



Published in final edited form as:

*J Vocat Rehabil.* 2011 July 1; 35(3): 243–252. doi:10.3233/JVR-2011-0575.

## Workplace social networks and their relationship with job outcomes and other employment characteristics for people with severe mental illness

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### Abstract

Clients with severe mental illness (SMI) often struggle in their efforts to maintain employment. One cause of early job terminations is interpersonal difficulties in the workplace. This study explored workplace social networks and their relationship with job outcomes and other employment characteristics for people with SMI. Results indicated that clients generally had positive experiences with both supervisors and coworkers. Contrary to our hypothesis, employment model was not associated with better workplace network characteristics. Also contrary to our hypothesis, clients employed in group placements did not differ in workplace network characteristics from those in competitive employment settings. Workplace network characteristics were robustly correlated with job satisfaction, but not strongly related to hourly wages or overall job tenure. Job tenure at the time of the workplace network assessment did show a few modest negative correlations with supervisor and coworker support, indicating declining perceived social network support with increasing job tenure. Study limitations and future directions for research using this methodology are discussed.

### Keywords

Social network; supported employment; vocational program; mental illness; social support; job outcome

## 1. Introduction

For persons with severe mental illness (SMI), interpersonal relationships are of particular importance in the workplace, as sources of both support and of stress. Particularly because people with SMI may experience social skills deficits as a result of psychiatric illness [8, 33], the ability to obtain support within the workplace is a critical piece of employment success that may be taken for granted in other populations without such difficulties. For instance, Lysaker and colleagues [27] found that clients with psychotic disorders struggled particularly with friendly communication skills, understanding the behaviors of coworkers, and perceiving how their own behavior impacted coworkers. Social support in the form of positive relationships is hypothesized to be a critical element of job retention among proponents of the use of “natural supports” in supported employment for people with SMI [16, 28, 36]. However, little research has addressed the relationship between natural supports and job characteristics [40]. Anthony and Jansen [2] suggest that a client’s social functioning or social skills are good predictors of job performance and job retention, while poor social functioning may be a critical factor in job loss. Negative symptoms of schizophrenia, often indicative of poor social skills and the ability to obtain needed social support, have also been associated with unemployment [38]. Social interaction and natural supports are associated with better competitive work outcomes for people with psychiatric disabilities [4]. Employment in people with SMI has also been associated with larger social networks [1]. Conversely, Becker et al. [6] found that interpersonal difficulties were a primary factor in unsatisfactory job terminations. Other qualitative work has found interpersonal difficulties in the workplace impact work behavior and confidence [24], while social support may improve the ability to find and/or maintain a job [13]. Researchers have studied ways to supplement supported employment to address interpersonal deficits and other issues to increase job tenure and other work-related outcomes [30, 44].

Social interactions, then, have the potential for both positive and negative effects on employment outcomes for persons with SMI. Predicting the value of these relationships in helping or hindering work outcomes has yet to be rigorously studied. Further, for people with SMI who often struggle with social relationships in general, a supportive workplace network might be considered a positive outcome in itself [8, 33].

To assess workplace social networks, Gates, Akabas, and Oran-Sabia [18] created an instrument used specifically for people with mental illness in the workplace. The instrument asks clients to name members of their work group: supervisors, co-workers whom they work with directly, coworkers with whom they interact socially, other workplace employees they interact with (human resources, medical personnel), as well as union representatives, union assistants, employer assistants, and workplace management who approve job accommodations. After naming all pertinent individuals in the workplace network, the client rated each nominee on several variables: emotional, instrumental, and informational support, and appraisal/feedback. Nominees were also rated on criticism, reciprocity in the relationship, closeness, frequency of contact, length known, and length of work contact. Overall, Gates et al. [18] found that greater network size was related to more informational support, appraisal, and feedback. They also found that coworkers with whom the client socializes provide more emotional support than other non-socializing coworkers and supervisors. From this research, the size of the network and the quality of the network both seem to be important components for study. The quality of the social network might be assessed through both work-oriented support (informational support and appraisal/feedback) and personal support (emotional support).

Rollins [37] compared workplace network characteristics for clients in two types of employment programs. One program, the Diversified Placement Approach (DPA) model

[25], used a stepwise approach to employment where clients start out in prevocational training and progress to sheltered work, agency-run businesses, and sites with contracts for multiple client placements. The other program, the Individual Placement and Support (IPS) model of supported employment [5] used only individual placements in competitive jobs, where client choice is emphasized over job availability. IPS also uses a rapid approach to job search rather than emphasizing prevocational training prior to job search. Based on the method of Gates et al. [18], clients identified coworkers and supervisors with whom they had contact and then rated each on several characteristics of perceived relationships, such as frequency of contact, emotional support, informational support, appraisal/feedback, criticism, stressfulness, and overall satisfaction. Supervisory relationships had the most intense ratings in both positive and negative characteristics, similar to findings from the general population literature [17]. The DPA model was associated with more disclosure, emotional support, and overall satisfaction with relationships, as compared to IPS. The comparison was exploratory, however, using data from completely separate methods of data collection and two distinct samples [37]. In spite of these limitations in methodology, the data provided some helpful insight into the ways that the employment program models might vary in terms of impact on personal network outcomes in the workplace.

Other than the pilot data discussed above [37], very little has been done to explore the relationship between job characteristics and workplace social networks. However, in a study of the related concept of job satisfaction, Resnick [35] found that higher job satisfaction early in a job (assessed in about the first 3 months) was positively correlated with overall job tenure, though job satisfaction tended to decline over time (i.e., when assessed beyond the first 3 months). Bond, Meyer, and colleagues [10] found a strong correlation between job satisfaction and social network characteristics. Supervisor emotional support was strongly correlated with job satisfaction, while perceived supervisory criticism and coworker criticism were correlated with lower job satisfaction. Overall satisfaction with supervisor and coworker relationships also were correlated with greater job satisfaction [10].

Given the potential importance of interpersonal relationships at the workplace for people with SMI [10], the goal of this study was to explore job factors associated with both positive and negative workplace network characteristics. From the previous literature review, network size is a problematic construct that is also an unreliable index for people with SMI [42], thus limiting the usefulness of research questions regarding network size among people with SMI. In one early study, Pattison [34] reported that persons without mental illness were able to name approximately 20 to 30 social network members (including family, friends, neighbors, social and work acquaintances), compared to people with so-called “neurotic disorders,” who were able to name 10 to 12 social network members. Adults with SMI, however, were able to name only about 4 or 5 people, with most of the social network being restricted to relatives. Workplace network quality, on the other hand, has been relatively ignored for persons with SMI in favor of studies using network size and composition as the primary social network variables [7, 21–23, 34, 43]. This leaves a huge gap in our knowledge concerning the qualitative aspects of personal networks in the SMI population. The distinctions between supervisors and coworkers seem to be clear, with a more prominent role for the supervisors than coworkers in impact on work-related and clinical variables [17, 37]. We also have seen that it is imperative to measure both positive, supportive aspects of the social networks as well as the negative, critical aspects of the social network [20] because these two domains have been shown to be independent of each other [14, 41, 42].

Following previous studies and the conventional wisdom in mental health services that group placements and stepwise progression toward competitive employment would be less stressful for clients and facilitate easier establishment of supportive social connections, we

predicted the DPA model and its group and sheltered placements would provide more positive social network qualities than the individual placements provided by IPS. We also predicted that work outcomes of job satisfaction, hourly wages, and overall job tenure would be associated with positive workplace network characteristics.

## 2. Method

### 2.1. Design

The current study was a secondary analysis of data from a controlled trial comparing two employment models for people with SMI [11]. One employment model was a diversified approach that offered a wide range of employment placements (the DPA model). The other model was the IPS model of supported employment. The IPS model is based on seven principles: eligibility based on client choice, focus on competitive employment, integration of mental health and employment services, attention to client preferences, work incentives planning, rapid job search, and individualized job supports [9]. The current study sought to identify factors associated with supportive and negative interpersonal contacts at the workplace for clients with SMI.

### 2.2. Setting

The data were collected at Thresholds, a psychiatric rehabilitation center in Chicago, IL. The center serves a wide range of clients with severe mental illness. Most interviews were conducted at center offices, although in some cases, clients were interviewed at home or at another location (e.g., at the jail, if incarcerated).

### 2.3. Sampling

The sample for the current study consisted of clients who received either DPA or IPS services. Inclusion criteria for the parent study were diagnosis of SMI, age 18 or older, new or recently admitted to the program (admitted to the treatment program in last 30–90 days), unemployed at intake but having a goal of paid employment, and consenting to participate in research follow-up interviews. The final criteria for inclusion, specific to this study, were working in paid employment at the time of at least one follow-up interview as well as completing an assessment of workplace social networks. Altogether, 100 (53%) of the 187 clients in the parent study were included in the current study.

### 2.4. Measures

The Workplace Network Grid (WNG) is an instrument that was developed by Gates, Akabas, and Oran-Sabia [18] and adapted by Mueser, Becker, Drake, and Wolfe [32] for use with IPS clients. The WNG is used to assess perceived social relationships on the job and requires 15–30 minutes to complete. The interview's primary focus is on the client's perception of their social relationships at the workplace. (Although the original instrument calls for an unlimited number of nominees, the instrument for this study was modified to cap the number of nominees at six, as this seems to capture the majority of nominees for people with SMI according to the literature where clients with SMI usually nominate between four and five people [19, 34, 43], and because the focus of this research is primarily on the quality of the relationships rather than the number of nominees.) The interviewer instructs the client to nominate up to six people they see on a regular basis, including at least two supervisors. Other nominees can be coworkers or supervisees. No supervisees were nominated in this sample. For each nominee, the client provided: level of emotional support, criticism, instructional/informational support, appraisal/feedback, stressfulness of the relationship, and overall satisfaction with the relationship. Based on a pilot study using this instrument [37], we calculated the average rating across nominees in a role type (supervisor

or coworker). Workplace network data were gathered every six months for two years, though the earliest WNG completed for paid placement was used. Workplace networks in prevocational settings or other unpaid placements were not examined in this study.

Demographic data, such as ethnicity, age, education, and gender, were collected at baseline.

Client diagnosis was determined via separate diagnostic interviews at baseline, using the Structured Clinical Interview for the DSM-IV [15, 39].

Employment model. In the parent study, clients were randomly assigned to receive either DPA or IPS services (models described above) after the baseline assessment.

Job placement type. Jobs were coded as either group or individual placements, based on previous coding schemes for level of employment [31]. Group placements included: *traditional group placement*: paid community job at a site work alongside other Thresholds' clients; *agency-run business*: paid work activity at a business owned and run by Thresholds; and *sheltered workshop*: paid work activity licensed by the Department of Labor and paid on a piece-rate basis. Individual placements included: *competitive employment*: regular community job, with nondisabled coworkers, paying at least minimum wage, and with no job coach; *DPA individual placement*: employment meeting criteria for competitive employment, but job is procured by an agency through some contract or formal relationship. (Two clients held casual labor jobs and one held a paid training position, which did not fit sufficiently in either category, and were therefore omitted from the job placement classification but were included in other analyses.)

Job tenure was measured in number of days on the job using a variation of the Vocational Update Form [12], administered by interview every six months. Job tenure uses job start date and end date to calculate days on the job (or uses study end date for those still employed at the end of the study). If the client was unsure of job tenure, employment staff and agency databases were consulted to corroborate estimates. Weeks on the job as of the time of the WNG assessment was also collected during the semi-annual interviews, using similar methods.

Job satisfaction was assessed with the 32-item Indiana Job Satisfaction Scale (IJSS) [35], developed for use with clients with SMI. The scale, rated from 1 (low satisfaction) to 4 (high satisfaction), has been factor analyzed and has good internal consistency coefficients (Cronbach's alpha for total scale = 0.90) and test-retest reliability ( $r = 0.75$ ). The scale also predicts job tenure [35]. Job satisfaction was gathered in separate interviews triggered after each client's job start: 2 weeks, 3 months, 6 months, and 9 months after job start with the interview closest to the WNG assessment targeted for this study.

## 2.5. Sample description

Participants in this study were mostly male ( $n = 66$ , 66%), with a mean age of 39.3 years ( $SD = 9.4$ ). Forty-four (44%) were white, 43 (43%) were African American, and 13 (13%) were Hispanic or other minority. The majority of the sample (88%) had at least a high school diploma or higher educational level. Fifty-five (55%) were diagnosed with schizophrenia or schizoaffective disorder, while 45 (45%) were diagnosed with a mood disorder or some other form of severe mental illness (i.e., delusional disorder or psychosis NOS). Participants who were unemployed, or who worked exclusively in prevocational crews, or as volunteers were not included in the study. Fifty-six (56%) of the current study's clients worked in competitive placements. Twenty-one (21%) worked in agency-run businesses. Ten (10%) worked in group placements. Six (6%) worked in individual placements. Four (4%) worked in sheltered workshops. Two (2%) held casual labor jobs.

One (1%) had a paid training placement. No clients were self-employed. Clients had been employed an average of 13.4 (SD = 9.4) weeks at the time of WNG assessment. Overall job tenure for jobs that were the focus of the WNG assessment varied widely, averaging 48.2 weeks (SD = 31.8 weeks). Hourly wages for jobs averaged \$6.92 (SD = \$2.98). Overall job satisfaction ratings were high, with average ratings of 3.2 on a 4-point scale (SD = 0.5).

## 2.6. Procedures

After a thorough baseline assessment of a variety of clinical and vocational variables, the clients were randomized to either DPA or SE, assigned a case manager, and began receiving services from their assigned employment program. Baseline data included diagnosis, demographic data, and work history. Clients were paid \$5–15 for each interview, depending on the length of the interview. The study clients were followed for two years, regardless of program status. All study procedures were approved by multiple Institutional Review Boards affiliated with project investigators and the study site.

## 2.7. Training of interviewers

Interviewers were trained research assistants and the project coordinator for the study. Training for these research staff consisted of orientation to the instruments and surveys, self-practice, practice with each other, and training sessions at the New Hampshire-Dartmouth Psychiatric Research Center on general interviewing procedures. Regular weekly supervision was also used to maintain reliability of procedures over time. For employment outcomes, research staff meticulously triangulated job data across multiple sources, including self-report, agency records, and vocational staff reports.

## 2.8. Data analysis

We dichotomized and conducted t-tests to detect differences in WNG variables for diagnosis, gender, ethnicity, education, type of placement, and type of employment program. We computed correlations between continuous variables (i.e., age, job tenure, weeks worked at time of WNG assessment, and total job satisfaction score from the IJSS) and WNG variables. Because of the risk for Type I error in the volume of analyses conducted, results that are significant at the  $p < 0.05$  level are reported but are considered trends. Results that exceed the  $p < 0.01$  level are considered significant.

## 3. Results

Descriptive statistics for workplace network characteristics are presented in Table 1, indicating that clients had positive experiences with supervisors and coworkers, reporting high emotional and instrumental support and minimal criticism and stress from these relationships. Demographic variables mostly were unrelated to workplace network quality. Younger age showed trends for association with less instrumental support from supervisors ( $r = -0.24$ ,  $p = 0.02$ ) and more criticism from coworkers ( $r = -0.23$ ,  $p = 0.03$ ). Females reported more supervisor criticism ( $t = 2.24$ ,  $p = 0.03$ ) and coworker instrumental support ( $t = 2.03$ ,  $p = 0.05$ ). There were no significant effects for education. Minority clients reported significantly less stressfulness from their supervisory relationships than non-minorities ( $t = 4.74$ ,  $p < 0.01$ ) and showed a trend in reporting less criticism from supervisors ( $t = 2.35$ ,  $p = 0.02$ ) as well. Clients with schizophrenia and schizoaffective disorder showed a trend in reporting higher levels of supervisor instrumental support than did clients with affective disorders and other disorders ( $t = 2.36$ ,  $p = 0.02$ ).

Disconfirming the study hypotheses, neither group placements nor the DPA employment model were associated with more positive workplace network characteristics (see Table 2). No differences were found between group and individual placements. Clients receiving

supported employment services reported trends of higher instrumental support and appraisal feedback from coworkers than clients receiving DPA services, a trend in the opposite direction of expectations.

Job satisfaction was moderately high overall. Higher job satisfaction was also hypothesized to be related to more support and less criticism from the workplace social network. In Table 3, we see several robust correlations between greater job satisfaction and workplace network outcomes. Job satisfaction was positively correlated with supervisor emotional support and satisfaction with supervisory relationships, as well as emotional support, instrumental support, and appraisal/feedback from coworker relationships. Greater job satisfaction was also negatively correlated with stressfulness of supervisory relationships. We found a positive statistical trend for the correlation between job satisfaction and instrumental support from supervisor. Job satisfaction and criticism from workplace social network were not significantly correlated.

Job tenure was hypothesized to be correlated with the perceptions of supervisor and coworker emotional support and criticism. This hypothesis was not supported, as seen in Table 3. One correlation was in the opposite direction from predictions: satisfaction with coworker relationships showed a trend for a negative correlation with overall job tenure, meaning that greater satisfaction with coworker relationships was associated with shorter job tenure. Moreover, weeks worked at the time of WNG assessment were negatively correlated with supervisor and coworker emotional support, as well as with coworker instrumental support (a trend), but these findings were again in the opposite direction of those hypothesized, meaning that the more recent the job start, the higher the support ratings. The hypothesis regarding hourly wage and workplace network findings were also not supported. Higher hourly wage was positively correlated with the stressfulness of supervisory relationships and negatively correlated with more satisfaction with supervisory relationships. Again, these findings were in the opposite direction from those hypothesized.

#### 4. Discussion

Probably the most important finding from this research is that the social experience of clients with SMI entering work is generally a positive one. This finding is consistent with the results of previous research [37]. Clients reported feeling supported by their social network in the workplace in numerous ways: feeling minimal criticism and stress from workplace relationships, and having a high level of satisfaction with workplace relationships.

One goal of this study was to examine differences between the two employment programs with different philosophical assumptions. IPS is predicated on a strong working alliance between the employment specialist and the client [26] and seeks to normalize the work experience as much as possible, building networks within the workplace with coworkers who do not have psychiatric disabilities. DPA, on the other hand, stresses protected work environments in which the supervisor is cognizant of the psychiatric disability and in many cases coworkers are themselves people with psychiatric disabilities. DPA espouses a central role for peer support. However, the current study found no evidence that clients of the two program models differed in the support felt in the workplace from supervisors or peers. Similarly, group and individual placements showed no differences in workplace network qualities. The lack of differences between placement types challenges the notion that group placements are more supportive and helpful to clients with mental illness. Although the study did not include behavioral measures of support, the perception of support was no different between group and individual placements, suggesting that clients in individual

placements do not feel isolated in the workplace, as would have been indicated by lower emotional, instrumental and other types of support.

The current study also did not show higher emotional support from coworkers or supervisors in DPA, as was found in a previous study [37]. This previous study also showed higher rates of instrumental support and overall satisfaction with supervisory relationships in DPA compared to IPS programs, a finding that was not replicated in the current study. In fact, this study noted two trends of higher instrumental support and appraisal feedback for SE clients over DPA clients. In general, this study indicates that employment models and job placements designed to gradually introduce clients to competitive work environments provide no added benefits in terms of greater social support from supervisors and coworkers.

Several explanations are possible for the discrepancies between previous and current studies. The average time on the job as of the workplace network assessment in the current study was a little less than 14 weeks, whereas the average job tenure at time of assessment in the previous study was 114 weeks for DPA clients and 47 weeks for IPS clients. In other words, the samples examined in the prior study had been employed for a much longer time. Overall job tenure (per job) for clients in the parent study was 23 weeks for IPS and 29 weeks for DPA [11], suggesting that our workplace network assessments were obtained very early in overall job tenure. Therefore, the current study is looking at workplace characteristics early in the job experience. The respondents in the prior study were selected because of their extended job tenure, excluding clients who work for brief periods of time. Because social relationships take time to form and evolve, job tenure is a potentially distinguishing factor between the two studies. Another difference is that the current study uses a sample derived from a randomized controlled trial of DPA and SE programs, whereas the previous study used opportunity sampling from completely separate studies. In this respect, the current methodology is more rigorous.

Job satisfaction was robustly correlated with positive workplace relationship characteristics, such as emotional support and instrumental support with coworker and supervisor relationships, similar to results in previous research [10]. This is an encouraging finding in that improving workplace relationships with good employment interventions could lead to better outcomes, such as higher job satisfaction. However, job satisfaction appears to be unrelated to perception of criticism from either supervisors or coworkers, contrary to what we hypothesized. Also contrary to our hypotheses, workplace network qualities were not strongly correlated with overall job tenure. A few workplace network qualities did correspond to the length of time on the job at the time of the WNG assessment (a contextual characteristic of the job and workplace network assessment rather than an employment outcome per se), indicating declining perceptions of emotional and other support when assessed later in job tenure. This finding is understandable, given more intensive supports early in the job tenure and corresponds with previous literature regarding a honeymoon period early in job tenure for job satisfaction [35]. Similarly, as hourly wages went up, perceived stressfulness of the supervisory relationship went up while satisfaction went down, perhaps indicating greater supervisory expectations (and stress) with higher wages.

#### 4.1. Study limitations

Several limitations to this study must be acknowledged. First, the data collected on perceived workplace network support qualities are, by necessity, derived from self-report methods. People with SMI may be hindered by memory deficits and other forms of cognitive dysfunction, as well as by poor judgment and lack of insight [3]. Also, workplace network characteristics may have been influenced by factors not included in the study, such as cultural characteristics or personality variables. Social skill is another area not tapped in

the current study, but the difficulty with this variable is that it is difficult to measure without a serious investment of time and resources. Social skills have been shown to be related to size, but not other dimensions of social networks (i.e., function) [19].

Other study disadvantages include limitations in the methodology and theoretical framework used to measure social network in this study. The measure of workplace social network characteristics in this study represents a brief instrument that taps into client perceptions of the network (i.e., personal networks), rather than a more intensive examination of the intricacies of social networks (i.e., where every member of the social network is interviewed). Finally, the current study made numerous comparisons, opening up the potential for increased Type I error rates.

#### 4.2. Future directions

People with SMI have difficulty establishing and maintaining social ties over time. Strategies have been developed to address social and related cognitive deficits that impact job tenure and work outcomes [29, 30, 44]. Other future work might address whether sustained employment for people with SMI can enlarge or enhance the client's general social network: do work friendships, mentorships, and other relationships expand the client's access to needed social support after the work day is over? This question would be most appropriately addressed using a prospective, long-term design to assess the general social network for people who are successfully employed over time, rather than by assessing the workplace social network. What this study has highlighted is that people with mental illness can and do form supportive relationships with supervisors and coworkers. This finding is extremely helpful in extending the message of hope and recovery for people with SMI who want to return to work.

#### Acknowledgments

This study was supported by Grant #R01MH59987 from the National Institute of Mental Health.

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**Table 1**Descriptive statistics for workplace network characteristics ( $N = 100^I$ )

	Mean	SD
Total # supervisors and coworkers	3.91	1.46
# Supervisors	1.83	0.65
# Coworkers	2.08	1.19
Supervisor variables		
Emotional support	3.48	1.04
Criticism	1.91	1.03
Instrumental support	3.84	0.92
Appraisal/feedback	3.32	1.04
Stressfulness	1.79	0.94
Satisfaction	4.08	0.97
Coworker variables		
Emotional support	3.13	1.12
Criticism	1.59	0.83
Instrumental support	3.07	1.09
Appraisal/feedback	2.71	1.14
Stressfulness	1.37	0.53
Satisfaction	4.06	0.77

<sup>I</sup> $N$  for individual variables ranged from 98–100 for supervisors;  $N = 85$  for all coworker variables.

Note: All relationship ratings were 1 = not at all ... 5 = extremely.

**Table 2**  
Differences in workplace network characteristics by type of placement and employment program

	Type of placement			Type of employment program			Test of significance
	Group M (SD) n=35	Individual M (SD) n=62	Test of significance t, p	Diversified placement approach M (SD) n=47	Individual placement and support M (SD) n=53	Test of significance	
Supervisor variables:							
# Supervisors nominated	1.94 (0.73)	1.79 (0.60)	1.11, n.s.	1.87 (0.68)	1.79 (0.63)	0.61, n.s.	
Emotional support	3.33 (1.10)	3.56 (1.00)	1.02, n.s.	3.32 (1.03)	3.62 (1.04)	1.43, n.s.	
Criticism	1.98 (0.96)	1.92 (1.07)	0.29, n.s.	2.05 (1.05)	1.78 (1.00)	1.31, n.s.	
Instrumental support	n=34 3.73 (0.94)	n=61 3.87 (0.90)	0.71, n.s.	n=46 3.74 (0.92)	n=52 3.92 (0.91)	0.98, n.s.	
Appraisal	n=34 3.43 (1.03)	n=61 3.28 (1.05)	0.67, n.s.	n=46 3.36 (0.98)	n=52 3.29 (1.09)	0.30, n.s.	
Stressfulness	n=34 1.60 (0.75)	n=61 1.94 (1.03)	1.67, n.s.	n=46 1.66 (0.89)	n=52 1.91 (0.98)	1.30, n.s.	
Satisfaction	n=34 4.22 (0.84)	n=61 3.99 (1.04)	1.10, n.s.	n=46 4.15 (0.94)	n=52 4.02 (1.00)	0.68, n.s.	
Coworker variables:							
# Coworkers nominated	M (SD) n=30 2.14 (1.24)	M (SD) n=54 2.10 (1.14)	0.18, n.s.	M (SD) n=41 2.06 (1.15)	M (SD) n=44 2.09 (1.24)	0.13, n.s.	
Emotional support	2.97 (1.27)	3.23 (1.03)	1.03, n.s.	2.89 (1.21)	3.35 (0.99)	1.91, n.s.	
Criticism	1.57 (0.68)	1.61 (0.92)	0.19, n.s.	1.67 (0.88)	1.51 (0.78)	0.92, n.s.	
Instrumental support	2.82 (1.21)	3.22 (1.01)	1.61, n.s.	<b>2.76 (1.16)</b>	<b>3.35 (0.95)</b>	<b>t = 2.56, p = 0.012</b>	
Appraisal	2.44 (1.10)	2.89 (1.13)	1.77, n.s.	<b>2.44 (1.05)</b>	<b>2.96 (1.18)</b>	<b>t = 2.11, p = 0.038</b>	
Stressfulness	1.44 (0.52)	1.34 (0.54)	0.78, n.s.	1.39 (0.48)	1.35 (0.57)	0.29, n.s.	
Satisfaction	3.92 (0.85)	4.12 (0.71)	1.14, n.s.	3.92 (0.80)	4.18 (0.73)	1.55, n.s.	

Tests conducted at the 0.05 significance level.

**Table 3**

Correlations between job factors and workplace network characteristics

Supervisor variables:	Job satisfaction (Total score) <i>n</i> = 89	Job tenure (Total days worked on this job) <i>n</i> = 100	Weeks worked at time of workplace network assessment <i>n</i> = 100	Job hourly wage <i>n</i> =96
Emotional support	<b>0.44**</b>	-0.08	<b>-0.26**</b>	-0.09
Criticism	-0.15 <i>n</i> = 87	-0.11 <i>n</i> = 98	0.07 <i>n</i> = 98	0.15
Instrumental support	<b>0.26*</b> <i>n</i> = 87	-0.07 <i>n</i> = 98	-0.17 <i>n</i> = 98	-0.18
Appraisal	0.12 <i>n</i> = 87	-0.06 <i>n</i> = 98	-0.17 <i>n</i> = 98	-0.11
Stressfulness	<b>-0.31**</b> <i>n</i> = 88	-0.03 <i>n</i> = 99	0.19 <i>n</i> = 99	<b>0.36**</b>
Satisfaction	<b>0.47**</b> <i>n</i> = 88	0.1 <i>n</i> = 99	-0.13 <i>n</i> = 99	<b>-0.31**</b>
Coworker variables:	<i>n</i> = 77	<i>n</i> = 85	<i>n</i> = 85	<i>n</i> = 83
Emotional support	<b>0.42**</b>	-0.21	<b>-0.31**</b>	0.07
Criticism	0.03	-0.12	-0.05	-0.05
Instrumental support	<b>0.43**</b>	-0.04	<b>-0.22*</b>	0.09
Appraisal	<b>0.37**</b>	-0.12	-0.21	0.04
Stressfulness	-0.17	-0.08	-0.01	0
Satisfaction	0.22	<b>-0.28*</b>	-0.18	0.01

\*  
*p* < 0.05,\*\*  
*p* < 0.01