
Benchmarking HRM Practices in Healthy Work Organizations

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INTRODUCTION

The literature on effective human resource management (HRM) practices is extensive. The influence of HRM practices on organizational performance is an important element in an organization's strategic decision making process (Schuler, Galante, and Jackson, 1987; Bamberger & Fiegenbaum, 1996). Efforts to identify HRM practices that enhance organizational performance have typically relied on the benchmarking of such practices. Benchmarking is "a structured approach for looking outside an organization to study and adapt the best outside practices to complement internal operations with creative, new ideas" (Schuler, 1998:40). Not surprisingly, HRM benchmarking studies have succeeded in identifying exemplary HR practices (Glanz and Daily, 1992; Fitz-enz, 1993). Pfeffer (1994) identified 16 effective HRM practices (e.g., training and skill development, participation and empowerment, promotion from within, employment security, and incentive pay). Osterman (1994) identified several HRM practices that impact work organization and result in productivity gains (e.g., quality circles, teams, and job rotation). Pil and MacDuffie (1996) linked organizational performance with the adoption of high employee involvement work practices as contingent on complimentary HRM practices (e.g., hiring criteria, training for both new and experienced employees, contingent compensation, and reduction in status differentials between employees). Delaney and Huselid (1996) successfully related perceptual measures of a firm's performance with progressive HRM practices

(e.g., internal career opportunities, formal training systems, employment security, and employee voice mechanisms). Longnecker, Stansfield, and Dwyer (1997) linked improvements in productivity to HRM practices of sharing data with operating employees, forming employee problem-solving teams, and employee empowerment and job redesign. Fitz-enz (1997) has related objective performance data of organizational effectiveness (e.g., productivity, quality, and sales) to a variety of HRM practices (e.g., communications, continuous improvement, and cross-functional employee cooperation). All of these studies support the premise that there are exemplary HRM practices that enhance organizational effectiveness.

One indication that HRM practices are seen as playing a key role in an organization's effectiveness is the fact that the human resource function is one of the most frequently benchmarked organizational programs (Brecka, 1995). HRM benchmarking examines the relationship between HRM practices and organizational-level indicators of a firm's performance. Consequently, measures used for identifying effective HRM practices are based on performance data that reflect salient organizational-level outcomes. Examples of prominent objective organizational-level outcomes that have been demonstrated to be influenced by HRM practices include profitability, productivity, employee turnover, product and/or service quality, cost-savings, customer satisfaction, and improvements in sales or customer service (Fitz-enz, 1993; Arthur, 1994; Huselid, 1995). Where objective data on organizational-

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level outcomes are lacking, perceptual measures of overall organizational performance correlate with a variety of HR practices (e.g., selectivity in hiring, training, and incentive compensation) (Delaney & Huselid, 1996).

STATEMENT OF THE PROBLEM

One shortcoming of HRM benchmarking studies is that they limit their focus to organizational-level outcomes and exclude employee-level outcomes (e.g., indices of employee well-being). It is ironic that most HRM benchmarking studies tout that their objective is to identify progressive HRM practices. While maintaining some focus on organizational-level outcomes is obviously important, it is questionable if truly progressive HRM practices can be identified if the benchmarking effort fails to address the other side of the production equation (employee-level outcomes). HRM practices are only progressive if the concern for organizational-level outcomes is matched by a concern for the well-being of employees who are directly affected by these practices.

A major reason why studies of effective HRM practices focus on organizational-level outcomes, at the exclusion of employee-level outcomes, can be found in today's global economic context. This economic context is characterized by the need for organizations to do more with fewer resources, to increase overall effectiveness, and to survive and flourish in the face of increased competition. As might be expected, with a primary emphasis on the organization's bottom-line, concerns for organizational-level outcomes often overshadow those at the employee-level.

There are no published benchmarking studies of HRM practices that balance a concern for organizational-level outcomes with employee-level outcomes. However, researchers have begun to conduct benchmarking studies in the global auto industry that examine employee-level outcomes (e.g., perceived quality of work life and health risks related to stress) in assembly plants that employ lean production manufacturing techniques (Lewchuk & Robertson, 1997). A human-centered benchmarking approach has also been conducted in a variety of other industries (e.g., clothing, textile, paper, aluminum, and electrical and electronic products sectors) by examining the impact of new forms of work organization and new technology on employees' quality of work life (Lewchuk, 1997). However, even these studies do not provide a balanced picture of outcomes as they focus exclusively on employee-level outcomes and exclude direct consideration of organizational-level outcomes. Therefore, a model is needed for identifying exemplary HRM practices that provides balance by giving comparable weight to both organizational-level and employee-level outcomes

simultaneously. The literature on organizational health provides one approach for achieving the balance needed in identifying effective HRM practices.

Jaffe (1995) suggests the concept of organizational health is comprised two factors: the performance of the organization (e.g., profit, productivity and competitiveness) and worker health/satisfaction outcomes (e.g., workers' physical and mental health and job satisfaction). Karasek & Theorell (1990) argue that organizations must take steps to improve organizational effectiveness while enhancing the well-being of employees. An important outcome measure for employee well-being is job-related stress. The impact of job-related stress on employee health has been a major concern since the 1960s (U.S. Department of Health and Human Services, 1966). For the past 30 years the role that job-related stress has played in occupational disease (e.g., cardiovascular heart disease) has been recognized (Kahn et al, 1964; Pelletier, 1977; Keita & Sauter, 1992). More recently, the construct of organizational health has provided a base for studying the effects of job stress on employee well-being (Cox, 1988; Rosen, 1991; and Murphy, 1995).

A concept that builds on the idea of organizational health has emerged under the rubric of Healthy Work Organizations. A Healthy Work Organization (HWO) is defined as one "which maximizes the integration of worker goals for well-being and company objectives for profitability and productivity" (Sauter, Lim & Murphy, 1996: 250). Research employing a HWOs perspective is important in the development of a national strategy for minimizing the negative health effects of occupational stress for employees while maximizing the economic health of the organization (Quick, Murphy and Hurrell, 1992; Sauter and Murphy, 1995). The HWOs concept has recently been used by the National Institute for Occupational Safety and Health (NIOSH) to identify various organizational characteristics that simultaneously influence both organizational effectiveness and employee well-being (e.g., stress). Murphy (1995) suggests that research using the HWOs concept examines a broad range of factors (i.e., management practices, organizational climate, and organizational values) that represent a variety of organizational characteristics. Research by Sauter, Lim & Murphy (1996) has demonstrated that select management practices (i.e., continuous improvement, career development, HR planning, and fair pay and rewards) are related to organizational effectiveness and reduced employee-stress.

HYPOTHESIS

As with any new conceptual framework, the HWOs concept is a heuristic device that can clarify the relation between various organizational characteristics as well as macro and micro organizational-level

outcomes. The HWOs concept holds promise for identifying HRM practices that are related to desirable outcome measures at both of these levels. Accordingly, this study will identify HRM practices that are associated with favorable organizational and employee-level outcomes. Therefore, the following hypothesis will be empirically tested:

Hypothesis: The HWOs concept will identify HRM practices that simultaneously correlate with macro-level measures of organizational outcomes (i.e., organizational effectiveness) and micro-level measures of employee well-being (i.e., employee job stress and job satisfaction).

METHODS

Subjects

An ongoing organizational effectiveness initiative by a major manufacturing company with headquarters in the Northeast U.S. provided the context for this study. This company performs a random biannual survey of its employees to ascertain employee perceptions of a host of organizational phenomenon (e.g., communication, supervisory practices, compensation practices, and organizational leadership) in efforts to better understand and enhance important organizational outcomes (e.g., organizational effectiveness). Employees from 25 different plants responded to a proprietary 160-item survey. The data for this study came from a 1995 organizational effectiveness survey and represents employees' responses only from the company's largest plant. These data are based on a random sample of 1,162 employees that representing all plant personnel. Table 1 presents a demographic description of the sample for three different occupational groupings of employees categorized by sex.

As shown in Table 1, male employees (N=699) outnumbered female employees (N=463) in the plant. The random sample accurately reflected the fact that significantly more males are employed at the plant than females. Further, using gender as a basis for comparison, males comprised a larger percentage of

both the production/maintenance (29.7% vs. 24.7%) and administrative/technical support (9.8% vs. 7.4%) occupational groupings. However, in the managerial/professional occupational grouping, males represented a lower percentage of employees in comparison to their female counterparts (20.7% vs. 27.1%).

Measures

The literature on effective HRM practices provided a list of potential independent variables (i.e., effective HRM practices) for inclusion in this study. The independent variables selected were based on a broad range of HRM practices that are prominent in the literature. The company's 160-item proprietary survey contained 29 questionnaire items that could be subsumed under various HRM practices. These 29 items represented eight HRM practices which previous studies have correlated to measures of organizational effectiveness. The HRM practices used in this study appear below with the number of questionnaire items used to operationalize each HRM practice.

Employee communications: intense, broad-based, continuous, and multi-directional employee communication where operating data is systematically shared with the workforce (5 items)

Continuous improvement: feedback is sought from all levels for quality improvement purposes, use of techniques such as quality circles, and a commitment to Total Quality Management (3 items)

Employee empowerment: voice mechanisms allowing employee participation in decision making (3 items)

Hiring criteria: selectivity in recruiting and hiring practices, promotion of workplace diversity (2 items)

Training: training for new and experienced workers, formal systems for training and skill development (6 items)

Internal career opportunities: promotion from within, internal career ladders, and career development opportunities (4 items)

Incentive pay: compensation is contingent on performance (e.g., individual or group incentive pay or profit sharing) (3 items)

Employment security: job security via workforce stabilization and employment continuity policies (3 items)

The 29 questionnaire items that were related to

TABLE 1
Demographics of the Survey Participants

	Occupational Groups			
	Production Workers N (%)	Administrative and Technical Support N (%)	Managerial and Professional N (%)	Overall N (%)
Male	345 (29.7)	114 (9.8)	240 (20.7)	699 (60.2)
Female	287 (24.7)	87 (7.4)	89 (27.1)	463 (39.8)
Total	632 (54.4)	201 (17.3)	329 (28.3)	1162 (100.0)

these eight HRM practices provided a pool from which specific items could be drawn when developing summated rating scales to operationalize the HRM practices. These scales were subsequently used as independent variables in this study, provided they had adequate internal reliability. Each of the questionnaire items used in this study employed a 5-point Likert scale (1= strongly disagree to 5= strongly agree). Prior to data analysis, all responses were recoded so that the higher scores reflected use of the HRM practices being investigated.

The criterion variables were drawn from a pool of twelve questionnaire items that were also measured on a 5-point Likert scale. The criterion measures reflected subjective and self-reported assessments of organizational effectiveness (as a measure of an organizational-level outcome) and amount of employee job stress and job satisfaction (as measures of individual-level outcomes). Organizational effectiveness was operationalized using five questionnaire items, job stress used three items, and job satisfaction used four items. These questionnaire items were subsequently used as a pool from which to draw items when developing summated rating scales for each criterion measure.

RESULTS

The 29 survey items comprising the independent variables were subjected to a factor analysis with

varimax rotation. Factor analysis was employed to confirm which variables to include in each summated rating scale. An initial factor analysis (with an eight-factor solution) on the 29 questionnaire items representing the HRM practices being investigated was performed. Based on the results of this analysis, there were seven questionnaire items that failed to achieve adequate factor loadings (i.e., .50 or higher) or had high cross-loadings with other factors. These seven items were dropped from subsequent analyses. The remaining 22 items were again factor analyzed using an eight-factor solution. The results of this analysis suggested that 15 of the 22 questionnaire items comprised five significant factors (i.e., factors with eigenvalues of 1.00 or greater).

Next, the 12 questionnaire items representing the criterion measures were factor analyzed using a three-factor solution. This analysis identified nine of the 12 questionnaire items as adequately loading on three factors (i.e., factor loadings of .50 or greater). Accordingly, the criterion measures used in subsequent analyses were based on these nine questionnaire items. Table 2 presents the results of the factor analyses along with each factor's alpha reliability coefficient (Cronbach, 1951).

Scales for operationalizing this study's variables were then developed from those questionnaire items which the factor analyses suggested comprised distinct factors for the independent and criterion variables. As

TABLE 2
Results of Factor Analysis

Constructs for Independent Variables	1	2	3	4	5
Employee communications					
supervisor provides constructive feedback	.73				
supervisor listens to our ideas/concerns	.73				
supervisor explains how changes will affect me	.69				
communications in our area has improved	.62				
Recognition					
people are rewarded according to job performance		.83			
you get recognized when you do good work		.76			
this organization recognizes me in ways I value		.69			
Training					
training is linked to organizations' business needs			.79		
training occurs for performing a quality job.			.73		
we are trained in the skills and techniques required for quality products and services			.72		
Internal career opportunities					
job assignments allow me to gain skills and knowledge				.82	
work assignment help in developing/learning new skills				.74	
organization offers growth & development opportunities				.62	
Continuous improvement					
we are continuously involved in improving work processes					.71
we are involved in work process improvement					.71
Eigenvalue	8.42	1.58	1.30	1.07	1.00
Percentage of variance explained	37	7	6	5	4
Coefficient alpha (Chronbach, 1951)	.80	.83	.77	.80	.69

TABLE 2 (cont.)
Results of Factor Analysis

Constructs for Criterion Variables	1	2	3
Job Satisfaction			
I like my work	.87		
I feel personal accomplishment from work	.81		
I am satisfied with my job	.73		
Job-related Stress			
I deal effectively with stress		.83	
Work-related stress doesn't interfere with job		.82	
There is a healthy balance between work and home life		.77	
Organizational Effectiveness			
Organizational effectiveness has been improving			.83
Organization's quality has been improving			.83
Changes to compete effectively have been made			.71
Eigenvalue	3.90	1.36	1.11
Percentage of variance explained	43	15	12
Coefficient alpha (Chronbach, 1951)	.82	.75	.82

Note: Table includes all factor loadings greater than .50 that have factor eigenvalues of 1.00 or greater.

shown in Table 2, the alpha coefficients for each scale ranged from .69 to .82. Reliability coefficients of .60 or higher are preferred in the early stages of research (Nunnally, 1967) and coefficients of .70 or higher are preferred in establishing a threshold of support for the internal consistency of a scale in latter stages of research (Nunnally, 1978). Therefore, all of the scales used in this study exceed the rule of thumb suggested by Nunnally for the early stages of research. Further, the scale for the HRM practices variable of "continuous improvement" borders the .70 threshold Nunnally recommends for latter stages of research as it had a reliability coefficient of .69. Therefore, all of the scales representing the independent and criterion variables achieved adequate reliability for inclusion in the subsequent multivariate regression analysis.

The results from the multivariate regression analyses demonstrated that all five of the HRM practices operationalized in this study were positively and significantly related to measures of organizational effectiveness and job satisfaction. In addition, four of the five HRM practice variables were significant predictors of employee job stress. The standardized

beta estimates and the adjusted R square for the multivariate regression analysis are presented in Table 3.

As shown in Table 3, with the exception of the HRM practice of internal career opportunities, the independent variables representing this study's HRM practices were significant predictors of the criterion measures. Although the HRM practice variable of internal career opportunities was not significantly related to employee job stress, it was a significant predictor of organizational effectiveness and employee job satisfaction. The measures representing the HRM practices are better predictors of organizational effectiveness ($R^2 = .46$) and job satisfaction ($R^2 = .41$) than of employee stress ($R^2 = .21$). Further, the HRM practice variable of training appears to be the best single overall predictor of the criterion measures given the magnitude of its combined standardized beta-estimates.

DISCUSSION

This study examined the utility of the HWOs concept in identifying HRM practices that simultaneously correlate with macro-level measures

TABLE 3
Multivariate Regression Results of Macro and Micro-level Outcomes

	Standardized beta-estimates		
	Organizational Effectiveness	Stress	Satisfaction
HRM Practices			
Employee communication	0.11***	0.09*	0.10***
Recognition	0.15***	0.18***	0.14***
Training	0.37***	0.08*	0.13***
Internal Career Opportunities	0.19***	0.06 ns	0.08***
Continuous Improvement	0.05***	0.17***	0.34***
Adjusted R ²	0.46***	0.21***	0.41***

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

n.s. not significant

of organizational outcomes (i.e., organizational effectiveness) and micro-level measures of employee well-being (i.e., measures of both employee job stress and job satisfaction). In addition, this study provided support for using the HWOs concept in HRM benchmarking. More specifically, evidence has been presented that a traditional macro-level criterion measure (e.g., organizational effectiveness) can be augmented by micro-level measures of employee well-being (e.g., employee stress and job satisfaction). Accordingly, the HRM practices that were investigated in this study hold promise for enhancing employee job satisfaction and for preventing work-related stress while simultaneously promoting organizational effectiveness.

The HRM practices that were operationalized in this study can serve as initial guiding principles within a larger set of management practices for a healthy work organization. Overall, this study's findings highlight the important influence that HRM practices have throughout the organization. Not only do HRM practices favorably impact overall organizational effectiveness, but they also contribute to favorable employee outcomes.

Limitations and directions for future research

The research reported does have certain limitations. As Schonfeld, Rhee, and Xia (1995) point out, cross-sectional research designs that make use of self-reported criterion measures (e.g., stress) may be confounded by the manner in which the criterion variable is subjectively measured. To address such measurement problems, research that obtains objective criterion measures for stress (e.g., health care utilization or incidence of stress-related health ailments) would be very desirable. In similar fashion, this study's measures of organizational effectiveness and job satisfaction (the other criterion measures) could be bolstered by more objective data than that provided by subjective perceptions of the survey respondents. Future studies testing the HWOs concept should include objective measures of these types of criterion variables.

Another limitation of this study relates to the actual survey instrument that was used for data collection. The 1995 survey was originally developed as an ongoing study of organizational effectiveness, not to assess the applicability of the HWOs concept to HRM benchmarking. Future research may be able to pose questions that better operationalize the independent variables (i.e., HRM practices). For example, one possible reason that the beta weights for the criterion measure of stress were low (relative to those of job satisfaction and organizational effectiveness) may be attributed to the manner in which the HRM practice variables were operationalized. Sandman and Smith's Job Stress Index (1988) contains eleven dimensions.

Three of these dimensions include lack of feedback, lack of participation, and job insecurity. While these three dimensions were initially included in this study, only one of these dimensions (i.e., employee communication) was retained as an independent variable owing to low eigenvalues for employment empowerment and employment security. Perhaps if these HRM practices were better operationalized more variance in the stress measures would have been explained.

There are over 20 HRM practices identified in the literature that have been related to organizational effectiveness. However, only eight of these HRM practices were represented by the data that was collected in this study's survey. Of these eight, only five HRM practices were actually included in the multivariate analysis owing to the results of the factor analysis. Future research addressing the utility of the HWOs concept in HRM benchmarking should consider HRM practices that were not included as part of the present study (e.g., practices related to performance appraisal, status differentials, work design arrangement such as job rotation, promotion of workplace diversity, and employee assistance initiatives).

Implications for primary stress-prevention strategies

This study has implications for improving organizational health. Since organizational health has a dual focus (i.e., to simultaneously enhance beneficial organizational-level and employee-level outcomes), successful efforts to improve organizational health must demonstrate both increases in organizational effectiveness and employee well-being. One approach for achieving a healthy work organization might employ interventions typically found in a traditional medical model. This model offers three types of interventions for developing and maintaining health; primary, secondary, and tertiary approaches. Cartwright, Cooper, and Murphy (1995) suggest that these three approaches can be applied to healthy work organizations.

Each of these approaches has a different intervention orientation. Primary stress interventions are preventive in nature as they seek to avoid a health problem by eliminating the root cause(s) of the health problem. Ivancevich and Matteson (1988) suggest several HRM practices that can serve as primary stress intervention strategies having application to organizational health. These HRM practices include appropriate selection, placement, and training of personnel. Obviously, if employees are not properly trained or placed in positions where their skills match the job demands, both organizational effectiveness and individual well-being are likely to suffer. Secondary interventions rely on strategies that mitigate potential health problems likely to occur in individuals.

However, such interventions do not eliminate the source of the actual health problem (e.g., prolonged and/or excessive work place stress). A frequently used secondary intervention strategy addressing stress is to provide coping skills (e.g., relaxation training). Tertiary interventions are reactive in nature and seek to treat the health problem after it has become manifest. Employee Assistance Programs (EAPs) providing situational counseling are typical of a tertiary stress intervention effort.

If an ounce of prevention is indeed worth a pound of cure, there is little doubt that primary interventions are preferred over those that are secondary or tertiary. To the extent that challenges to organizational health

can't always be anticipated and eliminated before they surface, then obviously secondary and tertiary interventions will clearly be needed.

The HWOs concept that was employed in this study is most clearly aligned with the primary stress prevention strategy. Accordingly, organizations that adopt the types of HRM practices that were significant predictors of organizational health (i.e., employee communication, recognition, training, and continuous improvement) better approach the ideal of a healthy work organization when compared to organizations that don't. In sum, this study's empirical results are useful in identifying HRM practices that can serve as useful guides in moving an organization toward the ideal of a Healthy Work Organization.

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REFERENCES

- Arthur, J.B. (1994). Effects of human resource systems on manufacturing performance and turnover. *Academy of Management Journal*, 37: 670-687.
- Bamberger, P. & Fiegenbaum, A. (1996). The role of strategic reference points in explaining the nature and consequences of human resource strategy. *Academy of Management Review*, 21: 926-958.
- Bowen, D. E. & Lawler, E. E. (1992). Total quality-oriented human resource management. *Organizational Dynamics*, 20: 29-41.
- Brecka, J. (1995). Human resources is top benchmarking process. *Quality Progress*, 28:17.
- Cartwright, S., Cooper, C., and Murphy, L. (1995). Diagnosing a healthy organization: A proactive approach to stress in the workplace. In Sauter, S. and Murphy, L. (Eds.). *Organizational Risk Factors for Job Stress*, American Psychological Association, Washington, DC, 217-233.
- Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334.
- Cox, T. (1988). Organizational health. *Work & Stress*, 2, 1-2.
- Delaney, J.T. & Huselid, M.A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal*, 39, 949-969.
- Fitz-enz, J. (1993). The truth about 'best practice'. *Human Resource Planning*, 3, 19-26.
- Fitz-enz, J. (1997). Highly effective HR practices. *HR Focus*, 74, 11-12.
- Glanz, E.E., & Daily, L.K. (1992). Benchmarking. *Human Resource Management*, 31, 9-20.
- Huselid, M.A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38: 635-670.
- Ivancevich, J.M. & Matteson, M. T. (1988). Promoting the individual's health and well-being. In C.L. Cooper and R. Payne (Eds.). *Causes, coping and consequences of stress at work*. New York: Wiley.
- Jaffe, D. (1995). 'The healthy company: Research paradigms for personal and organizational health.' In Sauter, S. and Murphy, L. (Eds). *Organizational Risk Factors for Job Stress*. Washington, DC: American Psychological Association, 13-40.
- Kahn, R., Wolfe, D., Quinn, R., Snoek, J., and Rosenthal, R. (1964). *Organizational Stress: Studies in Role Conflict and Ambiguity*. New York: Wiley.
- Karasek, R. & Theorell, T. (1990). *Healthy work: Stress, productivity, and reconstruction of working life*. New York: Basic Books.
- Keita, G.P. & Sauter, S.L. (Eds.) (1992). *Work and well-being: An agenda for the 1990s*. Washington, DC: American Psychological Association.
- King, S. (1995). US trends in HR best practice. *Management Development Review*, 8:34-38.

- Kochan, T. A., & Osterman, P. (1994). *The mutual gains enterprise: Forging a winning partnership among labor, management, and government*. Boston: Harvard Business School Press.
- Lewin, D. & Schecter, S. (1995). Four factors lower disability rates. *Personnel Journal (New Product Supplement)*, November: 14-16.
- Lewchuk, W. & Robertson, D. (1997). Production without empowerment: Work reorganization from the perspective of motor vehicle workers. *Capital and Class*, Autumn.
- Lewchuck, W. (1997). *Human-centered benchmarking: Work reorganization and the quality of work life in the clothing, textile, primary textile, box, paper, aluminum, electrical and electronics products sectors*. Canada: Summary Report, Centre for Research on Work and Society, York University.
- Longnecker, C., Stansfield, O., & Dwyer, T.C. (1997). The human side of manufacturing improvement. *Business Horizons*, 40: 7-17.
- MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review*, 48: 197-221.
- Murphy, L. (1988). 'Workplace interventions for stress reduction'. In Cooper, C. & Payne, R. (Eds.), *Causes, Coping and Consequences of Stress at Work*, New York: Wiley.
- Murphy, L. (1995). 'Characteristics of healthy work organizations.' Symposium at the American Psychological Association, National Institute for Occupational Safety and Health Joint Conference, Washington, DC.
- Nunnally, J. C. (1967). *Psychometric Theory*. New York: McGraw-Hill.
- Nunnally, J. C. (1978). *Psychometric Theory (2nd Ed.)*. New York: McGraw-Hill.
- Pelletier, K. (1977). *Mind as Healer, Mind as Slayer: A Holistic Approach to Preventing Stress Disorders*, New York: Delcorte.
- Pfeffer, J. (1994). *Competitive advantage through people*. Boston: Harvard Business School Press.
- Pil, F. K. & MacDuffie, J.P. (1996). The adoption of high improvement work practices. *Industrial Relations* 35, 423-455.
- Quick, J., Murphy, L., & Hurrell, J. Jr. (Eds) (1992). *Stress and Well-Being at Work: Assessments and Interventions for Occupational Mental Health*. Washington, DC: American Psychological Association.
- Rosen, R. (1991). *The Healthy Company: Eight Strategies to Develop People, Productivity, and Profits*, Los Angeles: Jeremy P. Tarcher, Inc.
- Sauter, S., Lim, S., & Murphy, L. (1996). Organizational health: A new paradigm for occupational stress research at NIOSH. (*Japanese Journal of Occupational Mental Health*, 4, 248-254.
- Sauter, S. & Murphy, L. (Eds.) (1995). *Organizational Risk Factors for Job Stress*. Washington, DC: American Psychological Association.
- Schuler, R.S., Galante, S.P. & Jackson, S.E. (1987). Matching effective HR practices with competitive strategy. *Personnel*, 68: 18-27.
- Schuler, R.S., (1998). *Managing human resources (6th ed.)*. Cincinnati: Southwestern College Publishing.
- US Department of Health and Human Services. (1966). *Protecting the Health of Eighty Million Americans: A National Goal for Occupational Health*. Washington, DC: U.S. Department of Health, Education and Welfare.