



Employee Health Management Programs: Review, Critique, and Research Agenda

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Employee health management programs (EHMPs) have been receiving increased attention. This paper argues that studies assessing the effect of EHMPs on individual and organizational outcomes have great potential for managerial/organizational research and practice. It proposes a framework that integrates previous employee health management program (EHMP) research from diverse disciplines. It also suggests a research agenda that indicates how management scholars may make a significant contribution to EHMP research, to an understanding of organizational functioning, and to improved organizational performance.

An increasing number of organizations have initiated programs designed to improve the physical and mental health of their employees. Recent evidence indicates that health promotion programming is fairly common and growing quickly within the corporate sector, particularly among larger organizations (Terborg, 1986; Warner, 1987). The management literature, however, has not kept pace with this organizational reality. Although efforts to determine the relevance of employee health management programs (EHMPs) to individual and organizational success have emanated from a variety of disciplines—public health, occupational medicine, exercise physiology, health economics, and human resource management—an integrated framework specifying organizational and managerial antecedents and outcomes of EHMPs has yet to be developed.

This article introduces management scholars to EHMPs, indicates how management scholars may contribute to an understanding of EHMPs, and suggests how knowledge of EHMPs contributes to an understanding of organizations. In addition, increased understanding of EHMPs is expected to contribute to a knowledge base that managers can use in deciding whether to adopt an employee

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health management program (EHMP) and in determining how to implement an EHMP most effectively.

We propose that management scholars initiate and pursue an integrative effort in EHMP research. To contribute to this effort, this paper (a) provides a definition and typology of EHMPs where none exists; (b) discusses the relevance of EHMPs to organizational and management scholars, (c) briefly reviews EHMP research; and (d) provides a framework for the study of EHMPs that may guide research and practice. For scholars, the framework highlights important and as yet unexplained EHMP linkages, indicates areas of theoretical weakness, and shows how the study of EHMPs can further explanations of individual and organizational performance. For managers the framework outlines how EHMPs relate to an organization's external context, affect its internal functioning, and influence important criteria of organizational effectiveness.

Definition and Typology of Employee Health Management Programs

No widely accepted definition of EHMPs exists (Warner, 1987). The conceptual, empirical, and practical development of EHMPs is thereby significantly hindered. Consensus must occur with respect to two separate EHMP dimensions: coverage and content. *Coverage* refers to the necessary continuity and variety that programs must incorporate to be defined as an EHMP. This dimension concerns such questions as "Does a one time health promotion seminar constitute an EHMP?" and "Are a variety of components necessary for a program to be considered an EHMP?" In our view, continuity is necessary for a program to be considered an EHMP, but variety is not. That is, if an organization implements at least one EHMP component (see the typology presented below), on an intended long term basis, an EHMP exists.

The classical typology of preventive medicine (Schneiderman, 1981) helps delimit EHMP *content*. We suggest that EHMPs include primary (measures taken to prevent the initiation of disease) and secondary (measures that arrest the development of disease while still in the preclinical stage) disease prevention activities, as well as health promotion activities (efforts to increase the health of already healthy individuals).¹ We thus define EHMPs as long term organizational activities intended to promote the adoption of personal behavior and organizational practices conducive to employee physiological, mental, and emotional health.

To clarify what EHMP includes, we find it helpful to indicate organizational efforts which lie outside EHMP boundaries. EHMPs do not include tertiary disease prevention activities (therapies designed to minimize the consequences of disease after it is manifest) and therefore do not include employee assistance programs (EAP) and occupational medicine programs. Nor do EHMPs include rec-

¹There is overlap among health promotion and disease prevention efforts; how a specific program component is categorized is a function of its purpose. For example an exercise program could be considered health promotive, primary preventive, or both, depending upon whether its purpose is to achieve a higher level of wellness, to prevent the initiation of disease, or both. Furthermore it could be considered secondary preventive if embarked upon by a person approaching, but not yet being obese. Finally, an exercise program would be considered a tertiary preventive measure if it is part of a rehabilitation program for a person who has suffered a heart attack.

reation programs (the focus of which is not health improvement), or such health care cost-containment efforts as changes in medical care coverage and medical care delivery. The “EHMP Definition Decision Tree” presented as Figure 1 further clarifies the kinds of programs that qualify as EHMPs.

With our definitional approach and a review of the diverse EHMP literatures, the following EHMP components can be identified:

Physical fitness interventions of which there are three subcategories: aerobic exercise, muscular development, and flexibility programs.

Nutrition and weight control interventions to help employees reach and maintain ideal body weight and increase their awareness of appropriate dietary habits.

Hypertension detection interventions that focus on screening employees to detect those with high blood pressure.

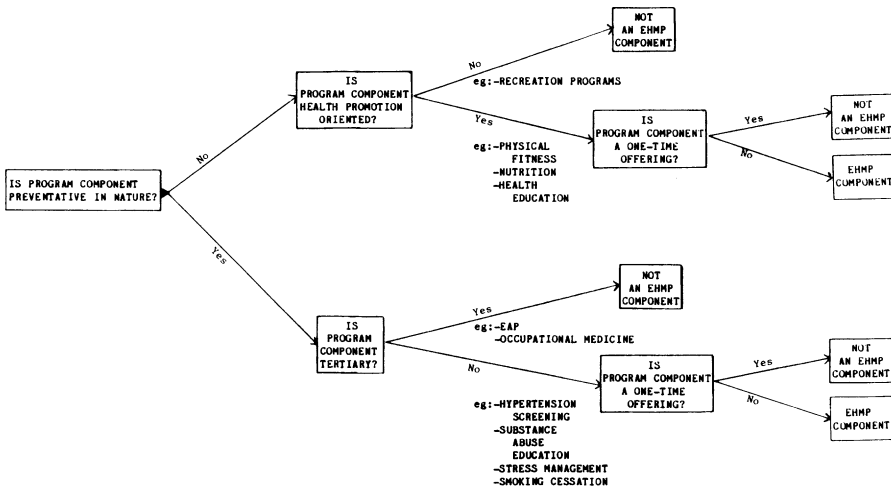
Smoking cessation interventions.

Substance abuse interventions to educate employees about potential risks of drug and alcohol abuse and to communicate to employees what relevant services the organization provides.

Stress management interventions to help employees cope more effectively with work and non-work environments.

Health education interventions that convey “disease-preventive, health-promotive” philosophies and behaviors to employees.²

Figure 1
EHMP Definition Decision Tree



²For full definitions and descriptions of these EHMP components see O'Donnell & Ainsworth (1984) and Terborg (1986).

Areas of overlap exist in program content, potential benefit, and reporting structure between EHMPs and other organizational efforts. For example, close linkages exist between EHMP, occupational medicine, and EAP programs. Hypertension detection and substance abuse components of EHMPs are educational and screening oriented with treatment, when necessary, carried out in medical and/or EAP departments. The proximity of this definition of EHMP to other organizational functions may occasion research challenges. We suggest, however, that EHMP is separate from other functions and that the definition, delimitation and typology we present will result in more focused research and thereby will contribute to the development of the field of EHMP.

Why Organizational Scholars Should Study EHMPs

The systematic study of EHMPs could contribute significantly to an improved understanding of individual and organizational functioning. Organizational and management scholars may develop more elaborate and precise explanations of key organization outcomes by understanding EHMPs. Several areas in which increased understanding could be expected are now addressed.

Organizational Effectiveness

Organizational effectiveness (OE) has a long and varied history in organizational research (Cameron & Whetten, 1983). In its simplest form, research related to this subject attempts to explain why organizations function as they do and how they might function more effectively. EHMP research will not clarify why organizations do what they do, but it may help explain how organizations can enhance goal accomplishment.

Organizations achieve goals through people. When employees work harder, longer, and/or are more committed, organizational performance improves. EHMPs have been shown to affect how hard and long employees work because of increased physical and mental stamina (Pate & Blair, 1983). Also, by demonstrating organizational commitment to employees, EHMPs may in turn increase employee commitment to the organization. Thus, the study of EHMPs may help organizational researchers to identify how to increase organizational effectiveness.

Employee Productivity

Like OE, employee productivity continues to be a serious concern of organizational and managerial research. A variety of programs have been initiated to improve productivity in recent years. These include flextime (Golembiewski & Proehl, 1978), management by objectives (Kondrasuk, 1981), quality circles (Munchus, 1983), and mentorship (Hunt & Michael, 1983). These efforts focus on creating organizational processes and mechanisms designed to modify how employees behave. The research issue is whether such practices result in employees working harder, longer, and more effectively. EHMPs may be another set of activities that affect employee productivity. Preliminary research indicates this may be so (Bernacki & Baun, 1984; Fielding, 1982). Thus scholars interested in employee productivity might consider expanded models that include EHMP as a possible contributor to productivity.

Health Care Costs

Health care costs represent a major organizational challenge. Although health care cost increases slowed in the mid-1980's, they continue to outpace the general rate of inflation. As a percentage of payroll, employer-paid health insurance has increased from 2.7% in 1965 to 5.1% in 1979, and 6.6% in 1984. The United States Chamber of Commerce reports that health care costs increased from \$165 per employee in 1965 to \$775 in 1979, \$1,314 in 1983, and \$1,423 in 1984. Health care is now the single most expensive employee benefit. (Bureau of National Affairs (BNA), 1983; 1986).

EHMPs may be a means of reducing health care costs. If employees become more mentally and physically fit, thus requiring less medical attention, reduced health care costs should result. The linkage between EHMPs and decreased health care costs is a complex one, however. Decreased health care costs may occur only as long term benefits of EHMPs. The time required for EHMPs to yield health improvements and, ultimately, decreased health care costs is not short. For example, although there are immediate benefits of quitting smoking, it takes an ex-smoker 10 to 15 years of non-smoking to reach the risk levels of one who never smoked (Doll & Peto, 1976; Hammond & Horn, 1984). In addition some program components involve considerable initial expense. For example a physical fitness facility requires significant start up costs (Goldenhar & Edington, 1986). It has also been argued that the long-term effects of EHMPs could increase an organization's expenses as employees live longer and thus extend their dependence on pension funds (Warner & Murt, 1984). In spite of these complexities and as yet unanswered questions, current trends suggest that EHMPs are playing an increasingly central role in efforts to combat rising health care costs (Fielding, 1979; Kurtz, Googins, & Howard, 1984). Thus, scholars interested in approaches for decreasing organizational costs (and thereby increasing effectiveness) might consider studying EHMPs.

Indirect Human Resource Costs

Organizations experience health related indirect human resource costs in the form of absenteeism, turnover, and restaffing. Absenteeism, which averages three percent in the U.S., with estimated annual costs ranging from \$8.5 billion to \$26.4 billion (Mowday, Porter, & Steers, 1982), has been shown to be significantly affected by employee health problems. Smokers, for example, are absent two to three more day per year than nonsmokers (BNA, 1983), and uncontrolled hypertensives are absent approximately 33% more often than controlled hypertensives (Alderman & Davis, 1976). Cardiovascular disease alone accounts for 132 million lost workdays in the U.S. each year and \$27 million in lost output (Maxey, Roy, & Kerr, 1982). Maxey et al. (1982) estimate that it costs \$700 million to replace the 200,000 employees aged 45-65 who are killed or disabled each year by cardiovascular disease. These authors report that the cost of replacing a senior executive can be as high as \$600,000. If EHMPs contribute to a healthier workforce, they should also contribute to decreasing these health related indirect human resource costs.

The attractiveness of EHMPs as an employee benefit may also decrease absen-

teeism, turnover, and staffing costs by attracting health conscious employees and by motivating attendance and retention (Baun, Bernacki, & Tsai, 1986). Researchers interested in explaining and/or predicting absenteeism, turnover, and staffing may be able to explain more of their variance by studying EHMPs.

In summary, though EHMPs will not completely explain individual and organizational outcomes, organizational and management scholars interested in employee performance, human resource costs, and/or organizational effectiveness may derive more complete models by incorporating EHMPs.

Existing EHMP Research

Each of the EHMP program components described earlier has extensive literatures emanating from public health, occupational medicine, exercise science, and individual/organizational behavior. These literatures indicate that many forces underlie the growth of EHMP. The major triggers leading to EHMP implementation include increasing health care costs; the fitness orientation of corporate decision makers and employees; traditional organizational effectiveness issues such as absenteeism, turnover, and employee performance; and a sense of social responsibility on the part of corporations.³ Various individual and organizational benefits have been attributed to EHMPs. EHMPs have been linked to improvements in physical and psychological performance, work related attitudes (morale, interpersonal relations, job satisfaction), and organizational performance (absenteeism, health care costs, and productivity).

Although much of the EHMP research is encouraging, caution is advised in interpreting the results. Extensive and rigorous research has addressed the relationship of mortality and morbidity to the worksite (Caplan, Cobb, & French, 1979; Holt, 1982; Kahn, 1981; Parker & DeCotiis, 1983), but few studies have addressed the effectiveness of EHMPs, though many have addressed specific program component outcomes (Bernacki & Baun 1984; Brownell, et al., 1984; Cox, 1984; Schwartz, 1980). Existing research tends to be characterized by correlational rather than causal findings, small non-random samples, lack of control groups, short term intervention programs, data (other than physiological) based largely on retrospective self-reports, and programmatic rather than organizational outcomes.

We are heartened by several recent articles that recognize this lack of rigor in EHMP research (Fielding, 1984; Warner, 1987) and by a trend toward increased methodological rigor (Bernacki & Baun, 1984; Blair, Piserchia, Wilbur, & Crowder, 1986). Without valid findings concerning EHMPs' organizational effects, the field's future will be left to intuition and chance. Management scholars can contribute much to increasing the rigor of EHMP research and to a deeper understanding of the interaction between EHMPs and traditional management issues such as employee morale, attendance, productivity, and organizational effectiveness.

³It is beyond the scope of this paper to present a comprehensive review of the EHMP literature. Reviews can be found in Terborg (1986) and Leviton (1985). A thorough bibliography of EHMP research is available from the first author.

Framework for Employee Health Management Program Research

Although the study of EHMP shows considerable potential to add valuable insight concerning organizational functioning, its conceptual development has not progressed significantly for two reasons. First, it is difficult to study an activity without a clear definition. Earlier, we offered a precise definition and specified program components that fit the definition. Second, an integrative framework for EHMP research does not exist. Such a framework would identify key variables, hypothesize relationships, and suggest research directions.

The framework shown in Figure 2 outlines how EHMPs relate to an organization's external context, affect its internal functioning, and influence important criteria of organizational effectiveness. It also provides a mechanism with which to integrate and synthesize existing EHMP research and offers a conceptual road map that indicates future research directions. The framework outlines four stages that occur in chronological order:

1. environmental and organizational cues;
2. program selection and implementation;
3. personal and work related outcomes;
4. organizational effectiveness outcomes.

The framework also outlines three sets of linkages (A, B, and C) that connect the four stages. Future EHMP research should be directed at determining the relationships indicated by the three linkage sets. Each of the stages of the research framework are now addressed.

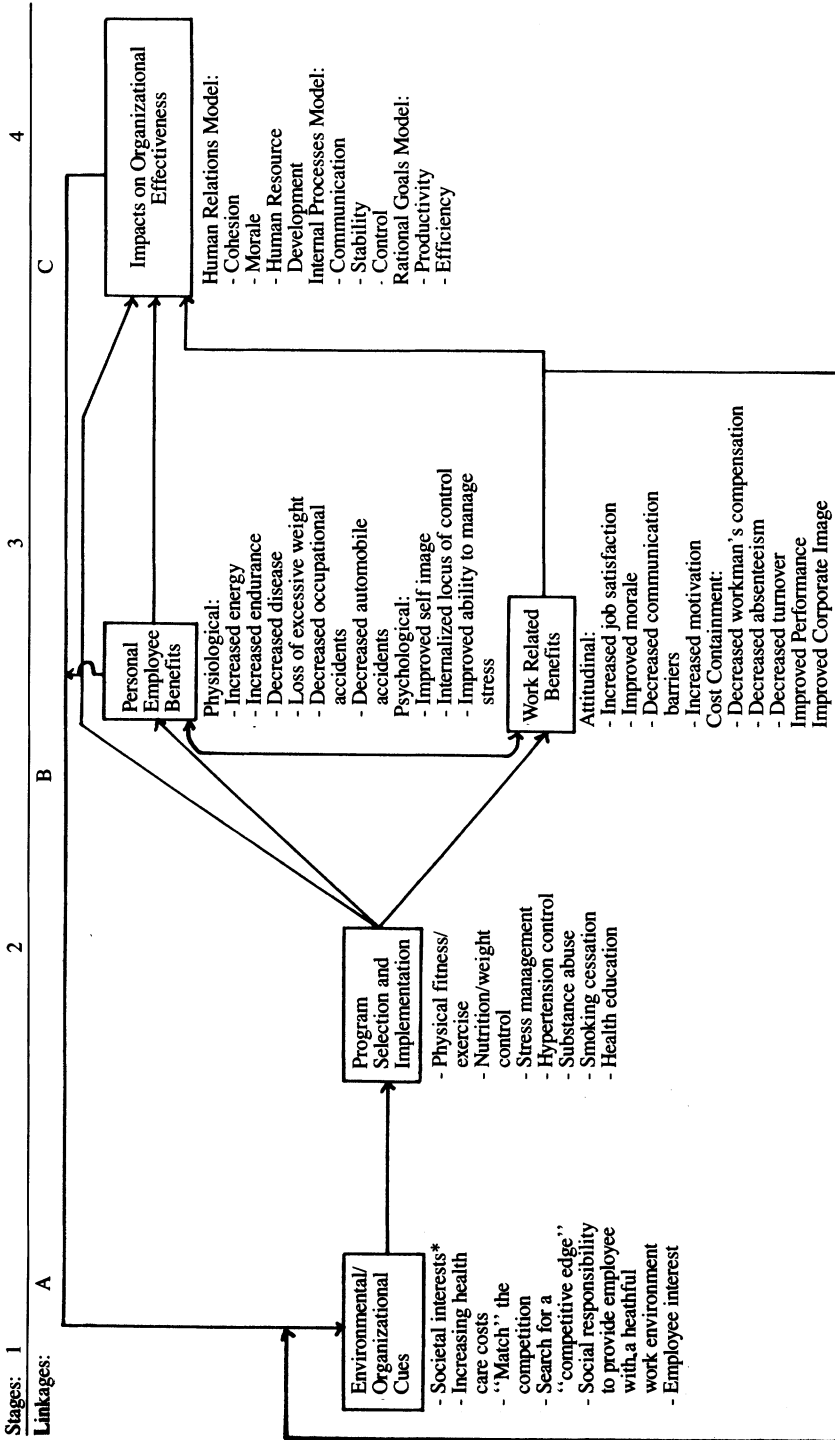
Stage 1: Environmental and Organizational Cues

Environmental and organizational cues determine the probability that an EHMP will be initiated, the degree of management commitment to the program, and the type of program component(s) implemented. A variety of environmental triggers may lead managers to implement an EHMP. These include industry pressures to match competitor benefits, popular pressures for healthier lifestyles, and societal pressures on organizations to provide employees with healthy work environments. Organizational cues include employee pressures for programs, economic pressures to reduce health care costs, and work pressures on employees to perform under stressful conditions

Stage 2: Program Selection and Implementation

The mix of program components an organization selects is a function of prevailing environmental and organizational cues. Linkage A suggests that if prevailing cues stress health care costs, a hypertension screening program—the program leading to maximum cost benefits (Fielding, 1982)—should be considered. If prevailing cues stress concern about cardiovascular illness, however, a broader mix of components (e.g., aerobic exercise, hypertension screening, nutrition and weight control) should be considered for the EHMP. Careful consideration of environmental and organizational cues will suggest a logical, incremental order of component selection and implementation. Prevailing environmental and organi-

Figure 2
Framework for EHMP Research



*research findings as reported in the literature are summarized by Stage 1.

zational cues also affect such implementation issues as the amount of budget allocated to the EHMP, the number of employees hired to staff the EHMP, and the reporting structure of the EHMP.

Stage 3: Personal and Work Related Outcomes

The proposed framework suggests that EHMPs have both individual and work-related benefits. Personal outcomes may be both physiological and psychological. For example, a physical fitness program may lead to physiological benefits such as weight-loss or decreased blood pressure and/or psychological benefits such as increased self-esteem and self-confidence.

For these personal outcomes to manifest themselves as organizational benefits, employees must have organizational commitment and loyalty. Whether increased commitment and loyalty result from EHMPs is a research question. Preliminary evidence, however, suggests that EHMPs contribute to improved relations with co-workers and supervisors, improved morale, increased job satisfaction (Hoffman & Hobson, 1984; Pauly, 1982), improved productivity, and reduced absenteeism, health care costs, and turnover, (Baun, Bernacki, & Tsai, 1986; Bernacki & Baun, 1984; Parker & DeCotiis, 1983).

Although the foregoing outcomes are positive, as is indicated above, some organizational effects could be negative. EHMPs could result in increased health care, disability, and pension costs as program "graduates" live longer. In addition, the potentially negative repercussions of some components (e.g., injuries from exercise programs, increased stress from smoking cessation or weight loss programs) must be considered in EHMP research (Russel, 1986; Warner, 1987).

Stage 4: Effects on Organizational Effectiveness

The proposed framework suggests that personal employee and/or work related benefits may influence organizational effectiveness (OE). The EHMP outcomes of decreased absenteeism, health care costs, and turnover, as well as improved performance and recruiting are standard measures of OE (Steers, 1977). Whether a particular manager or researcher considers these to be OE outcomes, however, depends upon the OE model adopted. Criteria of three OE models (human relations, internal processes, and rational goal) presented by Quinn & Rohrbaugh (1983) are outlined in Stage 4 of the framework. How the management scholar can contribute to the challenge of understanding the effect of EHMPs on OE is addressed in the next section.

Research Agenda

The EHMP framework contains three sets of critical linkages: A—the linkage between Environmental/Organizational Cues and Program Selection and Implementation; B—the linkage between Program Selection and Implementation and Personal Employee and Work Related Benefits; and C—the linkage between Personal Employee and Work Related Benefits and Impacts on Organizational Effectiveness. EHMP is presently not grounded in theory, as there are theoretical underpinnings and existing research only for the intermediate linkage set (B). Future conceptual and practical development in EHMP will depend upon the development of an overarching theoretical framework, one which can encompass

the sub-theories upon which existing research is based and which can explain the external linkages (A and C) that have yet to be addressed. We believe that management scholars have the required knowledge to provide such a framework. An integrative framework for studying EHMPs can contribute both to understanding why and how EHMPs function as well as to understanding how EHMPs affect such traditional management issues as productivity and effectiveness. The remainder of this section addresses how management scholars can contribute to understanding the framework's external linkages (A and C).

Linkage 'A': The Bases for EHMP Adoption

Although Driver & Ratliff (1982), Terborg (1986), and Warner (1987) address why EHMPs are adopted, they do not do so from a theoretical perspective. They present such EHMP adoption reasons as increased health care costs, social responsibility, and competitive pressure. These reasons are valid, but can and should be incorporated into a theoretical framework.

Several perspectives of organization theory could form the basis for research to further our understanding of this first critical linkage. Two perspectives—institutionalization and uncertainty reduction—suggest possible theoretical rationales for adopting EHMPs.

The institutionalization perspective suggested by Meyer and Rowan (1977) can contribute to an understanding of the adoption of EHMPs by particular organizations and its wider diffusion within industries and across industrial types. Meyer and Rowan (1977) argue that organizations adopt practices and procedures that are defined and approved by prevailing rationalized concepts of organizational work and that are institutionalized in society, independent of the immediate efficacy of the acquired practices and procedures. An institutionalization perspective suggests that predictors of EHMP adoption and diffusion include depth and time period of social acceptance of the health promotion concept, EHMP acceptance by leading organizations, and technological clarity of the focal firm or industry.

Thompson's (1967) study concerning the reduction of organizational uncertainty is also relevant to the EHMP adoption issue. One of Thompson's strategies for buffering core technology from uncertainty is to use preventive maintenance: "Preventive maintenance, whereby machines or equipment are repaired on a scheduled basis, thus minimizing surprise, is another example of buffering" (p. 20). Similar rationale to that used for preventive maintenance of equipment has been proposed for EHMPs (Ivancevich & Matteson, 1980). They address decreased cost as well as decreased uncertainty benefits of both human and equipment preventive maintenance programs. If preventive maintenance leads to increased effectiveness by decreasing uncertainty when equipment is a critical component of the core technology, surely preventive maintenance in the form of health promotion could also decrease uncertainty in organizations with core technologies that have extensive human resource dependencies.

Linkage 'C': The Impact of EHMP on OE

Although OE is the ultimate dependent variable of organizational studies (Cameron & Whetton, 1983; Robbins, 1983), the development of an overall ap-

proach to evaluating OE is in disarray (Cameron & Whetton, 1983; Gaertner & Ramnarayan, 1983; Quinn & Rohrbaugh, 1983; Zummato, 1984). The principle challenges to OE assessment are a multiplicity of OE models and varying constituencies who view the construct from differing perspectives (Cameron & Whetton, 1983; Quinn & Rohrbaugh, 1983; Steers, 1977). The framework proposed in this paper allows the researcher to consider EHMP from various OE model perspectives and provides a mechanism with which to make appropriate OE model decisions. Personal and work related attitudinal outcomes of the framework are related to both human relations and internal processes models. For example, as employees gain psychological and physiological benefits of EHMPs, they may attain higher morale (human relations model) and learn to operate more effectively within their work groups (internal processes model). Cost containment and performance outcomes of EHMPs are related to the rational goal model of OE (Quinn & Rohrbaugh, 1983).

In this section we have presented an EHMP research framework that identifies key research variables and relationships between those variables. Rather than presenting specific hypotheses, we suggest research directions and have indicated how various perspectives of organizational theory could contribute to the study of EHMP. Determining why top management decides to implement EHMPs and how these programs contribute to OE should contribute significantly to our conceptual understanding of EHMPs, to the practical development and implementation of EHMPs, and to our understanding of how individuals and organizations might become more effective.

Conclusion

This paper argues that EHMP is not grounded in theory, though there are theoretical underpinnings for some intermediate linkages of a proposed EHMP framework. It suggests further that management researchers, by addressing the two weakest links in the EHMP framework and by being familiar with the outcomes of the intermediate linkages, can contribute to the development of the overarching framework that EHMP presently lacks. In turn, by studying EHMPs, management scholars may derive more elaborate and precise explanations of individual and organizational behavior. As EHMP research progresses, the research framework presented here will expand and give rise to a more detailed and developed model. The research directions suggested in this article will, in our view, further our understanding of EHMP and of other important areas of organizational functioning and will provide practical guidance for EHMP adoption and implementation decisions.

References

- Alderman, M., & Davis, T. (1976). Hypertension control at the worksite. *Journal of Occupational Medicine, 18*, 793-796.
- Baun, M.S., Bernacki, E.J., & Tsai, S.P. (1986). A preliminary investigation: Effect of a corporate fitness program on absenteeism and health care cost. *Journal of Occupational Medicine, 28*, 18-22.
- Bernacki, E.J., & Baun, W.B. (1984). The relationship of job performance to exercise adherence in a corporate fitness program. *Journal of Occupational Medicine, 26*, 529-531.

- Blair, S.N., Peserchia, P.V., Wilbur, C.S., & Crowder, J.H. (1986). A public health intervention model for work-site health promotion. *Journal of the American Medical Association*, 255, 921-926.
- Brownell, K.D., & Cohen, R.Y. (1984). Weight loss competitions at the worksite: Impact on weight, morale and cost effectiveness. *American Journal of Public Health*, 74, 1283-1285.
- The Bureau of National Affairs, Inc. (1983). *Controlling health care costs: crisis in employee benefits*. Washington, DC: Author.
- The Bureau of National Affairs, Inc. (1986). *Health care costs: Where's the bottom line?* Washington, DC: Author.
- Cameron, N., & Whetton, D. (1983). *Organizational effectiveness: A comparison of multiple models*. New York: Academic Press.
- Caplan, R.D., Cobb, S., & French, J.R.P., Jr. (1979). White collar workload and cortisol: Description of a circadian rhythm by job stress? *Journal of Psychosomatic Research*, 23, 181-192.
- Cox, M.H. (1984). Fitness and lifestyle program for business and industry: Problems in recruitment and retention. *Journal of Cardiac Rehabilitation*, 4, 136-142.
- Doll, R., & Peto, R. (1976). Mortality in relation to smoking! 20 years' observation on male British doctors. *British Medical Journal*, 2, 1526-36.
- Driver, R.W., & Ratliff, R.A. (1982). Employers' perceptions of benefits accrued from physical fitness programs. *Personnel Administrator*, 27, (8) 21-26.
- Fielding, J. (1979). Preventive medicine and the bottom line. *Journal of Occupational Medicine*, 21, 79-83.
- Fielding, J. (1982). Effectiveness of employee health improvement programs. *Journal of Occupational Medicine*, 24, 907-916.
- Fielding, J. (1984, June). Evaluation of worksite health promotion: Some unresolved issues and opportunities. *Corporate Commentary*, 1, 9-15.
- Gaertner, G.H., & Ramnarayan, S. (1983). Organizational effectiveness: An alternative perspective. *Academy of Management Review*, 8, 97-107.
- Goldenhar, L.M., & Edington, D.W. (1986). Fitness programs for worksite health promotion. In *Worksite health promotion: Resource guide* (pp. 1-18). Lansing, MI: Michigan Department of Public Health, Center for Health Promotion.
- Golembiewski, R.T., & Proehl, C.W., Jr. (1978). A survey of the empirical literature on flexible workhours: Character and consequences of a major innovation. *Academy of Management Review*, 3, 837-853.
- Hammond, E.C., & Horn, D. (1984). Smoking and death rates—report on forty-four months of follow up of 187,783 men *Journal of American Medical Association*, 251, 2840-2853.
- Hoffman, J.J., & Hobson, C.J. (1984). Physical fitness and employee effectiveness. *Personnel Administrator*, 29, (4), 101-113, 126.
- Holt, R.R. (1982). Occupational stress. In L. Goldberger and S. Bresnitz (Eds.), *Handbook of stress* (pp. 419-444). New York: Free Press.
- Hunt, D.M., & Michael C. (1983). Mentorship: A career development tool. *Academy of Management Review*, 8, 475-485.
- Ivancevich, J.M., & Matteson, M.T. (1980, Autumn). Optimizing human resources: A case for preventive health and stress management. *Organizational Dynamics*, 9, 5-25.
- Kahn, R.L. (1981). *Work and health*. New York: Wiley.
- Kondrasuk, J.N. (1981). Studies in MBO effectiveness. *Academy of Management Review*, 6, 419-430.
- Kurtz, N.R., Googins, B., & Howard, W.C. (1984). Measuring the success of occupational alcoholism programs. *Journal of Studies on Alcoholism*, 45, 33-45.
- Leviton, L.C. (1985, July). *Worksite health promotion and its status in southwestern Pennsylvania*. Health Policies Institute Policy Series # 10. Pittsburgh, PA: Graduate School of Public Health, University of Pittsburgh.
- Maxey, C., Roy, D.P., & Kerr, S. (1982). *A study of executive heart health programs in selected companies*. Los Angeles: American Heart Association.
- Meyer, J., & Rowan, B. (1977). Institutionalized organizations: Formal structure as myth and ceremony. *American Journal of Sociology*, 83, 340-363.

- Mowday, R. T., Porter, L. W., & Steers, R. M. (1982). *Employee-Organization Linkages*. New York: Academic Press.
- Munchus, G., III. (1983). Employer-employee based quality-circles in Japan: Human resource policy implications for American firms. *Academy of Management Review*, 8, 255-261.
- O'Donnell, M. P., & Ainsworth, T. H. (1984). *Health promotion in the workplace*. New York: Wiley.
- Parker, D. F., & DeCotiis, T. A. (1983). Organizational determinants of job stress. *Organizational Behavior and Human Performance*, 32, 160-177.
- Pate, R. L., & Blair, S. N. (1983). Physical fitness programming for health promotion at the worksite. *Preventive Medicine*, 12, 632-643.
- Pauly, J. T. (1982). The effects of a 14-week employee fitness program on selected physiological and psychological parameters. *Journal of Occupational Medicine*, 24, 457-463.
- Quinn, R. E., & Rohrbaugh, J. (1983). A spacial model of effectiveness criteria: Towards a competing values approach to organizational analysis. *Management Science*, 29, 363-377.
- Robbins, S. P. (1983). *Organization theory—The structure and design of organizations*. Englewood Cliffs, NJ: Prentice-Hall.
- Russel, L. B. (1986). *Is preventive better than cure?* Washington: Brookings Institution.
- Schneiderman, L. J. (Ed.). (1982). *The Practice of Preventive Health Care*. Menlo Park, CA: Addison Wesley.
- Schwartz, G. E. (1980). Stress management in occupational settings. *Public Health Reports*, 95, 99-108.
- Steers, R. M. (1977). *Organizational effectiveness: A behavioral view*. Santa Monica: Goodyear.
- Terborg, J. R. (1986). Health promotion at the worksite: A research challenge for personnel and human resource management. In K. H. Rowland & G. R. Ferris (Eds.), *Personnel and Human Resources Management* (Vol. 4, pp. 225-267). Greenwich, CT: JAI Press.
- Thompson, J. D. (1967). *Organizations in action*. New York: McGraw-Hill.
- Warner, K. E. (1987, Spring). Selling health promotion to corporate America: Uses and abuses of the economic argument. *Health Education Quarterly*, 14, 39-55.
- Warner, K. E., & Murt, H. A. (1984). Economic incentives for health. *Annual Review of Public Health*, 5, 107-133.
- Zumamoto, R. F. (1984). A comparison of multiple constituency models of organization effectiveness. *Academy of Management Review*, 9, 606-616.

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