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Abstract

Objective. To evaluate the relative contribution of gender-related work conditions, gender-related socialization practices, and disease characteristics to the explanation of emotional distress in men and women with rheumatoid arthritis (RA).

Methods. Three hundred sixty-nine RA patients who were employed outside the home were recruited from a national randomized sample of rheumatology practices. Data on paid work and disease characteristics were obtained by telephone interview. Emotional distress was measured by the Center for Epidemiological Studies Depression (CES-D) scale. Hierarchical ordinary least-squares regression was used to assess the relationship of sex, class, work characteristics, and disease characteristics to both the CES-D summary scale and the CES-D factor structure.

Results. Differences in emotional distress were explained best by functional ability and pain and secondarily by the characteristics of paid work, with no independent effect for sex. Distress increased with decreasing functional ability, increasing pain, and exposure to such work characteristics as low autonomy, low income, and high demands. No sex differences in any of the CES-D subscales remained after controlling for disease and work variables.

Conclusion. Among employed RA patients with high levels of functional disability and exposure to stressful work characteristics, men and women are at equal risk of experiencing emotional distress.

The prevalence of depression among women exceeds that among men, whether depression is measured by symptom reports in community studies (1–4), by the diagnosis of major depression obtained in community studies (5), or by numbers of treated cases (6, 7). A female excess in rates of depression and depressive symptoms has been demonstrated in studies from both the US and from western Europe (for review, see ref. 1). Studies of men and women with rheumatoid arthritis (RA) are consistent with this, showing a similar sex differential in distress both on self-reports of depressive symptoms (8) and on diagnostic interviews (9).

Evidence gathered from studies in the general population suggests that two social processes may help explain sex differentials in emotional distress. The first is a process of "differential exposure." In this view, the source of differences in distress is women's excess exposure to stressful work conditions, such as low substantive complexity (10), low work autonomy (11–13), high work demands, and low income (14, 15), rather than any essential difference between men and women (for review, see ref. 16). The second process concerns socialization patterns that result in sex-specific ways of expressing distress. This line of reasoning holds that men may learn "typically male" ways of expressing distress, that are not measured by depressive symptom inventories (5, 17–21) or that result in men underreporting "typically female" depressive symptoms and overreporting other depressive symptoms that are more gender neutral (22–25).

In this study, we explored these two perspectives in a group of employed men and women with RA. First we asked whether the reported excess of depressive symptoms among women (after controlling for disease characteristics) is due to their differential exposure to stressful paid work conditions. Next, we tested the idea that even when men and women have similar levels of distress, they have different ways of expressing it. In con-

trast to other researchers, who investigated for different modes of expressing distress, such as increased consumption of alcohol, acting out, and depressive symptoms (10, 17), we looked for different levels of intensity in clusters of symptoms thought to be central to the experience of depression.

In order to explore the possibility that men and women may have different ways of expressing distress even if their overall intensity of symptoms is similar, a new approach to the analysis of self-reported depressive symptoms is required. The usual approach is to calculate one summary score as a continuous measure. This procedure implicitly assumes that depression is a unidimensional construct. We have used an alternative approach based on the 4 underlying dimensions of the Center for Epidemiological Studies Depression (CES-D) scale measurement structure (26). With this approach, we have shown that among people with RA, those whose scores remained consistently high on the CES-D over years improved in negative affect but deteriorated in positive affect. They became more hopeless and yet they reported lower levels of negative affect such as feeling blue, sad, or depressed, or crying (27). We have also shown that a 4-factor CES-D model has a significantly better fit to the data than a single- factor model (28).

The hypotheses we tested in the present study were as follows: 1) Differences in overall emotional distress between men and women will be best explained by the characteristics of their paid work. 2) Men and women will report different scores on the underlying dimensions of distress: men will report lower levels of negative affect and higher levels of somatic complaints than women. 3) Differences between men and women in negative affect and somatic complaints will persist even when differences in the CES-D summary score have been controlled for.

Patients and Methods

Patient recruitment. The data for this analysis were obtained from a large, national panel study of people with RA. The sample was first recruited in 1988, using a two-stage process to ensure that it represented RA patients who visit board-certified rheumatologists across the US for their care. First, a sample of 116 board-certified rheumatologists was randomly selected from the membership of the American College of Rheumatology. Fifty-six rheumatologists agreed to participate. In the second stage, staff in participating physicians' offices offered patients with a diagnosis of classic or definite RA the opportunity to hear more about the study. Although attempts were made to collect data on the patients who refused participation in relation to the number who were seen, the physicians' offices were unable to furnish these data. Thus, little in-

formation was available on patients who did not wish to learn more about the study. This limits the generalizability of the results. Nine hundred eighty-eight (94%) of the patients who initially expressed interest agreed to be interviewed in the first year. Five hundred one of these respondents were in the paid workforce in the first year.

Depressive symptoms. Depressive symptoms were measured by the CES-D (26). Because our analyses and much of the literature in this area rely on self-report scales of symptom intensity such as the CES-D, we refer to depressive symptoms as emotional distress. Although the CES-D scale was originally developed to measure depressive symptoms in community populations, recent concerns about its discriminant validity suggest that researchers should interpret scores more broadly as indicators of distress (29–31).

The CES-D scale consists of 20 questions chosen to reflect various aspects of depression, including depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance (26). Respondents were asked to think of the last week and report the frequency of occurrence for each item on the following 4-point scale: (a) rarely (<1 day), scored as 0; (b) some of the time (1–2 days), scored as 1; (c) a moderate amount of the time (3–4 days), scored as 2; or (d) most or all of the time (5–7 days), scored as 3. Total scores can range from 0 to 60. The scale is internally consistent and shows test-retest stability, as well as concurrent validity and construct validity (26).

Sex variable. The sex of each respondent was determined by self-report in the telephone interview. We used the sex variable to investigate the possibility of interactions between being a female or a male and being in a particular category of any other variable, such as income. This allows for an exploration of the effect of traditional male and traditional female work characteristics, such as level of personal income, apart from the sex of the person occupying the position (e.g., while women usually earn less than men on average, individuals or groups of men may be underpaid as well).

Disease severity. Disease severity was indicated by levels of pain and functional ability. Participants were asked to rate their pain in the previous week on a scale of 0-100, with 0 representing no pain at all and 100 representing the most pain possible. Such self-report scales are sensitive indices of pain in RA (32). Functional ability was measured by the Modified Stanford Health Assessment Questionnaire (HAQ) (33). This is a 13-item scale with demonstrated validity and reliability which measures self-reported mobility and the ability of people with arthritis to perform self-care activities. Scores on the HAQ range from 0 to 3.

Work demands. Work demands were measured by 3 questions developed by Karasek et al. (34). They include the worker's report of how often he or she had to juggle conflicting demands at work, how often there was not enough time to complete the tasks at work, and how often there was too much work. Responses are on a 5-point scale ranging from never to always.

Schedule autonomy. Information on schedule autonomy was obtained using 5 questions developed by Yelin et al (35) regarding the individual's assessment of his or her freedom to

decide when to come in to work, take a rest break, take time off for a doctor visit, take a day off, and take a week off. The possible responses for each item are that it can be done independently, it can be done by telling a supervisor, it can be done by asking permission, or it cannot be done at all.

Both the demands and the autonomy measures are self-reports of work conditions. Because they are self-reports, there is the possibility that people who are more distressed will perceive that their work environment offers them less freedom or is more demanding. To balance the subjective nature of these two indicators, we included two objective measures of the paid work environment, i.e., class status and personal income, both widely recognized as correlates of a worker's well-being.

Class status. Class status was measured by the Hollingshead Two Factor Index of Social Position (36). This index consists of a weighted score of the person's occupation rating from 1 of 7 strata and the education level from 1 of 7 strata. The 2 scores are then weighted, summed, and divided into 5 levels (1 = high class status, 5 = low). In the present study there were very few subjects in classes 1 and 5; therefore, class 1 was combined with class 2, and class 5 was combined with class 4, resulting in 3 social class levels. Class status was used as an indicator of the worker's locations on the reward and control dimensions of work (11).

Personal income. Data on personal income were obtained by self-report. Respondents were asked to identify the income category that included their own personal income from any source. While personal income from any source could reflect income other than wages and salary, it was used rather than family income since we expected that it would capture more of the gender-related stratification of work that is reflected in the wage differential between men and women.

Data analysis. Interaction terms were computed for sex (male or female) and each of the 6 other independent variables, as well as for autonomy and demands. The first set of interaction terms was created to offer a clearer picture of the additional risk associated with any category of an independent variable because of the sex of the subject. For instance, while a low-wage job may pose difficulty for anyone, it may be particularly distressing for men, who may feel that they are not fulfilling a traditional provider role (37). The interaction between demands and autonomy was investigated to assess whether, as posited by Karasek et al. (34),demands and autonomy have a multiplicative rather than an additive effect.

The measurement structure of the CES-D was obtained using LISREL 8 (28, 38). We labeled the 4 dimensions of the structure as follows: Negative Affect, Positive Affect, Interpersonal Relations, and Somatic Complaints. Negative Affect reflects feeling blue, depressed, lonely, and sad, and crying. Positive Affect reflects feeling as good as others, happy, enjoying life, and hopeful. Interpersonal Relations reflects feeling that life has been a failure, fearful, that others are unfriendly, and that one is disliked by others. Somatic Complaints reflects feeling unusually bothered by things, eating less, feeling unable to keep one's mind on what one is doing, talking less, feeling that everything is an effort, having restless sleep, and feeling an inability to "get going."

First we examined the univariate distribution of distress for the group as a whole and for men and women separately.

Second, using hierarchical ordinary least-squares regression (OLS), we assessed the relationship of disease and work characteristics to depressive symptom scores. Sex was entered in the first step, class in the second step, disease variables in the third step, work characteristics in the fourth step, and finally the interaction terms were entered in the fifth step. Variables were entered in this order to evaluate a sex differential in distress and then to identify which variables or blocks of variables affected the differential. The analyses were repeated with the logged summary score first as the dependent variable, followed by each of the 4 factor scores as separate dependent variables.

Results

Sample attrition. The data analyzed for this report are from the 369 workers (74%) who remained in the study and were interviewed in the third year. Five hundred one RA patients who were working outside the home participated in the study in the first year. Sixteen percent ($n = 80$) of the original sample had stopped working, and 10% ($n = 52$) had dropped out of the study by the third year. To assess whether the current subjects, whose data are analyzed herein, were systematically different from those who had stopped working by the third year and those who had dropped out of the study, we compared those who were still working and participating in the study with those who were no longer working or who had dropped out for other reasons, in terms of first-year CES-D scores, work demands, autonomy, family income, class status, and disease severity. No significant differences were found for any of the year-1 variables examined. Most importantly, those who were able to stay in the paid workforce were not a less distressed group at the start of the study. However, by the third year of the study, those who were able to remain in the paid workforce reported significantly lower CES-D scores (mean 10, SD 9.8) than those who had stopped work by that time (mean 13, SD 12) (F = 5.4, $P < 0.02$). In addition, the gender gap in terms of distress was reversed among the former workers. By the third year of the study, men who had stopped working had significantly higher scores (mean 17, SD 12) than women who had stopped working (mean 12, SD 11) (F = 3.82, $P < 0.05$).

Sample description. Table 1 shows that the sample of current workers was largely white, middle- aged, and female, with a median annual family income of $30,00&39,99!3 and a mean education level of 13 years. Participants were distributed evenly across the 3 levels of social class. Men were significantly more likely to be married and to have higher family incomes and higher personal incomes. A significant difference in

Table 1. Demographic characteristics of the 369 rheumatoid arthritis patients in the paid workforce*

% female	70
Age	
All	47 ± 9 (21–64)
By sex	
Men	48 ± 9 (25–65)
Women	47 ± 8 (21–64)
Education	
All	13.5 ± 2.2 (6–18)
By sex	
Men	13.5 ± 2.4 (6–18)
Women	13.5 ± 2 (6–18)
% married	
All	69
By sex†	
Men	88
Women	60
% white	
All	89
By sex	
Men	92
Women	88
Median annual family income, $	
All	30,000–39,000
By sex†	
Men	40,000–49,000
Women	30,000–39,000
Median annual personal income, $	
All	20,000–24,000
By sex‡	
Men	30,000–39,000
Women	20,000–24,000
Class status, %	
All	
Low	26
Medium	39
High	35
By sex	
Men	
Low	26
Medium	36
High	38
Women	
Low	26
Medium	39
High	35

* Except where otherwise indicated, values are the mean ± SD (range).
† $P < 0.001$; ‡ $P < 0.0001$

personal incomes (F = 55.9, $P < 0.0001$) between men and women was found after controlling for the number of hours worked (men reported working more hours than women on average).

Depressive symptom scores are displayed in Table 2, for the group as a whole and for men and women sep-

Table 2. Sample description: The Center for Epidemiological Studies Depression scale

Summary score, mean ± SD (range)	
All	10.35 ± 9.8 (0–51)
By sex*	
Men	8.38 ± 8 (0–32)
Women	11.18 ± 10.21 (0–51)
% scoring >16	
All	24
By sex	
Men	16
Women	28

* $P < 0.01$

Table 3. Sample description: Disease characteristics*

Pain	
All	38 ± 29 (0–100)
By sex	
Men	36 ± 28 (0–100)
Women	39 ± 29 (0–100)
Functional ability	
All	0.49 ± 0.44 (0–1.9)
By sex†	
Men	0.33 ± 0.36 (0–1.5)
Women	0.55 ± 0.45 (0–2)

* Pain was rated on a 0-100 scale. Functional ability was rated with the Modified Health Assessment Questionnaire (ref. 33). with possible scores of 0-3. Values are the mean ± SD (range).
† $P < 0.0001$

arately. The mean score for this group of workers with chronic disease was 10.35, which is above the mean of 9.25 for community samples but below the cutoff of 16 which is often used to signify more serious levels of distress (26). Approximately one-fourth of the group did score above 16, however.

As expected, men reported significantly lower (F = 6.3, $P < 0.01$) levels of overall distress than women. Men were also less likely than women to score above 16. Because the CES-D scores were skewed, they were transformed for use in the multivariate analysis, by taking the natural log of the original scores. Even with this transformation, men had significantly lower scores (F = 7.5, $P < 0.01$).

Significant differences were also found when men and women were compared in terms of the 4 underlying dimensions of distress (results not shown). Men reported significantly lower levels of negative affect (F = 11.36, $P < 0.001$), somatic complaints (F = 10.56, $P < 0.001$), and interpersonal relations (F = 6.5, $P < 0.01$). No significant differences in positive affect were seen between the two groups (F = 0.91, $P > 0.33$).

The workers had a mean pain score of 38 (SD 29) of a possible 100 and a functional ability score of 0.49 (SD 0.44) (Table 3). These scores reflect moderate levels of

Table 4. Sample description: Paid work characteristics*

Work demands, mean 2 SD (range)	
All	8.25 ± 2.7 (3–15)
By sex[†]	
Men	7.9 ± 2.7 (3–15)
Women	8.4 ± 2.7 (3–15)
Autonomy, %	
All	
Low	27
Moderate	39
High	34
By sex[‡]	
Men	
Low	28
Moderate	48
High	24
Women	
Low	27
Moderate	35
High	38

* Work demands was scored based on the responses to 3 questions, each answered on a 5-point scale, for a maximum possible score of 15 (ref. 34). Autonomy was assessed based on the responses to 5 questions (ref. 35).
[†] $P < 0.10$
[‡] $P < 0.05$

Table 5. Hierarchical regression of the Center for Epidemiological Studies Depression scale summary score on sex, class, disease characteristics, and work characteristics

Variable	Step 1	Step 2	Step 3	Step 4
Sex	–0.14*	–0.14*	—	—
Class		0.21[†]	0.15*	0.16[†]
Function			0.31[†]	0.27[†]
Pain			0.24[†]	0.21[†]
Own income				—
Work demands				0.15*
Autonomy				–0.12[‡]
Adjusted R²	0.02	0.06	0.28	0.32
Change in R²		0.04	0.22	0.04

* $P < 0.01$
[†] $P < 0.001$
[‡] $P < 0.05$

pain and disability. Men reported levels of pain similar to those reported by women, but had significantly lower levels of functional disability (F = 21.42, $P < 0.0001$). The functional ability scores were positively skewed and were transformed for the multivariate analysis by taking the natural log of the original scores.

Table 4 shows a mean of 8.25 (SD 2.7) of a possible 15 on the work demands scale, reflecting moderate levels of demands. There was a trend toward significantly different scores between men and women (F = 2.4, $P < 0.10$), with women reporting higher levels of demands in their paid work than men. The modal autonomy level for the group was 2 (indicating moderate levels of autonomy). Men and women were differentially distributed across the levels of autonomy (χ^2 = 7.85, $P < 0.05$). While women were fairly evenly distributed across the 3 levels, men were more likely to report moderate levels and less likely to report high levels of autonomy.

The OLS results obtained when the logged CES-D summary score was used as the dependent variable are presented in Table 5. Sex had a significant effect on distress, although it explained little of the variance. Women reported significantly more distress on the summary score than men. Class was also significant, adding 4% to the variance explained. People in

higher social classes reported lower levels of distress. The entry of disease variables increased the R² greatly and eliminated the sex differences in terms of distress. People with worse functional ability and people with higher pain reported more distress. Finally, work characteristics added an additional 4% to the variance explained. People who reported more work demands and those who reported less autonomy in their work schedule reported higher levels of distress. None of the interaction terms were significant. The final model shows that nearly one-third of the variance in depressive symptom scores could be accounted for by class status, disease status, work demands, and work autonomy, irrespective of whether the worker was male or female.

When the Negative Affect dimension was regressed on the same predictors (Table 6), sex was again a significant factor, with women reporting higher levels of negative affect than men. As with the summary score, sex became nonsignificant when disease variables were entered. In contrast to the summary score, higher levels of pain did not have an effect on negative affect; however, worse scores on the functional ability scale remained significant irrespective of sex or class status. None of the interaction terms were significant. In the final step, having more demanding work and having low autonomy in work had significant effects on negative affect that were independent of worse functional ability.

The Positive Affect dimension was distinctive (Table 7). First, there was no sex difference, even at the first step (Table 7). Men and women reported very similar levels of positive affect. Second, class status maintained a sig-

nificant effect even when the full model was run, which was unique to this dimension. The entry of disease variables in the third step added the greatest amount to the variance explained. As with negative affect, only worse levels of functional ability were important, and pain had no independent effect. In the final step, lower class status, worse levels of functioning, and lower levels of autonomy all had independent and significant effects. None of the interaction terms were significant.

The pattern for the Interpersonal Relations dimension was similar to that for both the Negative Affect and the Positive Affect dimensions (Table 8). In the fourth step, with 17% of the variance explained, worse levels of physical functioning and low levels of auton-

omy were the only two significant predictors. However, in the final step, the interaction between demands and autonomy was significant, indicating that subjects with the lowest level of autonomy and the highest level of demands were at excess risk of high scores on this one dimension.

Table 9 displays the OLS results with the Somatic Complaints dimension as the dependent variable. In step 1 there was a small but significant effect for sex, with women reporting more somatic complaints than men. In step 2 there was a small but significant effect for class status, with people of lower class standing reporting more somatic complaints, irrespective of sex. In step 3 with the entry of the disease variables, as in

Table 6. Hierarchical regression of the Center for Epidemiological Studies Depression scale Negative Affect dimension on sex, class, disease characteristics, and work characteristics

Variable	Step 1	Step 2	Step 3	Step 4
Sex	–0.17*	–0.17*	—	—
Class		0.12†	—	—
Function			0.33*	0.28*
Pain			—	—
Own income				—
Work demands				0.10†
Autonomy				–0.12†
Adjusted R^2	0.03	0.04	0.19	0.22
Change in R^2		0.01	0.15	0.03

* $P < 0.01$; † $P < 0.001$

Table 8. Hierarchical regression of the Center for Epidemiological Studies Depression scale Interpersonal Relations dimension on sex, class, disease characteristics, and work characteristics

Variable	Step 1	Step 2	Step 3	Step 4	Step 5
Sex	–0.13*	–0.13*	—	—	—
Class		0.16†	0.12*	—	—
Function			0.30‡	0.25‡	0.25‡
Pain			—	—	—
Own income				—	—
Work demands				—	0.32*
Autonomy				–0.16†	—
Demands × autonomy					–0.39*
Adjusted R^2	0.01	0.04	0.15	0.17	0.18
Change in R^2		0.03	0.11	0.02	0.01

* $P < 0.05$; † $P < 0.01$; ‡ $P < 0.0001$

Table 7. Hierarchical regression of the Center for Epidemiological Studies Depression scale Positive Affect dimension on sex, class, disease characteristics, and work characteristics

Variable	Step 1	Step 2	Step 3	Step 4
Sex	—	—	—	—
Class		0.21*	0.17*	0.19†
Function			0.16‡	0.13‡
Pain			0.14‡	—
Own income				—
Work demands				—
Autonomy				–0.14‡
Adjusted R^2	0.001	0.04	0.10	0.12
Change in R^2		0.04	0.06	0.02

* $P < 0.01$; † $P < 0.001$; ‡ $P < 0.05$

Table 9. Hierarchical regression of the Center for Epidemiological Studies Depression scale Somatic Complaints dimension on sex, class, disease characteristics, and work characteristics

Variable	Step 1	Step 2	Step 3	Step 4
Sex	–0.17*	–0.17*	—	—
Class		0.15*	—	—
Function			0.40†	0.36†
Pain			0.23†	0.19‡
Own income				–0.13§
Work demands				0.15‡
Autonomy				—
Adjusted R^2	0.02	0.05	0.34	0.37
Change in R^2		0.03	0.29	0.03

* $P < 0.01$; † $P < 0.0001$; ‡ $P < 0.001$; § $P < 0.05$

the previous models, the sex effect was lost along with the small effect for class. Both pain and functional ability had independent and significant effects and added 29% to the variance explained. The final model showed that people with worse functioning, higher pain, lower income, and higher work demands reported higher levels of somatic complaints. There was also a trend toward significance for two of the interaction terms, sex × pain ($t = -1.8$, $P = 0.07$) and sex × demands ($t = 1.69$, $P = 0.09$). Women with high levels of pain were more likely than men with similar pain levels to report higher levels of somatic complaints. Women with low levels of work demands were more likely than men with similar demand levels to report higher levels of somatic complaints.

Discussion

In this analysis, we explored hypotheses generated in community samples to further our understanding of the experience of emotional distress among people with rheumatoid arthritis. In particular, we focused on explaining the distress gap between men and women who are working for pay outside the home. The analyses have shown that men and women with RA who are engaged in paid work do differ in the levels of overall distress they report. As expected, men report significantly lower levels of distress on the summary score of the CES-D than do women.

Our first hypothesis was that the characteristics of paid work would be the most important factor in explaining differences in distress between male and female workers. Because of sex stratification in paid work, women are less likely to obtain jobs that offer salaries (14, 15) and autonomy (11–13) on a par with those of their male peers. Thus, we expected that the higher levels of distress among women with RA would exist because women were exposed to more distressing work characteristics. This hypothesis received only limited support, with important qualifications for arthritis research.

We did not find that women with RA were systematically exposed to more stressful work characteristics than their male peers, as we had expected. While women had significantly lower personal incomes and a trend toward more demanding work, they had equal or higher levels of autonomy than men. This unexpected finding may be due to the fact that most of these participants have had RA for 10 years or more. During this time, as workers, they have had various opportunities to seek modifications in the characteristics of their

work that made it easier to remain in the workplace. While women may not have had much success in improving the more intransigent characteristics of work such as income, they may have been able to increase their autonomy. Likewise, they may have reduced the felt demands of work either through improved coping strategies or through changes in their work situation. In other words, male and female workers with RA may become more alike in their work characteristics over time, as those who are less successful in obtaining the more beneficial conditions drop out of the workforce altogether.

Despite the near sex equality in exposure to stressful work characteristics, work characteristics were consistently important in explaining differences in both the summary score and the underlying dimensions of distress. However, the differences in distress between men and women disappeared when disease characteristics were entered. In other words, any bivariate differences in distress, either in the summary score or in the underlying dimensions, were primarily due to the fact that women reported more functional disability than men, rather than more exposure to stressful work characteristics.

The second hypothesis was that men would have different ways of expressing distress that would be evident in the underlying dimensions of Negative Affect and Somatic Complaints. Specifically, we expected to see lower levels of negative affect and higher levels of somatic complaints, as men would find it socially more acceptable to express their distress in physical rather than emotional ways.

Men did have significantly different scores than women on the dimensions of distress. As expected, men had lower levels of negative affect, but they also had lower levels of somatic complaints as well as lower levels of concerns about interpersonal relations. None of the differences between men and women remained after controlling for disease severity and exposure to workplace characteristics. Thus, our third hypothesis was not supported.

We conclude from this that differences on the dimensions of distress between men and women with RA are due to the overall lower levels of symptom intensity in men, not to any tendency to favor a certain cluster of items on the CES-D scale. However, future studies are needed in order to explore the possibility that men are choosing very different avenues for the expression of their distress, as suggested in the literature (10, 17, 18). In this analysis we examined sources of distress both from within (disease characteristics) and from outside (work characteristics) of the individual with RA. By doing this we have shown that sex differences in distress

in workers with RA are due primarily to differences in functional ability. Additional differences in distress between workers, irrespective of sex, can be explained by examining work characteristics. Importantly, this analysis has shown that men who find themselves in work roles that are more frequently experienced by female workers, e.g., underpaid or with high demands, could be at equal risk for experiencing emotional distress.

This analysis has also demonstrated that added information can be obtained by going beyond the CES-D summary score and exploring the underlying dimensions of distress. First, we have shown that, unlike men in general population studies (22, 23, 25), men with RA do not choose a somatic expression of distress over any of the other 3 dimensions. This finding may be due to the fact that all of the men in our sample were adults, while other investigations have studied primarily college students (25). The sex differences in distress observed among college students may not be generalizable to an older cohort.

Second, we have shown that work characteristics and disease characteristics do not relate in the same way to each of the underlying dimensions. Class status and pain are rather uniquely related to only one underlying dimension each. Class status is independently related to positive affect alone, while income, which is correlated with class status, is related to the other three dimensions but not to positive affect. Pain, which is thought to have a ubiquitous relationship with distress, was shown in these analyses to be related to only one dimension of distress, that of somatic complaints alone. In addition, we have shown evidence of subgroups that are at risk for higher levels of distress reflected in the underlying dimensions, which cannot be seen when the summary score is used. The first was a trend for women with high pain and women whose work has low demands to report higher levels of somatic complaints than men who are comparable in these characteristics. The second was a small but significant increase in levels of interpersonal distress among those who report high levels of work demands and have low levels of autonomy.

This is important information because researchers generally use the CES-D as if it were a cohesive reflection of a single underlying concept, rather than a reflection of four underlying concepts that are correlated but distinct. Investigators should start to use this multidimensional approach in order to further our understanding of particular social or disease characteristics that may put individuals at excess risk for emotional distress.

Finally, the findings of this study are generalizable only to men and women with RA who are currently working for pay. Former workers report higher lev-els of distress than current workers, and among former workers, men report levels of distress that exceed those in their female peers by a significant amount. It is beyond the scope of this investigation to explore the factors that contribute to this reversed gender gap, but future studies should assess the relative contributions of work loss, disease severity, and the characteristics of other social roles to which people turn when paid work is lost.

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