38	.39
Ambitiousness	.37	.48	.51
Marital disagreement	.14	.18	.17
Sex and Employment			
Daily Stress	.27	.33	.29
Anger-out	.13	.10	.12
Marital Dissatisfaction	.22	.27	.19
Aging worries	.16	.19	.15
Occupational mobility	1.80	2.02	1.81
Job changes in past 10 years	—	.51	.36
Line of work changes in past 10 years	—	.33	.25
Times promoted in past 10 years	—	.46	.57

Table 2. Working women consistently demonstrated the highest scores in tests for the presence of psychosocial stress factors.

Source: SG Haynes and M. Feinleib: Women, work and coronary heart disease: prospective findings from the Framingham Heart Study. *Am. J. Pub. Health* 70(2):133-141 February 1980 Reprinted with permission

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Over the past 15 years, the percentage of men who smoke has dropped steadily, but the percentage of women with the habit has remained the same or increased. Today, more teenage girls than boys smoke. Working women, incidentally, tend to inhale more than do other female smokers. Lung cancer is increasing so rapidly among women that it will soon exceed cancer of the breast as the leading malignancy in females.

Stress is acknowledged to play a significant role in the development and course of almost every illness, from arthritis, and migraine to herpes and cancer. Perhaps the greatest concern in changing illness trends today centers about the increasing incidence of heart attacks in women. There is evidence here of a strong relationship to occupational and psychosocial stress.

Some studies, such as the National Heart lung and

Blood Institute review of the Framingham data, suggest that working women in general are not at greater risk than housewives for heart attacks. There is, however, a 100 per cent increase in heart attacks among such workers as secretaries, typists, clerks, and bookkeepers over those among housewives. The common denominator here appears to be that the office worker is in a situation where she is unable to express anger or emotions such as hostility. She is literally not able to ventilate her resentments. Such individuals are likely to work for nonsupportive and unappreciative bosses, who provide little recognition or reward for consistently good job performance over years of service. Women in such dead-end clerical jobs who also have large families appear to be at even greater risk. In a popular magazine article, one reviewer concluded: "If anything is threatening the health of American

Table 3 Mean Scale Scores for CHD Cases and Noncases among Women Ages 45-64 in Clerical Occupations

Psychosocial Scales	Clerical Occupations	
	Cases (115)	Noncases (127)
Behavior Type		
Framingham Type A	.41	.37
Emotional Lability	.34	.33
Ambitiousness	.54	.45
Non-easygoing	.18	.23
Reactions to Anger		
Anger-in	.64	.52
Anger-out	.02	.12
Anger-discuss	.38	.63
Situational Stress		
Nonsupport from boss	.38	.13
Marital dissatisfaction	.24	.23
Marital disagreement	.16	.19
Aging worries	.14	.21
Personal worries	.09	.15
Sociocultural Mobility		
Job changes in last 10 years	.13	.77
Line of work changes in past 10 years	.26	.38
Time promoted in past 10 years	.71	.95
Educational mobility	2.17	2.35
Occupational mobility	2.13	1.97
Social class mobility	2.07	2.02
Somatic Strain		
Tension state	.47	.36
Daily stress	.37	.30
Anxiety symptoms	.21	.18
Anger symptoms	.23	.30

Table 3. Higher incidence of psychosocial stress factors was found among working women who developed coronary heart disease.

Source: SG Haynes and M. Feinleib: Women, work and coronary heart disease: prospective findings from the Framingham Heart Study. *Am J. Pub. Health* 70(2):133-141 February 1980 Reprinted with permission

women. It is not liberation but the lack of it." Just as external reactions vary, it is likely that internal physiologic, biochemical, and neuroendocrine changes vary in different groups despite the fact that the stressor is apparently identical for all. Obviously, stress means different things to different people. Furthermore, it is not necessarily the event or stimulus that is important, but the individual's perception of it.

Type A Behavior in Women

In addition to its generation by life change events and noxious stimuli, stress can also be self-generated. This is best illustrated by the concept of the Type A coronary-prone behavior pattern, developed by Rosenman and Friedman. After more than 30 years of studying heart attack victims, they realized that such suspected causes as smoking, diet, and exercise accounted for less than half the cases seen. They were impressed with a factor poorly defined, but apparently related to "maleness."

Coronary-prone individuals exhibited varying degrees of certain behavioral characteristics. These include self-imposed standards that are often unrealistically ambitious and inflexibly pursued. Associated with these is a need to maintain productivity in order to be respected, a sense of guilt while on vacation or relaxing, an unrelenting urge for recognition or power, and a competitive attitude. Persistent vigilance, anticipation, and impulsiveness are characteristic, as is pursuit of several lines of thought or action simultaneously (e.g., eating, reading, or writing while talking on the telephone).

Coronary-prone individuals often manifest hyperac-

fast take

The notorious Type A or coronary-prone personality, not uncommon among men, is now being seen with increasing frequency in women. It is perhaps more widespread among working women than among working men because women generally experience greater frustrations on the job.

tive responsiveness by a tendency to interrupt or finish a sentence in conversation, usually in dramatic fashion, by varying speech, volume, and/or pitch, or by alternating rapid bursts of words with long pauses for emphasis. Type A people tend to be poor listeners. They often interrupt conversations or signal the speaker to finish prematurely by nodding the head, grunting, or using some gesture to indicate that the point being made has been anticipated or is irrelevant.

Also involved in the Type A personality are aggres-

The Type-A Dozen

All people have some characteristics in common with the coronary-prone Type A personality. The woman who can answer more than half of the following statements affirmatively fills many of the Type A specifications. If she agrees with 9 or more, it would be prudent for her to take steps toward stress reduction.

1. I work best when under the pressure of a deadline.
2. I usually talk louder and faster than others and emphasize my point by facial expressions or gestures with my hands.
3. Winning is very important to me, even if I am playing with a child.
4. I rarely take time out to admire things of natural beauty, such as a sunset or a decorative work of art.
5. I become upset if I find someone performing a task slower than I can do it and feel that if I really want something done, I must do it myself.
6. Just lying on a beach for a week and doing nothing would never be pleasurable for me.
7. Standing in line or being behind a slow driver makes me impatient even when I have plenty of time.
8. I am more concerned with what other people think of me than with my own opinion of myself.
9. I always feel rushed and if at all possible, try to do more than one thing at the same time.
10. I tend to interrupt people when they are talking to me or to others.
11. I like to be on time, but dislike arriving early and waiting around.
12. It is better to do many things fairly well than a few things excellently.

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siveness and hostility, and a low threshold of anger and frustration if goals are not achieved. Type A's often adopt an attitude of bravado about their own superiority and can be fierce in competition. Both characteristics frequently contribute to poor interpersonal relationships. There is also increased muscular activity: gestures, motions and facial grimaces, gritting and grinding of teeth, or tensing jaw muscles. Fist pounding to make a point, fidgeting, foot tapping, or playing with a pencil in rhythmic fashion are other favorites. These physical manifestations of the Type A personality are often associated with irregular or unusual breathing patterns, with frequent sighing produced by inhaling more air than necessary during speaking and then releasing it during the middle or at the end of a sentence for emphasis. Very recent research suggests that such disturbed respiratory patterns may be an important factor in the pathogenesis of essential hypertension.

It is significant that Type A people often have few hobbies or diversions outside their work and usually feel guilty when they relax. They also tend to have poor health habits: they smoke and drink more than average, and indulge in rich foods. Except for a hard-fought competitive game of golf or tennis, they avoid regular physical exercise, which they consider boring.

Type A coronary-prone behavior is increasingly being recognized as the most significant risk factor for coronary heart disease (CHD) in a number of large prospective studies. The association of elevated cholesterol, high blood pressure, and cigarette smoking with CHD may be due mainly to the fact that they are also manifestations of Type A behavior, or consequences of its associated increase in epinephrine and norepinephrine secretion. Attempts to reduce heart attacks by removing such standard individual risk factors have generally failed, as shown by the recent 7-year Multiple Risk Factor Intervention Trial, in which hypertensives treated with diuretics had a greater incidence of heart attacks than did controls.

In contrast, two other studies conducted over this same period were so successful that they were terminated prematurely so their controls would not be deprived of the obvious benefits of intervention. One trial was designed to remove harmful Type A behavioral traits; the other examined the effects of propranolol in reducing recurrent heart attacks. Both of these highly effective strategies were directed toward reducing the secretion, or blunting the effects, of stress-induced catecholamines, which are known to cause direct myocardial damage and sudden death.

Type A behavior has been described in some detail because it is peculiarly relevant to today's female population. As women enter the competitive work force in increasing numbers, we can expect to see

among them more Type A behavior, with all its adverse health consequences. Indeed, a recent study in the United Kingdom revealed that senior female executives had significantly higher Type A behavior scores than did male executives, presumably because the women were more competitive and their need for achievement was greater.

Men are expected to strive for the external trappings of success — money, social status, and job promotions — but women are not. We expect women to be grat-

fast take

Built-in stress will be found in the fact that women in all job descriptions, in all sizes of firms throughout this country, earn far less than their male counterparts even when positions and experience are identical. The U.S. Department of Labor reports that women earned proportionately less in 1981 than men did in 1955.

fied simply by the self-satisfaction of a job well done. Clearly, such distinctions and differences in attitude exist, but we seldom acknowledge them. Type A male behavior is often reinforced by respect; while a woman who acts in the same aggressive fashion is apt to be denigrated with derogatory remarks that provide additional sources of stress.

I suspect that Type A and coronary-prone behavior are not synonymous and that certain components, such as aggressiveness, hostility, and time urgency, may be more predictive of CHD. Further, it is likely that the aggressive Type A individual, constantly frustrated by self-imposed unrealistic goals, is at greatest risk. Many Type A people and others who are apparently under severe stress lead long, healthy, productive lives and appear to thrive on such behavior, provided it is productive, fulfilling and results in pride and satisfaction. Analysis of such stress-resistant personalities reveals that they tend to be creative, have a strong commitment to what they are doing, are in control of their lives, and enjoy responding to challenges.

Successful, prominent women generally live longer. Several years ago, the Metropolitan Life Insurance Company followed more than 2,000 women who had been listed in a 1964-1965 edition of *Who's Who In America*. Only 438 had died, while 617 deaths were expected, on the basis of mortality trends for women of similar ages in the general population. Thus, prominent women had 29 per cent fewer deaths, paralleling the finding of a similar study done 2 years before, which showed that such women had 30 per cent fewer deaths than men did generally.

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None of the foregoing should be misconstrued as suggesting that bright, ambitious, upwardly mobile, successful, energetic, productive women should change their ways or aspirations. However, it would be prudent for them to reflect on the appropriateness of their activities in a specific work environment where such talents are not yet appreciated or are not likely to come to fruition because of inherent sex discrimination that may even be unintentional. This is borne out by a recent 1983 survey of salaries that disclosed that women in virtually all job classifications, in all regions of the country, for all company sizes, and all levels of relevant work experience earn much less than their male counterparts. Significant differences exist even between men and women with equivalent experience occupying identical positions. This may be difficult to endure for female workers who were promised equal rights and an absence of discrimination. As a consequence, female workers may suffer increased stress and intensified Type A behavior, or depression, frustration, and a sense of helplessness, all of which have been shown to have negative health consequences.

Stress Reduction for Women

Obviously, stress is a complicated and highly personalized phenomenon. Being out of control is obviously stressful, particularly to women in the work setting.

Job stress is well recognized, with costs to industry in the United States estimated at \$75-100 billion annually in terms of absenteeism, diminished productivity, and direct health costs. Consequently, many corporations have instituted stress reduction programs, some of which recognize the particular problems women face. Many of these have proved extremely cost effective, such as flexible working arrangements, which permit accommodation to changing family needs.

In some instances, rearranged work schedules allow a mother to meet psychological responsibilities associated with a child's education, or duties at home that cannot be accomplished within the constraints of a rigid 9 to 5 schedule. Limiting the number of work days a week or working hours in the day has been extremely effective; there are increasing trends in this direction. Some organizations provide community-based nurseries or on-site facilities for the care of preschool children.

With the advent of the microcomputer revolution and telecommunication capabilities, a certain proportion of female employees can carry out many of their duties at home. Reasonable maternity leave, with some financial security during this period and a guaranteed right to return to work, has been a major advance for working women.

It is also important for working women to receive

acknowledgment and support at home. Intellectually, many husbands encourage their wives' careers, but often fail to do so on an emotional or psychological level, since their female role model is apt to be a mother at home. They still expect their working wives to perform the household chores, and resent being asked to assist in such activities. Here again, the situation is slowly changing; the next generation will find such shared responsibilities far more palatable. They may even be agreed upon ahead of time as part of the marriage contract.

There are a variety of ways to reduce stress or

fast take

Stress-reduction innovations in the work place are seen increasingly, including flexible work schedules and part time to allow a woman to meet responsibilities associated with children and home. On-site and community day care are more common, as are improved maternity benefits.

diminish its harmful effects (Table 1), but none is uniformly effective, and individual responses vary. Despite all the problems noted above, women are more resistant to stress than men are; this may account for their greater life expectancy. A baby boy born today has a life expectancy of less than 71 years, while the figure for baby girls is more than 78 years. The gap appears to be widening, and by the year 2000 it is predicted that there will be 150 women for every 100 men aged 65-74. In standardized situations, women are apparently not affected as negatively by stress and achievement frustration as men.

The greatest source of stress for modern women appears to be the increasing tendency toward development among women of Type A behavior patterns in male-dominated professions. Often, this is a consequence of goals or standards brought about by peer or societal pressures rather than true individual needs and desires. All of us share some of these characteristics and I have listed a dozen. The woman who checks more than half of these tends to fit the Type A mold. If she checks 9 or more, it might be advisable for her to reevaluate her goals and priorities and consider those approaches which might reduce stress in her life. She might at least seek strategies to modify inappropriate and potentially damaging responses. As in the approach to all patients, it is important not only to treat her symptoms, but to identify and eliminate their causes as well. In stress-related illness, it may be much more important to identify the kind of patient who has the disease than to identify the kind of disease the patient has. □

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