

THE RELATIONSHIP BETWEEN ELEMENTS OF ORGANIZATIONAL
RESTRUCTURING AND MANAGER STRESS:
A PHARMACEUTICAL INDUSTRY STUDY

by

Paul J. Gil

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Management in Organizational Leadership

UNIVERSITY OF PHOENIX

July 2008

UMI Number: 3334976

INFORMATION TO USERS

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleed-through, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.



UMI Microform 3334976
Copyright 2008 by ProQuest LLC
All rights reserved. This microform edition is protected against
unauthorized copying under Title 17, United States Code.

ProQuest LLC
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106-1346

© 2008 by PAUL J. GIL
ALL RIGHTS RESERVED

THE RELATIONSHIP BETWEEN ELEMENTS OF ORGANIZATIONAL
RESTRUCTURING AND MANAGER STRESS:
A PHARMACEUTICAL INDUSTRY STUDY

by

Paul J. Gil

July 2008

Approved:

William Shriner, Ph.D., Mentor

Greg Goodman, Ph.D., Committee Member

Brian Polding, Ph.D., Committee Member

Accepted and Signed: William Shriner 7/30/08
William Shriner Date

Accepted and Signed: Greg Goodman 7/30/08
Greg Goodman Date

Accepted and Signed: Brian Polding 7/30/08
Brian Polding Date

Dawn Iwamoto 8/25/2008
Dawn Iwamoto, Ed.D. Date
Dean, School of Advanced Studies
University of Phoenix

ABSTRACT

This quantitative study investigated possible correlations between elements of organizational restructuring and managers' stress and health. Responses to three web-based surveys from 130 global pharmaceutical industry managers were analyzed using descriptive and inferential statistics including correlation analysis and factor analysis. Findings showed communication-related stressors to be the most critical, with delay in and lack of communication causing the highest levels of stress. Restructuring stress leads to mental health issues. Organizations should consider adopting resources such as employee assistance programs and professional development training to assist managers in the global pharmaceutical industry in adapting to rapid change and upheaval.

DEDICATION

I dedicate this study to my family, who supported me with encouragement which enabled me to endure and fulfill my dream. I dedicate this to my colleagues in the pharmaceutical industry with whom I have shared struggles and success. I dedicate this study to my colleagues at the University of Phoenix who have shared so much and inspired me to set the tone for continual lifelong learning.

ACKNOWLEDGEMENTS

First, I extend my gratitude to my mentor, Dr. William Shriner, who guided my studies and continually shared his knowledge and leadership. Thank you for your extraordinary support and for providing the light on my journey. My gratitude extends to Dr. Greg Goodman, whose knowledge and personal experience inspired me to persevere and surmount all challenges, and to Dr. Brian Polding, who graciously accepted a late invitation as a committee member and provided key insights into my studies. Finally, my thanks go to my colleagues Susanne Rommel and Michael Warncke for their guidance and assistance with the statistical analysis of the data and to Lisa Trujillo for her assistance preparing the online surveys.

TABLE OF CONTENTS

LIST OF TABLES	xii
LIST OF FIGURES	xiv
CHAPTER 1: INTRODUCTION	1
Background	2
Problem Statement	3
Context of the Problem	5
Purpose	6
Significance of the Study	6
Nature of the Study	8
Research Method Appropriateness	9
Research Questions	9
Hypotheses	10
Theoretical Framework	12
Definitions	15
Assumptions	16
Scope, Limitations, and Delimitations of the Study	17
Summary	17
CHAPTER 2: REVIEW OF THE LITERATURE	19
Documentation	20
Mergers, Acquisitions, and Restructuring	20
Research on Work-Related Stress and Coping	23
Stress Resulting from Workplace Changes	24

Change in the Workplace and Its Relationship to Stress	25
Antecedents of Stress	26
Job Insecurity	28
Separation Anxiety.....	28
Compensation	29
Career Progression	29
Lack of Communication	29
Delay of Information.....	29
Subordinate Inquiries	30
Rumors	30
Outcomes of Workplace Stress	31
Moderators of Stress	33
Leadership and Stress Management.....	34
Stress Within the Organization	36
Manager and Employee Stress.....	37
Coping with Stress Caused by Change in the Workplace	40
Conclusion	43
Summary	44
CHAPTER 3: METHOD	45
Research Method and Design	46
Appropriateness of the Research Design	48
Population, Sampling, Data Collection Procedures, and Rationale.....	50
Population	50

Sampling	50
Data Collection	51
Triangulation of Data	52
Instruments.....	53
Restructuring Elements Analysis Tool (REAT)	53
Pressure Management Indicator (PMI).....	54
SF-36v2 [®] Health Survey	56
Reliability.....	56
Validity	57
Data Analysis	58
Organization and Clarity.....	59
Summary.....	60
CHAPTER 4: RESULTS	63
Purpose.....	63
Research Questions and Hypotheses	64
Research Question 1	64
Research Question 2	65
Research Question 3	66
Research Question 4	67
Variables	67
Pilot Study.....	69
Data Collection	70
Sample Characteristics.....	70

Results.....	72
Restructuring Element Analysis Tool (REAT).....	72
Pressure Management Indicator (PMI).....	74
SF-36v2 [®] Health Survey.....	79
Correlation Analysis	82
Factor Analysis	83
Correlation of REAT Factor Scores.....	89
Summary	91
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS	94
Responses to Research Questions.....	95
Research Question 1	95
Research Question 2	96
Research Question 3	96
Research Question 4	97
Conclusions.....	98
Restructuring Element Analysis Tool (REAT).....	98
Pressure Management Indicator (PMI).....	99
SF-36v2 [®] Health Survey.....	101
Implications of the Study	102
Implications for Organizations	103
Implications for Managers	104
Significance of the Study to Leadership.....	104

Recommendations.....	106
Summary.....	107
REFERENCES	110
APPENDIX A: LETTER OF INFORMED CONSENT	122
APPENDIX B: RESTRUCTURING ELEMENTS ANALYSIS TOOL (REAT)	124
APPENDIX C: PMI SAMPLE QUESTIONNAIRE.....	127
APPENDIX D: SF-36v2 [®] SAMPLE QUESTIONNAIRE	130
APPENDIX E: PERMISSION TO USE THE PMI.....	133
APPENDIX F: PERMISSION TO USE THE SF-36v2 [®] HEALTH SURVEY.....	135

LIST OF TABLES

Table 1 <i>Corporate Constituents and Their Concerns during Mergers and Acquisitions</i>	4
Table 2 <i>Twenty Largest Pharmaceutical Companies</i>	22
Table 3 <i>PMI Categories and Scales</i>	55
Table 4 <i>REAT, PMI and SF-36v2[®] Health Survey Scales</i>	68
Table 5 <i>Age Distribution of Sample</i>	71
Table 6 <i>Type of Restructuring Experienced by Participants</i>	72
Table 7 <i>REAT: Stressors by Rank and Mean (n = 130)</i>	73
Table 8 <i>PMI Survey Results by Score (n = 130) in Relation to the Norming Group (N = 20,981)</i>	76
Table 9 <i>Results of the SF-36v2[®] Relating the Sample Population (n = 130) to the General Population (N = 6,742)</i>	81
Table 10 <i>Correlation Matrix of REAT and PMI Scales</i>	84
Table 11 <i>Correlation Matrix of REAT and SF-36v2[®] Scales</i>	85
Table 12 <i>Correlations Within the REAT Scales, the PMI Subscales, and the SF-36v2[®] Scales</i>	86
Table 13 <i>REAT: Factors and Loadings</i>	88
Table 14 <i>Correlation Matrix of REAT Factors and PMI Scales</i>	90
Table 15 <i>Correlation Matrix of REAT Factors and SF-36v2[®] Health Survey Scales</i>	91

LIST OF FIGURES

Figure 1. SF-36® measurement model (Ware, 2005) 57

CHAPTER 1: INTRODUCTION

One of the major challenges facing pharmaceutical companies today is finding new, innovative medicines to replace existing ones as patents expire (Shanley & Bartels, 2006). Scientific challenges of new drug development, escalating costs of research, and increasing regulatory hurdles imposing tougher safety requirements have caused a sharp decline in recent drug approvals over recent years (Jack & Weismann, 2006). These pressures, coupled with the emergence of low margin, high volume generic drugs, have forced restructurings, mergers, and acquisitions among pharmaceutical companies to drive down costs and win their currently fragile market share (Cohen, Gangi, Lineen, & Manard, n.d.).

The intense market pressures on companies in this highly competitive business bring stress to workers. Often it is only the highest level executives who are directly involved in the merger and acquisitions or restructuring process (Kanter, 1987). As a result, lower level employees may not be informed as mergers and acquisitions (M&As) or restructurings progress. Middle managers, not in the executive information loop, are then forced into a position of diffusing the stressful situation among those they supervise in order to continue to accomplish departmental objectives (Napier, Simmons, & Stratton, 1989).

In a time of traumatic change in the workplace (Kanter, 1987), stress affects people in many different ways, and a relationship between past experience and life history or background may shed light on how they experience and cope with it. Understanding such a relationship may enable business leaders to work well with employees who undergo traumatic change at work caused by M&As and/or restructuring.

This quantitative research study was designed to expand on knowledge of relationships between elements of restructuring and managers' stress and health. The first chapter includes background information about organizational restructuring and poses questions concerning the stress it causes the constituents of a corporation. The problem is stated, as is the purpose of the study, its significance, and its nature. Research questions are presented. The theoretical framework for the study, definitions of terms used, and assumptions are discussed along with the scope, limitations, and delimitations of this research.

Background

In the United States, more than \$1 trillion worth of M&As were anticipated in 2005—up from \$844 billion in 2004 (“Mergers Bring Cloud,” 2005). Although M&As and restructuring are often welcomed by investors because they bring greater efficiency and returns, they may have a serious detrimental effect because major organizational change causes stress to workers (Nguyen & Kleiner, 2003).

American businesses lose more than \$300 billion annually in productivity, accidents, absenteeism, turnover, medical, legal, insurance fees, and workers' compensation because of workplace stress (Brillhart, 2004). In organizations that have recently undergone restructuring, uncertainty and job insecurity are identified as causes of stress (Gavin & Dileepan, 2002). Limited empirical research has been done in organizations to identify and differentiate factors causing restructuring-related stress among managers (European Agency for Safety and Health at Work, 2000). Conversely, a great deal of research on stress has been focused on its antecedents such as M&As (Wanberg & Banas, 2000), outcomes such as employee turnover and health issues

(Panchal & Cartwright, 2001), and moderators of organizational stress such as effective leadership (Covin, Kolenko, Sigtler, & Tudor, 1997).

A corporation typically consists of a board of directors, shareholders, a CEO, other executives, managers, and workers (KPMG, 2000). The managerial hierarchy and goals of organizations determine how communication and supervision occur. Those executives at the top levels whose concern is most likely to increase profit do not have the same focus as lower level employees, although job security appears to be a top concern for all (KPMG, 2000). Table 1 shows the constituents of a typical corporation and their major concerns during a M&A or restructuring.

The stressors indicated in Table 1 and considered in this study may have a significant effect upon managers and employees. While job security and issues relating to compensation may weigh in as a concern for both groups, career progression can also be a worry for managers (KPMG, 2000). Their careers may be interrupted due to job loss, and they may not be able to retain or find new jobs at or above their current levels. These concerns produce stress which, in turn, may affect manager and employee performance. While the population under study is in the global pharmaceutical industry, similar issues may affect all companies undergoing similar changes and stressors.

Problem Statement

Stress is present in the global pharmaceutical industry as a result of an increased number of M&As and restructuring (Shanley & Bartels, 2006). The chaotic climate often brought about merely by the announcement of a merger, an acquisition, and/or restructuring results in heightened stress among employees at every level of the organization (Kanter, 1987). Some individuals are better able to cope with stress than

Table 1

Corporate Constituents and Their Concerns During Mergers and Acquisitions

Constituent Group	Major Concerns
CEO	Growth Job security Succession
Board, Shareholders, and Analysts	Share price Earnings growth and predictable forecasts
Lenders	Cash flow quality/predictability Adequacy of collateral
Managers	Job security Career progression Financial incentives
Employees	Job security Wages and benefits
Alliance partners	Conflicts of interest Proprietary information
Suppliers	Ongoing purchases Supply chain integration
Customers	Quality of product/service Pricing
Regulators	Compliance Disclosure

Note. KPMG, 2000, p. 3.

others (Williams & Cooper, 1998). The problem that remains unsolved is to understand the elements of restructuring which cause stress in the global pharmaceutical industry in order to enable managers to moderate these stressors.

Managers are the primary drivers of organizational behavior—and their behavior is quite possibly the most powerful form of cultural communication and influence in the organization (Carleton & Lineberry, 2004). According to Flyvbjerg (2000), “in the study of human affairs, there appears to exist only context-dependent knowledge” (p. 221). The context of the work environment offers the potential for rich data to understand the restructuring elements that cause stress.

Pharmaceutical companies undergoing restructuring provide a unique opportunity to research those factors that may cause managers stress during this traumatic change in the work environment. Lack of communication, delay of information, and uncertainty produce conflict and stress. It is important that “all managers in the new organization be absolutely clear on and committed to where the organization is, where it is going, why it is going there and how it will get there” (Carleton & Lineberry, p. 99). The challenge is to discern which elements of the restructuring process cause stress in managers in the global pharmaceutical industry (European Agency for Safety and Health at Work, 2000). A quantitative correlation investigation was conducted to explore differences in the presence of restructuring elements and the stress experienced by managers in the global pharmaceutical industry that result from the presence of such elements. In addition, the physical and mental health of the managers was also assessed.

Purpose

In every M&A, a critical success factor is to maximize newly combined infrastructure and personnel by leveraging expertise, consolidating work sites, and eliminating duplications. During such restructurings, organizations strive to manage a period of frequent change in which a range of decisions will be made running the gamut from organizational fine tuning to large infrastructure to ensure the long-term success of the company. Throughout the restructuring period, often a lack of communication, delays of information, and uncertainty leave managers with little or no information to provide while their direct reports demand this information. This conflict produces stress. The challenge is to discern the level to which certain restructuring elements cause the stress and health problems brought about by M&As and restructurings in the global pharmaceutical industry.

The purpose of this quantitative study was to test hypotheses regarding the elements of restructuring (job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors) and their relationship with manager stress and health during these periods of restructuring in the global pharmaceutical industry. The findings of this research may enable managers to identify and predict elements which cause stress and health problems during organizational restructuring, thereby enabling them to mitigate their effects.

Significance of the Study

The motivation for this study is to enhance understanding of the relationship between the elements of restructuring and manager stress and health. The odds of achieving success after a merger or acquisition are not good, and most fail because the

cultures of the organizations are not integrated (Carleton & Lineberry, 2004). This study addressed three significant elements of the current business world that affect the role of leadership in the global pharmaceutical industry: (a) managers, (b) stress, and (c) major organizational change, especially M&As and restructuring (Kanter, 1987). How individuals in positions of leadership behave can positively or negatively influence the success of a merger (Allenbaugh, 2003). A leader's behavior may also make a difference in how subordinates experience stress and display their coping abilities during this period of dramatic organizational change. According to Bass and Avolio (1993), "Cultural norms arise and change because of what leaders focus their attention on, how they react to crises, and behaviors they role model" (p. 115). Thus, the success of the M&A may be largely dependent upon addressing the specific elements which cause the greatest amount of manager stress. One interest in the ability to cope that has significance for leadership is the type of stress produced by the reorganization. At a time when leaders in the business arena are faced with uncertainty in the corporate environment (Kanter, 1987), it is important to know what elements are the greatest stress influences which can potentially cause the demise of the new organization.

Managers are in the forefront in dealing with the stress placed on employees when an M&A or restructuring occurs. As a result, they must exhibit behaviors and the highest level of coping skills in order to mitigate the stress on those they supervise (Bass & Avolio, 1993). The impact on leadership at the higher levels depends on the ability of the middle managers to understand the sources of stress and to cope with them, as employees must continue to do their jobs well during the period of uncertainty in order for the company to continue to thrive (Judge, Thoresen, Pucik, & Welbourne, 1999). The results

of this study provide data to assist managers and leaders in understanding the elements of organizational restructuring and the stress they produce. In addition, this study supplements the leadership literature supporting organizational restructuring success.

Nature of the Study

The goal of this study was to examine the stressors in the work environment produced by M&As or other organizational restructurings. Quantitative research is the appropriate method to achieve this goal because a correlation study like this was able to examine the association between form, direction, and magnitude of the association and relationships between and among variables (Creswell, 2002). This study utilized a multivariate quantitative approach to examine the relationships between multiple independent variables and their combined effect upon two dependent variables. A correlation analysis statistical procedure was used to explain the variation in the dependent variables by the variance of each independent variable (the importance of each predictor) as well as the combined effect of all independent variables designated by R^2 (Creswell, 2002).

Examining pharmaceutical industry managers who have directly experienced an M&A or a restructuring may offer a possibility for real understanding of manager stress and coping under these conditions. The analysis may lead to a new reality of the effects of stress and health problems caused by M&As and restructuring along with better insight into the coping strategies used by managers and employees in the case of several organizations within the global pharmaceutical industry.

Research Method Appropriateness

In order to determine which restructuring elements influence manager stress, this study examined restructuring-associated stress elements that can be expressed numerically and analyzed statistically. Quantitative research is more appropriate than a qualitative approach for this study because quantitative analysis supports the measurement of the impact and influence of these independent variables. While qualitative research may be used to examine underlying themes in organizational restructuring (Rowlett, 2005) and build theories, this quantitative study used an appropriately large number of participants to test hypotheses based on existing theories. This study measured differences among participants along certain dimensions using a correlation analysis formula to analyze the effects of these restructuring elements with respect to manager stress and health.

Research Questions

According to Gall, Gall, and Borg (1999), a researcher may choose hypotheses, questions, or objectives to guide research. Hypotheses are most often based on existing theory or previous research. Generally, the present study sought to identify those elements of restructuring that would cause managers to experience stress and health problems in times of major organizational change such as mergers, acquisitions, and restructuring. Specifically, the following questions guided this research:

1. What is the relationship between elements of organizational restructuring (as measured by the Restructuring Elements Analysis Tool (REAT) and manager stress in the workplace as measured by the Pressure Management Indicator (PMI; Williams & Cooper, 1996)?

2. Is restructuring in the organization causing stress on the manager as measured by the REAT and health problems as measured by the SF-36v2[®] (Ware, 2005)?
3. Does a relationship exist between the independent variables (job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors) and the dependent variable (level of stress)?
4. Does a relationship exist between restructuring elements and the physical and/or mental health of managers?

The answers to these questions may enable managers to identify and address elements of restructuring which cause stress during organizational restructuring. Strategies for coping were identified during the analysis of the data.

Hypotheses

“A hypothesis is a logical supposition, a reasonable guess, an educated conjecture . . . that provides a tentative explanation for a phenomenon under investigation” (Leedy & Ormrod, 2001, p. 6). Using correlation analysis, this study sought to draw inferences with respect to a population of workforce managers based on measurement data collected from a sample of pharmaceutical industry managers. The following hypotheses, analyzed through correlation analysis, are based on the multiple restructuring elements as identified by the REAT questionnaire and their influences on the level of stress experienced by the managers as measured by the PMI and on their physical and mental health as measured by the SF-36v2[®]:

H₁: There is no relationship between PMI score and any of the following: job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors.

H₂: Job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors will predict PMI score.

H₃: The relationship between job security and PMI score will be positive.

H₄: The relationship between separation anxiety and PMI score will be positive.

H₅: The relationship between compensation and PMI score will be positive.

H₆: The relationship between career progression and PMI score will be positive.

H₇: The relationship between lack of communication and PMI score will be positive.

H₈: The relationship between delay of information and PMI score will be positive.

H₉: The relationship between subordinate inquiries and PMI score will be positive.

H₁₀: The relationship between rumors and PMI score will be positive.

H₁₁: There is no relationship between SF-36v2[®] score and any of the following: job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors.

H₁₂: A relationship exists between SF-36v2[®] score and all of the following: job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors.

H₁₃: The relationship between job security and SF-36v2[®] score will be positive.

H₁₄: The relationship between separation anxiety and SF-36v2[®] score will be positive.

H₁₅: The relationship between compensation and SF-36v2[®] score will be positive.

H₁₆: The relationship between career progression and SF-36v2[®] score will be positive.

H₁₇: The relationship between lack of communication and SF-36v2[®] score will be positive.

H₁₈: The relationship between delay of information and SF-36v2[®] score will be positive.

H₁₉: The relationship between subordinate inquiries and SF-36v2[®] score will be positive.

H₂₀: The relationship between rumors and SF-36v2[®] score will be positive.

Theoretical Framework

The present study is based on four observations concerning managers and stress during periods of major organizational change. First, mergers, acquisitions, and restructuring cause stress for all employees and constituencies of the corporation (KPMG, 2000). Second, the stresses on managers caused by major organizational change may or may not affect their ability to cope successfully with their daily responsibilities. Next, according to the European Agency for Safety and Health at Work (EASHW, 2000), little research is available on the effects of stress on managers that are brought about by major organizational change. Finally, it is the researcher's belief that different elements of restructuring may cause varying levels of manager stress and may make a difference in the way managers cope with organizational change (EASHW, 2000).

Organizational restructurings in the forms of mergers, acquisitions, joint ventures, and divestitures are welcomed by investors who anticipate positive financial outcomes of increased efficiencies and productivity. Business deals and consolidations reflect ways companies continually reposition themselves in an expanding market. More than \$1 trillion worth of M&As were anticipated for 2005, up from \$844 billion in 2004 (“Mergers Bring Cloud,” 2005). However, the restructuring trend and business benefits can easily overshadow the potentially serious detrimental effects on employees—uncertainty and stress (Nguyen & Kleiner, 2003). According to Michie (2002), the generally accepted definition of *stress* is one that involves interaction between the situation and the individual; it is the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressures of the situation. Thus, stress is more likely in some situations than in others and in some individuals more than in others.

Stress does not always have a negative effect either on individuals or on organizations (Yost, 2002). It can often keep people alert and motivated, thereby increasing their productivity and efficiency. Stress can even become problematic in organizations when it is too low, leading to a decline in motivation and productivity. More often, however, high levels of stress caused, in part, by situational uncertainty may cause an array of negative outcomes in situations of organizational change (Yost, 2002).

Stress and health issues can extend beyond a single individual to many and, as a result, undermine the efficiency and effectiveness of the entire organization, requiring companies to consider human factors as well as financial ones when considering major organizational change (Gavin & Dileepan, 2002). As a result of a general lack of

consideration of personnel, American businesses lose more than \$300 billion annually in productivity, accidents, absenteeism, turnover, medical, legal, insurance fees, and workers' compensation due to workplace stress (Brillhart, 2004). Moreover, it is estimated that the failure to tackle people issues is the single biggest reason that more than 70% of deals fail to deliver against expectations (Howarth, 2003).

Situational difficulties created by conflicting cultures contribute to the widespread failure of corporate mergers, as the unique knowledge of corporate culture that managers possess is not generally taken into account (Weber & Camerer, 2003). While most firms undertake financial due diligence when they take over another company, they do not talk to enough managers and employees to carry out due diligence on their target's culture, structure, processes, and networks ("Why Too Many Mergers Miss the Mark," 1997). Consideration of the position of managers and their responsibilities during major organizational change may positively impact the bottom line of the company at such times.

A great deal of research has focused on organizational stress antecedents such as mergers, acquisitions, and restructuring; on outcomes such as turnover and health issues; and on moderators such as effective leadership. Few studies, however, identify and differentiate factors causing restructuring-related stress among managers and their employees who are experiencing this change simultaneously. This is important because managers are the front line in major organizational change, for they are responsible for maintaining the equilibrium of employees in an effort to continue to achieve organizational goals. Some managers and employees are able to cope successfully during periods of major organizational change, while others are not.

The underlying belief of the present study is that background and experiential factors differentiate managers and employees who are successful at coping with major organizational change from those who are not. In terms of the manager, this relates to both the trait and the situational models of leadership (Certo, 1980). For example, dealing with stress is a personal issue (Mueller, 2005). Personal moderators, such as confidence in the ability to find new employment, can change the effects of the causes of stress and alter the stress reaction. In addition, emotional stability is believed to be a key factor in an adaptive workforce (Pulakos, Schmitt, Dorsey, Arad, Hedge, & Borman, 2002).

According to Swanson and Power (2001), support and feedback from both managers and work colleagues during periods of change and restructuring can reduce stress. While all employees need to be adaptable and tolerant of uncertainty to operate effectively in today's changing and varied workplace (Pulakos, Arad, Donovan, & Plamondon, 2000), managers must be able to maintain their own equilibrium in order to help their employees continue to function in the stressful work environment. This requires that managers cope skillfully and successfully with the work situation and the employees they supervise even during times of major organizational change. No research has been found that identifies and quantifies the elements of restructuring that seem to contribute to a major portion of a manager's or an employee's stress during periods of major organizational change.

Definitions

The following terms will be used consistently throughout this document:

Acquisition: In an acquisition, one company acquires another either through direct sale for money or stock purchase (Nguyen & Kleiner, 2003).

Coping: Coping is defined as the constantly changing behavioral and cognitive efforts required to manage the internal and external demands of the limited resource or high stress environment (Fugate, Kinicki, & Scheck, 2002). It establishes a perceived controllability over the situation.

Manager: A manager is a person who plans, directs, coordinates, and supervises activities in a workplace (U. S. Department of Labor, 2006). In the context of this study, a manager will have two or more direct reports.

Merger: In a merger, companies join together, usually for the financial benefit of both companies (Nguyen & Kleiner, 2003).

Restructuring: A company may restructure itself—change the internal configuration of its divisions and departments—for financial or operational reasons (Nguyen & Kleiner, 2003).

Stress: According to Michie (2002), the generally accepted definition of *stress* is one that involves interaction between the situation and the individual; it is the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressures of the situation. Thus, stress is more likely in some situations than in others and in some individuals more than in others.

Assumptions

The underlying assumption in this study is that organizational restructuring causes stress and health problems for managers and subordinates. It is further assumed that some managers and subordinates are able to cope successfully with stress while others are not. In addition, it is believed that certain elements of restructuring can be differentiated as sources of stress for managers during these times of organizational change. Finally, it is

assumed that the best way to determine how individuals deal with stress during situations of workplace change is to examine the people within the reality of their context.

Scope, Limitations, and Delimitations of the Study

This study is limited to managers in the global pharmaceutical arena who have recently experienced major organizational change, defined as a merger, an acquisition, or restructuring. Caution should be taken in generalizing the findings to any other group, industry, or situation (Borg & Gall, 1983; Flyvbjerg, 2000).

This study is confined to surveying managers within the global pharmaceutical industry who have at least two direct reports and have experienced recent major organizational change, defined as a merger, an acquisition, or restructuring. This study focuses on identifying the elements of restructuring which appear to cause stress and affect physical and/or mental health among managers during major organizational change.

Summary

The independent variables, restructuring elements causing stress, were measured using a questionnaire, the Restructuring Elements Analysis Tool (REAT). REAT queries the participant across several dimensions including: (a) job security, (b) separation anxiety, (c) compensation, (d) career progression, (e) lack of communication, (f) delay of information, (g) subordinate inquiries, and (h) rumors. The dependent variables are level of stress as measured by the PMI and physical and/or mental health issues as measured by the SF-36v2[®]. The correlation design of this quantitative study incorporates the REAT questionnaire and a survey on stress (PMI; Williams & Cooper, 1996) along with a health evaluation tool, SF-36v2[®] (Ware, 2005). The result is a profile of managers that

informs organizational leaders about the factors that lead to stress among managers during periods of major organizational change. With this knowledge, organizational leaders can learn to address stress issues proactively in order to better facilitate major change. To explain the background of the study, the literature review in the following chapter focuses on the experience of restructuring among managers in organizations and the stress that it causes as well as coping mechanisms used to mediate such stress.

CHAPTER 2: REVIEW OF THE LITERATURE

The pharmaceutical industry began in the late 19th and early 20th centuries, but it did not expand substantially until the 1950s with the increased availability of penicillin and the development of the Salk vaccine to prevent polio (Gerber, 2007). While more than 200 pharmaceutical companies discover, develop, manufacture, and distribute drugs, a demand for efficiency, a crisis in research and development (R&D), and an attempt at economies of scale are forcing M&As as well as restructurings for these companies (Cuatrecasas, 2006). In a comment specifically related to R&D, Cohen et al. (n.d.) commented:

[The pharmaceutical industry's] crisis in R&D productivity is not going to be solved soon. From declining rates of innovation to increased costs of development, the industry is getting hit from every side. If the industry were not in such a "perfect storm"—with patent expirations, pricing pressures, low public opinion, challenges to intellectual property by increasingly aggressive generic companies, re-importation pressures, Medicare/Medicaid reform, and increasing regulatory hurdles—the R&D productivity issue may not be such a big deal. (p. 36)

Today's industry challenges have led to M&As among many of the pharmaceutical industry's companies, and the frequency with which this occurs has led to stress among managers and employees (Cuatrecasas, 2006). Therefore, the purpose of this study was to examine the elements of stress induced by restructuring in the global pharmaceutical industry.

Documentation

The literature review for this study deals primarily with three areas of exploration: (a) mergers, acquisitions, and restructuring in the global pharmaceutical industry; (b) stress in the workplace that results from M&As and restructuring; and (c) manager health outcomes associated with such stresses. Several title searches were conducted on these topics. In some cases, combinations of titles were entered to find links for a more in-depth result. The majority of the literature review documents were found in either the University of Phoenix online library or internet searches. These searches yielded refereed research journal articles, industry-specific journal and magazine articles, books, and doctoral dissertations.

Mergers, Acquisitions, and Restructuring

Organizational restructurings, in the forms of mergers, acquisitions, joint ventures, and divestitures, are welcomed by investors who anticipate positive financial outcomes of increased efficiencies and productivity. Business deals and consolidations reflect ways companies continually re-position themselves in an expanding market. More than \$1 trillion worth of mergers and acquisitions (M&As) were anticipated for 2005—up from \$844 billion in 2004 (“Mergers Bring Cloud,” 2005). The restructuring trend and business benefits can easily overshadow the potentially serious detrimental effects on employees such as uncertainty and stress (Nguyen & Kleiner, 2003).

Historically, M&As in the United States began in the late 19th century, reaching their peak at the turn of the century. Because of the rate of growth and increase in size of merged companies, the United States passed the Sherman Anti-Trust Act in 1890. This was the beginning of big business with companies such as the National Biscuit Company

(Nabisco), U.S. Steel, and International Harvester. The timing related to technological improvements; steam engines, railroads, electrical engineering, and the telegraph provided increased information exchange and goods transport that reduced manufacturing costs through economies of scale (Capdevila, 2000).

The advent of the desktop computer and the internet initiated the major period of M&As in the 1980s (Capdevila, 2000; Chase, Burns, & Claypool, 1997; Kode, Ford, & Sutherland, 2003; Oram, 2003). This merger mania has infiltrated all aspects of national and international business since the 1980s and shows no evidence of slowing down (Bower, 2001; Oram, 2003). This trend has greatly impacted the global pharmaceutical industry.

Galambos (n.d.) contended that the international pharmaceutical industry is moving towards a global oligopoly in which a few very large firms dominate. This is occurring through M&As. Combinations such as Pfizer/Warner Lambert, Glaxo Wellcome/SmithKline Beecham, Astra Zeneca, Sanofi-Aventis, and Bristol-Meyers Squibb are examples. Table 2 shows the top 20 pharmaceutical companies in terms of revenue, the location of their headquarters, the amount of revenue in U.S. dollars (in millions), and the number of employees.

The need to decide whether to compete or consolidate is related to R&D, sales, and marketing, as molecular genetics, rDNA technology, combinatorial chemistry, and bioinformatics currently drive the industry. For the first time, the large companies are not at the forefront of discovery; instead, the smaller pharmaceutical and biotechnology companies are making their mark in R&D. In the long run, however, economies of scale win out in regulatory processes, production, and global distribution; therefore, the trend

Table 2

Twenty Largest Pharmaceutical Companies

Rank 2004	Company	Country	Healthcare Revenue 2004 (USD millions)	Employees 2004
1	Pfizer	USA	52,516	115,000
2	Johnson & Johnson	USA	47,348	109,900
3	GlaxoSmithKline	UK	37,318	100,619
4	Sanofi-Aventis	France	31,615	96,439
5	Novartis	Switzerland	28,247	81,392
6	Hoffmann-La Roche	Switzerland	25,163	64,703
7	Merck & Co.	USA	22,939	62,600
8	AstraZeneca	UK	21,427	64,200
9	Abbott Laboratories	USA	19,680	50,600
10	Bristol-Myers Squibb	USA	19,380	43,000
11	Wyeth	USA	17,358	51,401
12	Eli Lilly and Company	USA	13,858	44,500
13	Bayer	Germany	10,554	113,060
14	Amgen	USA	10,550	14,400
15	Boehringer Ingelheim	Germany	10,146	35,529
16	Baxter International	USA	9,509	48,000
17	Takeda Pharmaceutical Co.	Japan	9,330	14,510
18	Schering-Plough	USA	8,272	30,500
19	Astellas Pharma	Japan	7,904	15,500
20	Procter & Gamble	USA	7,786	110,000

Note. From “Top 50 pharmaceutical companies,” 2005, *MedAdNews*.

towards M&As with companies of all sizes continues (Galambos, n.d.). The impact on the manager and individual employees is often termed “merger syndrome,” the fear of the

worst result which is usually job loss and/or relocation (Siehl & Smith, 1990).

Research on Work-Related Stress and Coping

The European Agency for Safety and Health at Work (EASHW, 2000) conducted an extensive meta-analysis of the research on workplace-related stress. They found three different approaches to defining and studying stress. In the first approach, stress is treated as an independent variable caused by the work environment. The second suggests that stress is a dependent variable, a psychological response to the environment. The third is a psychological approach that conceptualizes “work stress in terms of the dynamic interaction between the person and their work environment . . . the psychological approach” (p. 11). This third approach leads to the definition of stress as “a negative psychological state with cognitive and emotional components, and on its effects on the health of both individual employees and their organizations” (p. 12).

Coping, according to EASHW’s (2000) meta-analysis, is part of the stress process. It is context-dependent and independent of outcome. This means that coping pertains to what a person thinks and does in a stressful situation that is influenced by the environment in which it occurs and the resources that are available. Coping may or may not be successful, but it may be viewed either as a group of strategies or as a problem-solving process. Coping is related to both control and support.

Historically, work hazards were generally construed to be physical; now, they encompass the realm of the psychosocial as well. According to EASHW (2000), “psychosocial hazards may be defined as those aspects of work design and the organization and management of work, and their social and environmental contexts, which have the potential for causing psychological, social or physical harm” (p. 14). In

other words, the complexity of the activities and environment of the 21st century workplace can lead to psychological difficulties as well as illness. “Downsizing, outsourcing, subcontracting and globalization, with the associated change in employment patterns” (p. 15) are among the changes in the workplace perceived to cause stress.

These findings are similar to those of Sikora, Beaty, and Forward (2004) who attempted to create a model of stress that considers the “asynchronous, multiple, overlapping change (AMOC)” (p. 5) of the modern workplace. This is in contrast to the simplistic approach of Selye (1956). Selye was the first who attempted to show how stress in the workplace required adaptation by the worker in order to cope. In reality, the literature has focused on workplace change; antecedents or causes, outcomes, and mediators of stress; employees and stress; and coping strategies.

Stress Resulting from Workplace Changes

Stress is a psychological construct that may be construed as either good (eustress) or bad (distress) depending on the situation (Gilmore, 1994). According to Michie (2002), the generally accepted definition of *stress* is one that involves interaction between the situation and the individual; it is the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressures of the situation. Thus, stress is more likely in some situations than others and in some individuals than others.

Stress does not always have a negative effect in organizations or individuals. It can often keep people alert and motivated, thereby increasing their productivity and efficiency. Stress can become problematic in organizations when it is too low, leading to a decline in motivation and productivity. More often, however, high levels of stress may

cause an array of negative outcomes in situations of organizational change (Rowlett, 2005).

Unless organizations consider and manage the human factors, stress can extend beyond the individual to several people and undermine the efficiency and effectiveness of the organization (Gavin & Dileepan, 2002). American businesses lose more than \$300 billion annually in productivity, accidents, absenteeism, turnover, medical, legal, insurance fees, and workers' compensation due to workplace stress (Brillhart, 2004). It is estimated that the failure to tackle people issues is the single biggest reason why more than 70% of deals fail to deliver against expectations (Howarth, 2003).

Situational difficulties created by conflicting cultures contribute to the widespread failure of corporate mergers (Weber & Camerer, 2003). While most firms undertake financial due diligence when they take over another company, they do not talk to enough managers and employees to carry out due diligence on their target's culture, structure, processes, and networks ("Why Too Many Mergers Miss the Mark," 1997). Companies must implement measures to reduce stress or face the consequences of these stress-related costs that directly impact the bottom line and may jeopardize the success of the organization. Stress reduction is achieved through understanding the differences in stress reaction (antecedents, outcomes, and moderators), human factors, and individual needs.

Change in the Workplace and Its Relationship to Stress

When Selye (1956) began studying stress in the workplace more than 50 years ago, the stress on workers was somewhat limited to too much work and not enough money. Selye thought that all the worker had to do was to learn to adapt. According to Sikora et al. (2004), however, "today's worker is faced with numerous minor daily

stressors related to changes in technology and workplace practices as well as major upheavals of mergers, downsizing, restructurings, and wholesale re-engineering of how work is accomplished” (p. 4). In addition, the time between high stress events is getting shorter so that rapid change is a regular occurrence.

A merger is generally a one-time event. In the pharmaceutical industry, however, M&As and restructurings may occur frequently. This suggests that stress can not be studied from the point of view of a single, isolated event, but instead must be examined as an asynchronous, multiple, overlapping change (AMOC). This better reflects the current situation of repeated M&As seen in the pharmaceutical industry, for example (Sikora et al., 2004). In the AMOC context, the employee’s ability to adapt or cope lessens in the wake of the cumulative impact of change (Sikora et al., 2004).

Antecedents of Stress

Stress arises in the workplace from environmental, situational, and personal causes. Stress drains people of energy as they needlessly worry about issues when they could be better investing their energy elsewhere (Lewinter, 2003). Moreover, many stress antecedents exist in today’s work environment that can affect employees in varying degrees. Contrary to popular belief, it is no longer the amount of work and long hours, but unreasonable demands placed upon staff and poor relationships among people at work that are the biggest causes of workplace stress (Reade, 2003). In addition, employees often feel stressed in complex, technical environments with few opportunities for developing their skills and expertise. Becoming detached from the work environment itself may become both an antecedent of stress and a challenge for coping with it. This has become impossible, however, with the advent of electronic enablers such as cell

phones, laptops, pagers, internet, e-mail, computers, and voice mail. These create *technostress*, a state of stress caused by being continually connected to the workplace (Brillhart, 2004).

Michie (2002) maintained that success in managing and preventing stress depends on the culture of the organization. A climate of poor cooperation with unclear priorities raises anxiety. A culture of openness and understanding, rather than of blame and criticism, is essential to control workplace stress. Both the organizational environment and personal factors can become antecedents of stress. Dysfunctional workflows, inconsistencies in reward structure, and shortcomings in human resource development may cause time pressures, work overload, and concerns regarding career progress (Gavin & Dilepan, 2002).

Mergers, restructurings, and other changes can amplify organizational stress. Uncertainty and fear of potential consequences raise the anxiety level. Mergers have the potential to place employees' livelihoods in jeopardy, and this typically leaves them essentially powerless to effect change or control their situations (Fugate et al., 2002). Uncertainty and the perceived loss of control during organizational restructuring bring added elements of stress that may jeopardize employee health and well-being. A major cause of stress during restructuring is the fear that employees have lost control of their work situation and have only limited power to influence the changing organization (Marks, 1999). Employee reaction itself can also contribute to high stress levels. Resistance to change can undermine organizational change efforts, and benign neglect of organizational stakeholders can promote negative thinking and dissent in the workplace (Yost, 2002).

Stress may not be obvious within the organization. Employees may be reluctant to express their anxieties for fear of jeopardizing their career prospects and the pressure to appear outwardly “merger-fit” and willing and able to change. This false front may lead to long-term dysfunctional stress (Cartwright & Cooper, 1993). Management must be cognizant of the stress reaction, beginning with the potential stress-causing factors. In summary, antecedents of stress may be related to the organization or the environment of the job, or they may be personal. In reality, they are likely to be a combination of the two (Selye, 1956; Sikora et al., 2004).

Job Insecurity

Job insecurity is the degree to which the employee perceives his or her employment to be unstable. Employees provide services in exchange for fair pay and job security; when they feel that the company no longer provides these supports, the emotional bonds are broken, causing stress (Lin & Wei, 2006).

Separation Anxiety

Restructuring stress can affect emotions and behavior and trigger fears of losing social belongingness. Merely the announcement that people are leaving the organization and the prospect of dramatic changes in relationships and routines can cause stress. This is further amplified by the unconscious emotional recall of prior separations and losses, many of which have traumatic qualities (Astrachan, 2004).

Compensation

Restructuring can cause the fear of being forced to accept another position at a lower salary. In fact, in one study, researchers found that 40% of laid-off professionals between the ages of 21 and 37 took new positions at lower salaries (McGirt, Paskin, & Rosato, 2005).

Career Progression

Many middle managers anticipate hierarchical career progression as the main reward for their continued commitment, despite its clear diminution in the downsized, delayed organization (Thomas & Dunkerley, 1999). Where high performance was once rewarded with promotion and increased status, restructuring diminishes these opportunities with delaying and promotion freezing.

Lack of Communication

Following the announcement of an M&A, especially during the negotiation stage, little information is disseminated. As a result, employees experience uneasiness, stress, fear, or even psychological trauma (Lin & Wei, 2006). During periods of uncertainty and organizational stress, employees seek more information. Managers often cannot meet this need and fall silent, fearing that they may mislead or that the information may be erroneous (Lotz & Donald, 2006). Consequently, stress is placed on the manager by the employees who want information and by the organization which either does not supply or does not permit the sharing of information about the M&A.

Delay of Information

Uncertainty may be reduced by the introduction of frequent and consistent communication of restructuring-related information (Lotz & Donald, 2006). Frequent

communication in which realistic information is presented may dispel rumors and misperceptions, thereby reducing stress.

Subordinate Inquiries

Strategies that include engaging employees during the restructuring process are essential to restructuring success. “Failure to address the concerns of employees by regarding them as trusted allies and giving them timely information encourages harmful speculation which is a direct risk to the reputation of the company” (Emerald Group, 2005, p. 10).

Rumors

M&As, restructurings, or rumors about them create an aura of uncertainty in the workplace and a great deal of stress for employees at all levels of a company (Messmer, 1997). Employees should seek reliable, pertinent information about the restructuring and dismiss the rumors. Managers often find themselves with the responsibility of rooting out misrepresentations, misunderstandings, distortions, and rumors (Clampitt & Williams, 2007). Since the stress caused by restructuring often distorts communication and employees are most likely to hear and believe the most pessimistic information regardless of the source, formal and informal channels of communication should be used to manage the rumors and negative perceptions (Lotz & Donald, 2006).

Managers who participate in restructuring decision-making or have knowledge of the process may have different stress outcomes. Lacking knowledge of the facts that were considered, the alternatives that were debated, and the obstacles that were overcome, subordinates who were uninvolved may be less prepared psychologically to understand and moderate restructuring changes (Clampitt & Williams, 2007).

Outcomes of Workplace Stress

The negative consequences of stress are well documented (European Agency for Safety and Health at Work, 2000). Employees have different thresholds for responses to stress. In the drive for competitive advantage, restructuring organizations are striving to maximize productivity by doing more with fewer resources, elevating job insecurity, and increasing work overload. Job insecurity, for example, has been linked to anxiety, depression, sleep problems, burnout, and heart disease (Glenn, 2005). Stress may affect a person's health (headaches and ulcers), cognition (forgetfulness and the inability to make decisions), and behavior (drug and alcohol use) (Gavin & Dileepan, 2002). Overall, nearly one-third of employees feel under pressure at work, and stress is believed to be at the root of one-half of all absenteeism cases (O'Connell, 2005). According to Antai-Otong (2001), people are more likely to be harmed by stress if they tend to react emotionally to situations and are highly competitive and pressured, such as the so-called type A personality.

Stress can also have a costly impact on organizations as well as people. Cartwright and Cooper (1995) stated, "The human and financial cost of occupational stress to business and industry is increasingly being recognized" (p. 37). Organizations must face the issue or suffer the consequences most often in levels of production and money. If stress-related issues are not reduced, organizations may lose money due to a variety of outcomes: absenteeism, employee assistance programs, drug plans, workers' compensation claims, and lawsuits (Brillhart, 2004).

Lack of information regarding their situation during a time of major organizational change often leaves employees feeling powerless (Gilmore, 1994). The

outcome is stress, a dynamic process that may result in a feeling of powerlessness. Downsizing, frequently a byproduct of the restructuring process, may create major personal challenges including grieving for coworkers, anxiety about present security, increased workload, demands for new training, coping with new colleagues, major value shifts, and, in some instances, the need to create a new identity in the workplace (Amundson, Borgen, Jordan, & Erlebach, 2004). Employees tend to focus away from management and toward themselves in such situations. They are likely to strengthen their group memberships and examine closely how management treats them in order to secure evidence that they still are considered valuable members of the group (Clay-Warner, Hedtvedt, & Roman, 2005).

The uncertainty of the restructuring from M&As, downsizing, and outsourcing is potentially more stressful than any actual changes. Uncertainty in the face of constant change has resulted in a downturn in employee morale, commitment, and trust, and it has weakened the psychological contract between employer and employee (Poole, 2000). Anticipation of change in routine or work dynamics can increase stress levels in the workplace. Employees fear that following restructuring, they will lose control of their work situation. Whether they like their current job or not, at least employees know what rules to play by, how to get things done, and how to maximize rewards (Marks, 1999).

It is psychologically important for the merged organization to allow for the subgroup identities in order to maintain a certain level of distinctiveness or to be maintained in other ways in the new changed organization to ensure a sense of continuity (Van Knippenberg, Van Knippenberg, Monden, & de Lima, 2002). Strong identity translates into self-esteem and value that tend to counteract the outcomes of stress. Hogg

and Terry (2000) contended, “To reduce self-conceptual uncertainty, employees may resist change and may polarize and consolidate interorganizational attitudes around narrowly prescriptive norms and fierce premerger organizational identification” (p. 134). In summary, outcomes of stress may negatively affect the organization or job environment as well as the physical well-being of the individual leading to decreased production and increased absenteeism.

Moderators of Stress

Workplace stress outcomes are generally mediated by communication factors as well as organizational and social support (Yost, 2002). Organizations should not become preoccupied with the outcome of the stress process, but should focus more on the causal factors and consider steps to eliminate or reduce workplace stressors (Cooper & Cartwright, 1994). Under United Kingdom law, for example, employers are now required to recognize stress in the workplace and record it when it occurs as part of their *duty of care* to protect the health, safety, and welfare of all employees (Peplow, 2005).

The type of action required to reduce or eliminate workplace stressors varies according to the kinds of stressors operating, the level of coping skills of those involved, and the culture of the organization (Cooper & Cartwright, 1994). Clearly, however, organizations can reduce uncertainty by the introduction of frequent and consistent communication of restructuring-related information (Cartwright & Cooper, 1993). Two-way communication, the foundation of participative management, encourages a feeling of involvement and helps deter stress. For example, Schweiger and DeNisi (1991) found that providing employees with a series of realistic communications via telephone hotlines, weekly meetings, and newsletters about an impending merger reduced the

dysfunctional outcomes associated with an organizational change. This finding demonstrates that employers need to be more flexible to meet their employees' needs, although realistic, early, and frequent communication is essential for all employees during restructuring. In addition, the implementation strategy and leadership style may need to vary by employee group, depending on specific employee needs and concerns (Napier et al., 1989).

Dealing with stress is a personal issue both in the type of stress and the level of stress (Mueller, 2005). Personal moderators, such as an individual's confidence in his or her ability to find new employment, can change the effects of the antecedents and alter the stress reaction. Additionally, emotional stability is a key factor in an adaptive workforce (Pulakos et al., 2002).

Support and feedback from both managers and work colleagues during periods of change and restructuring can reduce stress (Swanson & Power, 2001). In turn, employees need to be adaptable and tolerant of uncertainty to operate effectively in today's changing and varied workplace (Pulakos et al., 2000). Being tolerant in times of uncertainty and maintaining a positive disposition, manifested in characteristics such as well-being, confidence, energy, gregariousness, and affiliation, are among the most important variables in terms of their relationship to coping with change (Judge et al., 1999).

Leadership and Stress Management

Anticipating the amount of stress caused by M&As in the pharmaceutical industry, managers should become more flexible and adopt more participative management styles to moderate stress. In addition, the inclusion of every level of organizational membership in the planning and implementation of change processes is

essential to today's organizations for leadership and identity (Yost, 2002). Managers influence employee attitudes during restructuring and mitigate stress by providing employees with frequent, honest, and relevant information; handling employees fairly; and answering questions and concerns the employees might have to the fullest extent possible (Schweiger & DeNisi, 1991). In addition, managers should attempt to reduce perceptions of politics and try to increase cooperation among organizational employees (Harris, James, & Boonthanom, 2005).

The influence managers have on employees can allay concerns and instill employee confidence. Managers who remain calm under pressure, handle frustration well, and do not over-react serve as a calming influence to mitigate stress (Pulakos et al., 2000). Referent power, transformational leadership, and consideration, all strongly based on the leader's interpersonal competence, appear to have the strongest relationship with merger satisfaction and stress reduction (Covin et al., 1997).

Managers should promote self-esteem and provide meaning for employees. A focus on employee needs and relationships will help ensure restructuring success (Mills & MacKenzie, 2005). Managers need patience to contend with people who are anxious; communication skills to convey intentions, listen to issues, and win people over; and diplomatic skills to promote teamwork (Marks, 1997). A balance of strong leadership and genuine concern for employees is critical. Management must help employees feel comfortable and important while simultaneously providing clear direction so that misunderstanding can be minimized (Appelbaum, Gandell, Yortis, Proper, & Jobin, 2000). By managing employee needs for compassion and information carefully, stress

can be channeled into productive work and favorable restructuring outcomes (Mirvis & Marks, 1992).

Stress Within the Organization

Organizations are “social structures created by individuals to support the collaborative pursuit of specified goals” (Scott, 2003, p. 11). Employees may resist restructuring-induced change if their identity, via distinctive cognitive alignments and emotional attachments, is disrupted (Millward & Kyriakidou, 2004). Alternatively, a perceived opportunity for employees to improve their social identity and individual career development as an outcome of restructuring can create positive reactions (Terry, Callan, & Sartori, 1996). To ensure success, organizational leadership must focus on people, relationships, and sensitivity. Clear emotional connections and empathy help build solid personal relationships and an environment of trust, crucial elements for successful restructuring.

Leadership is important. Leaders must exemplify behavior and help their constituents handle the stress of change and uncertainty. A central theme falls in line with what Taylor advocated almost 100 years ago as a part of the scientific management movement. Kouzes and Posner (2002) described it as “accepting responsibility for the quality of the lives of their constituents” (p. 398). Even in the most difficult times of crisis, leaders must keep hope alive, continually showing enthusiasm and a genuine belief in the ability of others. Transformational leaders maintain optimism, strengthen the will of their constituents, and help create an environment in which both the organization and the employees can be successful (Rowlett, 2005).

Transformational leaders shape the way organizations and employees respond to stress. Managers have the dual responsibility to the organization and their subordinates. During stressful times of restructuring, their commitment to the success of the transition and their support for employees can not be mutually exclusive. Managers must establish equilibrium, balancing the needs of the organization with employee needs. To be successful, leaders must match their decisions and actions, relational style, and behaviors to the type of restructuring they are managing (Lind & Stevens, 2004). This involves listening to and alleviating employee concerns before they develop into stress antecedents. It requires a special leadership attribute that is the most important source of resistance to stress. Termed *psychological hardiness* (Kouzes & Posner, 2002), it is the ability to experience “commitment rather than alienation, control rather than powerlessness, and challenge rather than threat” (p. 222). Fostering an environment where this becomes the predominant culture is the primary leadership challenge and a key prerequisite for successful restructuring.

Manager and Employee Stress

Workplace stress is a silent epidemic in many organizations that impairs the ability of many employees to work effectively (Mendoza, 2005). Stress can affect individuals in many different ways and can negatively impact upon the performance of an organization to the detriment of its staff and, as a result, its end product or service (Spiers, 2003). Swanson and Power (2001) claimed that “studies of occupational stress that treat organizations as homogeneous entities may be missing important individual, group and situational differences” (p. 175). In response to large-scale organizational change, group differences in sources and effects of stress are prevalent, and the group

context of the situation should be recognized and explored by managers in change situations (Panchal & Cartwright, 2001).

Current findings show that restructuring success is increasingly being attributed to human factors, and the role of managers is critical (Covin et al., 1997). However, it may be difficult for managers to assess how an employee is coping at work. Management, typically proficient at numbers and operations, may not be adept at managing change and must identify key people or groups, understand their motivations, and develop an action plan to address those concerns in order to keep them functioning well (Bangsberg, 1998). Managers who communicate frequently with credibility and empathy can reduce the stress of uncertainty and maximize the potential for success. They need to create a vision that employees can feel compelled towards accepting.

According to Mills and MacKenzie (2005), stress is not about demand and not being able to cope; it is all about reward and meaning. In merger situations, for example, managers must help employees adopt the new system, develop a sense of purpose, and share the new values (Appelbaum, Gandell, Shapiro, Belisle, & Hoeven, 2000). To alleviate stress, managers must make employees feel needed and appreciated.

Differences in the stress reaction may be attributable to the variety of job levels in the organization. The primary concern of employees is what the restructuring will mean to their job (Howarth, 2003; KPMG, 2000). Lower, non-management employees may lack organizational commitment and may tend to focus on their own personal needs since they do not have responsibility for subordinates. According to Curt Coffman, an employee consultant with the Gallup Organization, "Employees are asking not what's

going to happen to the company, they are asking, ‘What's going to happen to me?’”
(Joyce, 2005, p. F06).

Under dynamic situations of uncertainty in the organization, primary needs may become the main concerns for non-managers. According to Benson and Dundis (2003), Maslow’s hierarchy of human needs can be directly applied to organizational settings and includes “the need for security and freedom from stress, social belongingness, self-esteem, self-actualization, altered work/social environments, and new opportunities for learning and self-definition” (p. 315). Feelings of helplessness, lack of situational control, and poor self-confidence can lead to poor morale and low organizational commitment. Michie (2002) also noted that stress management approaches that concentrate on changing the individual without changing the sources of stress are of limited effectiveness, and the primary aim for the individual should be to develop people skills and confidence to change his or her situation, not to adapt to and accept a stressful situation.

Managers, for example, may suffer from a completely different stress reaction than their subordinates. Overworked managers may lose connection with the workers and no longer have the time to acknowledge their employees in positive ways (“Tackling Workplace Stress,” 2005). Obligation to organizational goals, a closer alignment to the organization, and a stronger overall commitment may drive specific stress antecedents and outcomes. Manager stress may be further derived from having the final say on the bottom line continually without recourse to third-party support (O’Connell, 2005). In addition, managers carry the dual obligation to the organization and their employees. Those managers with confidence in their ability to secure other employment positions

may not feel the same degree of personal stress nor share the same concerns for basic needs as those they supervise. Organizational concerns may take priority and determine the behavior of managers.

Coping with Stress Caused by Change in the Workplace

Coping with change in the workplace is becoming increasingly important for all employees and is dependent upon both personal abilities and career outcomes. *Coping* is defined as the constantly changing behavioral and cognitive efforts to manage the internal and external demands of the limited resource, high stress environment (Fugate et al., 2002). It establishes a perceived controllability over the situation. Personal resilience and risk tolerance are two components of coping. According to Wanberg and Banas (2000), *personal resilience* (a composite of self-esteem, optimism and perceived control) is related to higher levels of change acceptance. *Risk tolerance* among managers (a tolerance for ambiguity, openness to experience, low risk aversion), and the ability to cope with organizational change are related to extrinsic (salary, job level, plateauing, job performance) and intrinsic (organizational commitment, job satisfaction) career outcomes (Judge et al., 1999).

While most literature on work-related stress focuses on the individual, some limited attention has been paid to preventive stress management at the organizational level (Quick, Quick, Nelson, & Hurrell, 1997). Preventive stress management is “an organizational philosophy and set of principles that employ specific methods for promoting individual and organizational health while preventing individual and organizational distress” (p. 149). Five principles set the foundation for preventive stress management: (1) Individual and organizational health are interdependent, (2) Leaders are

responsible for individual and organizational health, (3) Individual and organizational distress are unavoidable, (4) Each individual and/or organization react(s) uniquely to stress, and (5) Organizations are always changing and dynamic (Quick et al., 1997, pp. 150-153). Coping strategies must therefore be proactive and individual.

The M&As and restructurings of the workplace and the uncertainty they provide have led to a new form of coping called “presenteeism” (Lathrop, 2006). This phenomenon is the appearance of overwork and the feelings of job insecurity brought about by major organizational change. It also refers to people who go to work even though they are sick or injured because they fear losing their jobs. Presenteeism is a reflection of a stressful workplace which can be prevented by providing guidelines and rules for the amount of time expected at work and for sick-time policies (Lathrop, 2006).

Managers encounter multiple roles during organizational restructurings. The leadership dimension becomes critical as managers play a dual role, bridging their responsibility to the organization and their nurturing of their constituents. Mills and MacKenzie (2005) commented that “the relationship between an employee and their manager is the single biggest predictor of satisfaction, length of working life, age-work ability and productivity” (¶ 7). The organization therefore relies upon its human capital assets to achieve its goals.

Within these multiple roles, managers must provide information to alleviate employee concerns and uncertainty. In reality, however, information about mergers can not always be provided for legal reasons, and lack of information may lead to confusion, distrust, and frustration among employees. Employees learn what they can about the

restructuring from formal (e.g., meetings, memos) and informal (e.g., grapevine) sources and gather informally to deal with their stress and attitudes (Napier et al., 1989).

Normally, the main concerns for the manager that lead to stress in the workplace are workloads, working conditions, and relationships at work (Manshor, Fontaine, & Choy, 2003). Restructuring places additional stress on managers, as they may be distracted by worries about their own positions and consumed by the extra demands placed on them by the merger (Cartwright & Cooper, 1994). Some managers may even tend to withdraw and isolate themselves from their employees to avoid questions they are unable to answer, further magnifying the stress on themselves and their direct reports (Marks, 1999). To combat this problem, organizations can optimize their potential for success by selecting leaders who have key leadership attributes. In considering managers for change-oriented assignments, organizations should consider managers who are effective communicators, have a positive self-concept, and are risk tolerant (Judge et al., 1999).

Recognizing and addressing the human issues related to the stress caused by major organizational change is one way in which managers and organizations can reduce the adverse individual and organizational outcomes associated with this stress (Cartwright & Cooper, 1993). According to Marc Hommel, a partner at Pricewaterhouse Coopers (PWC) responsible for the HR aspects of M&As, “Many key decision makers find dealing with the people issues too boring, difficult or time consuming . . . and less important than dealing with negotiations over the price and financial and legal structuring of the deal” (Arkin, 2003, p. 35). However, since stress may not be apparent and employees may be reluctant to express their anxieties under the pressures for

adaptation and restructuring success, this may be a significant challenge for leaders.

Management must acknowledge the vulnerabilities of employees and explain the process that will be put in place and the timetable for change (Howarth, 2003).

Communication is repeated in the literature as critical to coping with workplace stress during periods of major organizational change such as M&As and restructurings. Specifically, top-down communication increases stress, while support from peers, supervisors, and family mitigates it (Moore & Mellor, 2003). According to Moses (2000), the most critical aspect is to communicate openly and honestly about what is going on in the company. This prevents the stress brought about by not knowing the future and inhibits gossip and speculation which feed fear. In addition, Moses (2000) also suggested that assisting employees in taking charge of their own careers empowers them, again avoiding stress and increasing coping abilities.

Conclusion

This review of the literature suggests that elements of restructuring relate to stress which, in turn, leads to health problems in managers. These elements of restructuring become the independent variables for the present study: (a) job security, (b) separation anxiety, (c) compensation, (d) career progression, (e) lack of communication, (f) delay of information, (g) subordinate inquiries, and (h) rumors. The presence of these elements of restructuring can be ascertained. Stress among managers, then, is the first dependent variable. It is measured through the use of a standardized instrument. The second dependent variable, physical and mental health problems, is also measured by means of a standardized instrument. The relationship of each independent variable to the dependent

variables and the predictive value of the independent variables are of concern in the present study.

Summary

The literature reviewed in this chapter focused on the nature of major organizational change, stress in the workplace, leadership and stress, and coping strategies. During periods of major organizational change such as M&As and restructurings, the primary cause of stress is uncertainty—uncertainty about the future of the individual and the organization. Managers serve a dual role in that they are responsible to the organization and to those they supervise. When they are uninformed about the nature of the change and its effects, they are unable to communicate effectively with the people they supervise. This causes stress for managers.

Coping strategies can be individual or organizational. Some people cope by appearing to work harder or coming to work even when they are ill (presenteeism). Others find support through peers, supervisors, and family. Stress can be prevented through honest and open communication.

In the next chapter, the methodology for this study is presented. The type of study, the research questions, and the procedures are explained along with a rationale for the methodology. In addition, the context is set for the research on managerial stress during a merger in the global pharmaceutical industry.

CHAPTER 3: METHOD

The primary focus of this study was to test hypotheses regarding elements of the restructuring process that appear to cause stress and health problems among managers in the global pharmaceutical industry. The method of exploration used in this study, a quantitative correlation, is explained in this chapter. This method of exploration employs survey data collection using a questionnaire on elements of the restructuring process, one instrument that measures stress, and another tool that measures physical and mental health.

The proposed research method is appropriate for the study because numerical forms of data are collected and analyzed. The correlation analysis statistical procedure examines combined relationships of multiple independent variables with two dependent variables (Creswell, 2002). In this quantitative approach, regression coefficients are calculated for each independent variable, the combined influence of all variables is assessed, and a correlation matrix is prepared which displays the overall amount of variance along with the amount of contribution of each variable to the variance (Creswell, 2002).

The target population for the present study was managers who are employed in global pharmaceutical organizations that have undergone M&A or restructuring within the past six months. The 130 managers who participated in the present study were recruited from eight global pharmaceutical companies by email using a chain sampling method—a technique which helps to assure variety and diversity among participants. The purpose of the study was to test hypotheses concerning the relationships between elements of restructuring and the stress and health problems that may be caused by these

elements. The independent variables, restructuring elements that cause stress and health problems, were measured using a questionnaire, the Restructuring Elements Analysis Tool (REAT), which queries the participant across the following dimensions: (a) job security, (b) separation anxiety, (c) compensation, (d) career progression, (e) lack of communication, (f) delay of information, (g) subordinate inquiries, and (h) rumors. The dependent variables are level of stress and physical and mental health.

The selection of the global pharmaceutical industry for the study fulfills the requirements of several sampling strategies that are used in quantitative research. First, it represents a key characteristic—an industry in which M&As and restructurings are currently leading to stress and health problems among employees. Similarly, it reflects the major literature-based assumptions required for the study's conceptual rationale: (a) M&As and restructurings lead to stress among managers and employees and (b) some cope better than others. Finally, it is an emergent, opportunistic strategy in that it is occurring right now with a convenient, available population for study (Gall et al., 1999).

Research Method and Design

This study was quantitative. The purpose was to test hypotheses concerning the elements of restructuring affecting the stress and health within the target population that may be caused by the elements of restructuring. Correlation studies attempt to find or clarify relationships among variables by using the correlation coefficient. The correlation coefficient expresses “in mathematical terms the degree of relationship between any two variables” (Borg & Gall, 1983, p. 573). Perfect positive correlation is 1.00, while perfectly negative correlation is -1.00. Using correlation analysis, this study sought to draw inferences from eight independent variables with respect to a population of

workforce managers based on measurement data collected from a sample of global pharmaceutical industry managers. The hypotheses were based on the multiple restructuring elements as indicated by the REAT questionnaire and their influences on stress as identified by the Pressure Management Indicator (PMI; Williams & Cooper, 1996) and on physical and/or mental health as indicated by the SF-36v2[®] (Ware & Gandek, 1994), a short form physical and mental health survey. The following 20 hypotheses were tested:

H₁: There is no relationship between PMI score and any of the following: job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors.

H₂: Job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors will predict PMI score.

H₃: The relationship between job security and PMI score will be positive.

H₄: The relationship between separation anxiety and PMI score will be positive.

H₅: The relationship between compensation and PMI score will be positive.

H₆: The relationship between career progression and PMI score will be positive.

H₇: The relationship between lack of communication and PMI score will be positive.

H₈: The relationship between delay of information and PMI score will be positive.

H₉: The relationship between subordinate inquiries and PMI score will be positive.

H₁₀: The relationship between rumors and PMI score will be positive.

H₁₁: There is no relationship between SF-36v2[®] score and any of the following: job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors.

H₁₂: A relationship exists between SF-36v2[®] score and all of the following: job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors.

H₁₃: The relationship between job security and SF-36v2[®] score will be positive.

H₁₄: The relationship between separation anxiety and SF-36v2[®] score will be positive.

H₁₅: The relationship between compensation and SF-36v2[®] score will be positive.

H₁₆: The relationship between career progression and SF-36v2[®] score will be positive.

H₁₇: The relationship between lack of communication and SF-36v2[®] score will be positive.

H₁₈: The relationship between delay of information and SF-36v2[®] score will be positive.

H₁₉: The relationship between subordinate inquiries and SF-36v2[®] score will be positive.

H₂₀: The relationship between rumors and SF-36v2[®] score will be positive.

Appropriateness of the Research Design

The goal of this study was to try to understand how middle managers and those they supervise cope with the stress introduced into the work environment by M&As

and/or restructuring. This may lead to a new reality of the elements of M&As and restructurings and their effects on manager stress that may result in health problems.

The European Agency for Safety and Health at Work (2000) in their meta-analysis of research on workplace stress stated repeatedly that self-report of stress is not of sufficiently high quality for analysis. They suggested that “eliciting and modeling the knowledge and perceptions of employees is central to the assessment and measurement process” (p. 13). The primary reason is that employees in stressful situations may suffer from negative affectivity, which Watson and Clark (1984) defined as “a general personality trait reflecting individual differences in negative emotionality and self-concept” (as cited in EASHW, 2000, p. 13). In such cases where negative affectivity is present, employees may bias their perception of their work environment, leading them to appraise their own well-being incorrectly. When self-reports of stress and well-being are used as variables, then, it leads to inaccuracy in reporting results.

A correlation study design was chosen as the appropriate design for this study because the literature search identified multiple factors and potentially complex relationships between variables that could explain the outcome. Qualitative designs explore and comprehend whereas quantitative designs describe, test and explain (Creswell, 2002). This study attempted to test theories regarding the relationship between these variables. According to Creswell (2002), a predictor research design identifies variables that will positively predict an outcome or criterion. The independent (predictor) variables in this study, elements of restructuring, were examined statistically to determine whether they predict the dependent (criterion) variables, stress and health problems. The quantitative design identifies the strengths of relationships, determined by the

associations between each predictor and the criterion variables as determined by the correlation coefficient statistic and correlation analysis to assess combined effects of the multiple predictor variables.

Population, Sampling, Data Collection Procedures, and Rationale

Population

A minimum of 120 participants were sought for this study. In correlation study research, the sample size (N) is based on the number of predictor variables according to the formula $50 + 8p$, where p equals the number of predictor variables with a fixed alpha equal to .05 (Dunlap, Xin, & Myers, 2004). In this study, a minimum of 120 participants was sought, and eight predictor variables were planned; therefore, the sample size of 130 that was eventually obtained exceeds $50 + 8p$ ($50 + 8 \times 8 = 114$), indicating a “medium-sized” relationship.

Participants were a convenience sample of managers from global pharmaceutical industry organizations which have undergone restructurings in the past six months. All participants have experienced the restructurings firsthand. In order to test the independent variables to be correlated—(a) job security, (b) separation anxiety, (c) compensation, (d) career progression, (e) lack of communication, (f) delay of information, (g) subordinate inquiries, and (h) rumors—questions on the REAT were not divulged until the participant agreed to participate in the study.

Sampling

Participants from the management ranks of the global pharmaceutical industry were recruited, asked to sign a letter of informed consent, and surveyed using electronic questionnaires distributed by email. The researcher has more than 30 years experience as

a manager in the global pharmaceutical industry and has many contacts within the industry; therefore, gaining assistance for this research was not problematic. Participants were a convenience sample of industry managers with direct experience in organizations which have undergone restructurings in the past six months. A purposeful sampling technique known as snowball or chain sampling was used. In this emergent sampling method, participants who were studied identified additional participants for study (Gall et al., 1999). This method of recruitment assured a variety of backgrounds, experience, and overall diversity among participants.

Participants were informed of the nature of the study and the fact that their assistance may help other managers cope with the stress resulting from M&As and organizational restructuring. The letter of informed consent (see Appendix A) indicates that participation is voluntary, no remuneration was offered for participation, and participants could withdraw from the study at any time without penalty. Confidentiality was maintained by coding the informed consent documents and the instruments, and only the researcher has the coding list and original documents. The documents have been retained in a locked file cabinet in the researcher's home. Additionally, all data are reported in the aggregate, and no identifying information has been reported for any individual participant. The participants were informed of these means of assuring confidentiality.

Data Collection

The present study, a quantitative regression focusing on a small group within a large industry, used electronic surveys as the primary means of collecting data. Three surveys—REAT, PMI, and SF36-v2[®]—were used to gather the required data. Emails

were sent to potential survey participants in restructuring situations, who were requested to connect via a link to the SurveyMonkey website. The website was used to administer the surveys, collect the data, and store it. At the conclusion of the survey period, the researcher downloaded the data and analyzed the results using MATLAB® Statistics Toolbox™ 6 (The Mathworks, Inc., 2008).

Triangulation of Data

Triangulation is used primarily by qualitative researchers as a means of providing validity to the information they have gathered. Very simply, it means the use of more than one—usually at least three—forms of data on the same topic (Borg & Gall, 1983; EASHW, 2000; Gall et al., 1999; Rowlett, 2005). According to EASHW (2000), “the principle of triangulation holds that, to be secure, a potential psychosocial or organizational hazard must be identified by cross-reference to at least three different types of evidence” (p. 14). If triangulation is confirmed by the cross-references, the data may be considered reliable.

In evaluating research on stress, EASHW (2000) suggested considering the following in gathering evidence on stress:

1. the objective and subjective antecedents of the person’s experience of stress,
2. their self-report of stress, and
3. any changes in their behavior, physiology or health status (which might be correlated with [1] and/or [2]. (p. 14)

In addition, EASHW (2000) indicated that “there is a good convergence between self-report and supervisor- and subordinate-report” (p. 14). For the present study, the researcher formed hypotheses regarding the elements of restructuring, stress, and health.

To triangulate the data, three instruments were administered to the participants: (1) a researcher-developed questionnaire regarding elements of restructuring (REAT), (2) the Pressure Management Indicator (PMI) as a self-report of stress, and (3) the SF-36v2[®] as an indicator of health.

Instruments

Three instruments were used for the present study: (a) a researcher-developed questionnaire named the Restructuring Elements Analysis Tool (REAT; see Appendix B), (b) the Pressure Management Indicator (PMI; see Appendix C), and (c) the SF-36v2[®] Health Survey (see Appendix D). Each instrument is explained in the following sections.

Restructuring Elements Analysis Tool (REAT)

The REAT is a survey measuring the elements of restructuring in an early stage of development. Job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors have been identified in the literature as key elements affecting employee stress levels during organizational restructuring. Because REAT was developed by the researcher and was used for the first time in this study, efforts were made to ensure the reliability/validity using a pilot study. Instrument validity is critical to the research findings and explains how well the instrument actually measures the intended objective (Creswell, 2002). A face validation technique was used in the pilot study to assess the content of the REAT instrument (Cooper & Schindler, 2003). In the pilot study, the survey was administered to six peer experts for consistency and reliability. The peers subsequently discussed the survey, corroborated the accuracy of their responses, and concluded that REAT participants would likely understand all questions and answer them accurately.

Pressure Management Indicator (PMI)

The PMI measures occupational stress (Williams & Cooper, 1996). Although the European Agency for Safety and Health at Work (2000) does not generally support the use of self-reports such as the PMI, the role of the PMI is to assist in data collection and provide participants an opportunity for self-reflection about stresses caused by the M&A.

The PMI is a 120-item self-report based on a previous instrument, the Occupational Stress Indicator (OSI). Users of the OSI felt the word “stress” in its title suggested that stress in the work environment exists and biased the instrument; therefore, in the redesign, “stress” was changed to “pressure management” (Williams & Cooper, 1998). In revising the PMI, Williams and Cooper believed that the PMI should:

- Be quick to complete and non-threatening
- Achieve a balance between utility and power
- Be able to be used by everyone in an organization
- Be used in different occupational settings
- Work across cultural boundaries
- Identify organization-specific issues and reflect changing demands on workers

The PMI is a useful tool for the present study because it is an indicator of both stress and coping skills. Table 3 depicts the 24 PMI scales and the corresponding categories. PMI scale reliabilities ($N = 4,946$) “met or exceeded the target reliability level” (Williams & Cooper, 1998, p. 314) of $\alpha < .50$ with the exception of Daily Hassles ($\alpha = .64$).

Primary uses of the PMI are to evaluate employees who might leave the company, to study differences in stress in terms of gender and seniority, to differentiate between stable and unstable organizations, and to see if a difference exists between normal stress

Table 3

PMI Categories and Scales

Category	Scales
Outcomes	Job Satisfaction Organization Satisfaction Organizational Security Organizational Commitment State of Mind Resilience Confidence Level Physical Symptoms Energy Levels
Stressors	Workload Relationships Recognition Organizational Climate Personal Responsibility Managerial Role Home-Work Balance Daily Hassles
Moderators	Type A Drive Patience-Impatience Personal Influence Control Problem Focus Life-Work Balance Social Support

levels and illness among psychiatric patients. The PMI has also been used to try to identify specific stressors so that organizations might minimize or eliminate them.

According to Williams and Cooper (1998), “These profiles provide a structure for understanding occupational stress . . . personal profiles also act as a prompt” (p. 317). For

the present study, the PMI was employed to obtain a detailed stress profile for each participant. The PMI is copyrighted and the researcher has obtained appropriate permission via email to use the instrument (see Appendix E).

SF-36v2[®] Health Survey

The SF-36v2[®] (Ware & Gandek, 1994) is a 36-item, self-report, multi-purpose health survey which produces an 8-scale profile of functional health and well-being. It also provides summary scales for physical and mental health measures. The most widely evaluated generic patient assessed health outcome measure, the SF-36, the first version, has been used extensively internationally (Ware, 2005).

The SF-36v2[®], introduced in 1996, corrected deficiencies of the first version. As a result, the SF-36v2[®] is unambiguous, well laid out, and easily administered. The SF-36v2[®] uses a 5-point Likert-type response, and the survey has been re-normed using the new scale. Figure 1 shows the taxonomy of items and concepts on which the SF-36v2[®] is based. It has three levels: (a) items, (b) eight scales of 2-10 items each, and (c) two summary measures that aggregate the scales. Each of the 36 items is used in only one scale. The scales are: (a) Physical Functioning (PF), (b) Role-Physical (RP), (c) Bodily Pain (BP), (d) General Health (GH), (e) Vitality (VT), (f) Social Functioning (SF), (g) Role-Emotional (RE), and (h) Mental Health (MH). The two summary measures are Physical Health and Mental Health.

Reliability. Two methods have been used to test the reliability of the SF-36v2[®]: internal consistency and test-retest. Reliability statistics have exceeded 0.70, the recommended level for group comparisons, and indicators for the summary scales are generally above 0.90 (Ware, 2005). Slight declines in reliability have been shown with

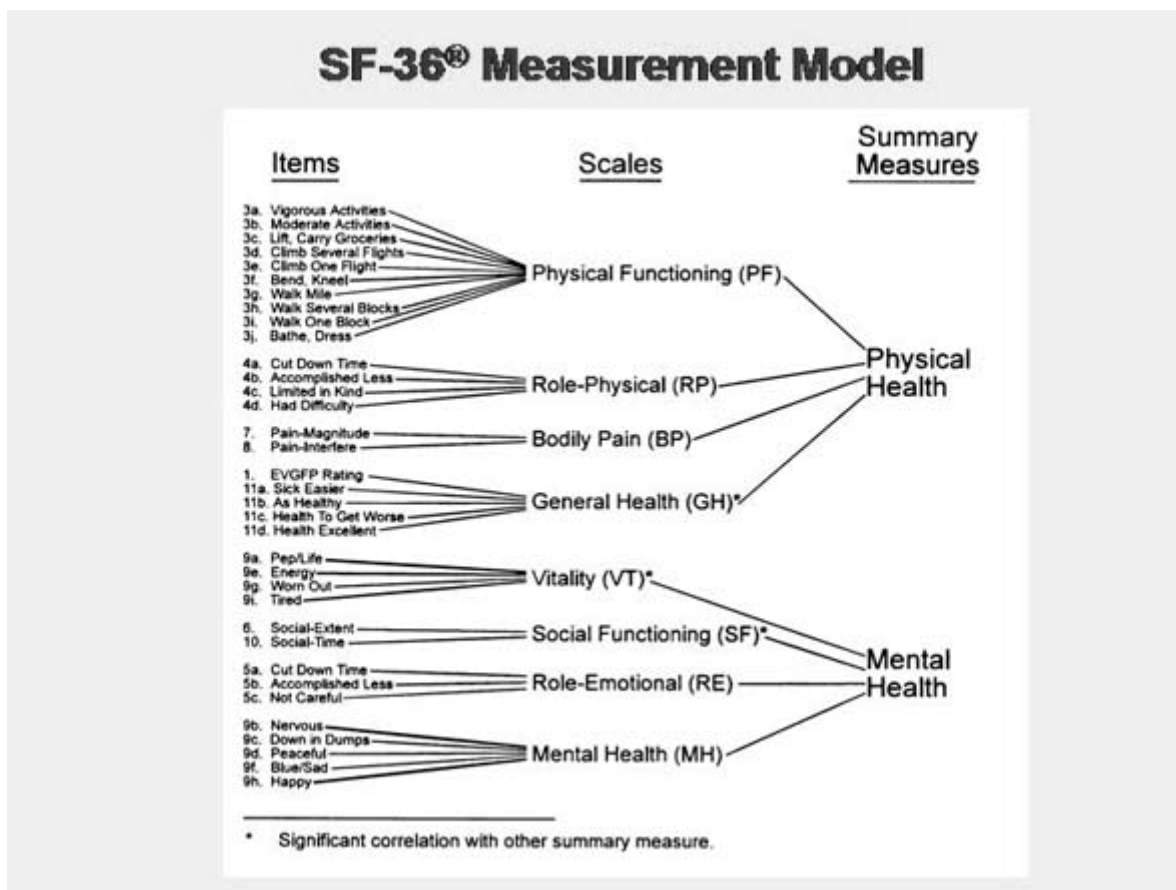


Figure 1. SF-36[®] measurement model (Ware, 2005).

disadvantaged groups.

Validity. Validity indicators have supported, for the most part, the intended meaning of high and low scores on the SF-36v2[®]. Content validity comparisons with other health surveys demonstrated that the SF-36v2[®] includes eight of the most frequently measured health concepts (Ware, 2005). In addition, “the MH, RE, and SF scales and the MCS summary measure have been shown to be the most valid of the SF-36 scales as mental health measures,” while the “PF, RP, and BP scales and the PCS summary have been shown to be the most valid SF-36 scales for measuring physical health” (Ware, 2005, p. 9). In addition, the MH scale has proven useful in screening for

psychiatric disorders (Ware, 2005). Germane to the present study, predictive studies of validity have linked the SF-36 and summary measures with use of health care services, the clinical course of depression, loss of job within one year, and 180-day and 5-year survival following trauma or illness (Ware, 2005).

Data Analysis

In the present study, scores from each instrument were first determined independently. The REAT independent variables included: (a) job security, (b) separation anxiety, (c) compensation, (d) career progression, (e) lack of communication, (f) delay of information, (g) subordinate inquiries, and (h) rumors. The mean scores each independent variable were calculated from their numerical 7-point Likert-type responses. The dependent variables are level of stress and health; the stress factors on the PMI and the health measures on the SF-36v2[®]. The PMI and SF-36v2[®] scores were calculated using published instructions from the licensed instrument providers.

Next, scores from the independent (predictor) variables in this study, elements of restructuring, were correlated and examined statistically to determine whether they predict the dependent (criterion) variables—stress and health problems. Data were entered into a computer using the statistical software package, MATLAB[®] Statistics Toolbox™ 6 (The Mathworks, Inc., 2008), and the effects of the independent variables on the dependent variables were calculated through MATLAB[®]. The formula used in the correlation analysis is presented in chapter 4. Statistically significant correlations, $p < 0.05$ with $r \leq -0.5$ or $r \geq 0.5$, with 0.5 or above deemed positively correlated; and -0.5 or below, negatively correlated.

Finally, a factor analysis was performed using the MATLAB[®] program on the REAT instrument correlation results. The factor analysis is used to determine whether any factors, linear combinations of the original variables which form new axes that can be used to describe the original data, could be derived. This statistical analysis is based on the original correlation between the variables and results in a smaller number of derived or unobserved variables called factors (Punch, 2005). A further description of the data analysis and results are presented in chapter 4.

Organization and Clarity

The purpose of the study was to test hypotheses concerning the stress and coping skills of the target population that resulted from the M&A or restructuring of the company. It is a study of prediction, answering the question, “Do elements of restructuring lead to stress and health problems among managers in the global pharmaceutical industry?” This is important given the frequency of M&As and restructuring in that industry.

To determine the predictive value of elements of restructuring, eight independent—predictor—variables were identified from the literature. These were then correlated to the criterion variables—stress and health—utilizing correlation analysis.

According to the National Center for Education Statistics (2007):

When it is appropriate, the use of multiple regression and multivariate analysis techniques should be considered to examine relationships between a dependent variable (e.g., test score) and a set of independent variables (e.g., race, sex, and family background). Such techniques can provide an integrated approach to testing many simultaneous relationships. (¶ 8)

Correlation analysis requires at least two predictor and one criterion variable (Borg & Gall, 1983). The key is to identify the presence of the predictor variables in the participant's environment and then to relate each predictor variable to the amount of stress and the number of health problems experienced by the participant.

In looking for a relationship—not an explanation—between elements of restructuring and stress and health problems among managers, the study design is correlational, an appropriate design for multiple regression analysis (Borg & Gall, 1983). A high degree of correlation of a predictor and a criterion variable suggests that the predictor variable is a good predictor of the criterion. In this case, an element of restructuring would be a good predictor of stress and health problems. The predictors can then be ranked in terms of their quality in predicting stress and health problems. In addition, predictors can be combined in terms of their ability to predict stress and health problems. This design and analysis should achieve the purpose of this study.

Summary

In this chapter, the methodology for the study was presented. This is a quantitative correlation study which investigated the relationship of restructuring elements (as measured by the REAT) to stress (as measured by the PMI) and health problems as measured by the SF-36v2[®]. Demographic information was also collected. Data were entered into a computer, and correlation coefficients were calculated using *MATLAB[®] Statistics Toolbox[™] 6* software (The Mathworks, Inc., 2008).

The target population for the present study is managers who are employed by global pharmaceutical organizations that have undergone M&A or restructuring within the past six months. The 130 managers who participated in the present study were

selected from eight global pharmaceutical companies. The purpose of the study was to test hypotheses concerning the stress and health of the target population that resulted from the M&A or restructuring of the company. The independent variables, restructuring elements causing stress and health problems, were measured using a questionnaire, the researcher-designed Restructuring Elements Analysis Tool (REAT), which queries the participant across several dimensions of restructuring elements including: (a) job security, (b) separation anxiety, (c) compensation, (d) career progression, (e) lack of communication, (f) delay of information, (g) subordinate inquiries, and (h) rumors. The dependent variables are level of stress and number of health problems.

Specifically, the following questions guided this research:

1. What is the relationship between elements of organizational restructuring (as measured by the Restructuring Elements Analysis Tool (REAT) and manager stress in the workplace as measured by the Pressure Management Indicator (PMI; Williams & Cooper, 1996)?
2. Is there a correlation between organizational restructuring elements causing stress on the manager as measured by the Restructuring Elements Analysis Tool (REAT) and health problems as measured by the SF-36v2[®] (Ware, 2005)?
3. Does a relationship exist between the independent variables (job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors) and the dependent variable (level of stress)?

4. Does a relationship exist between restructuring elements and the physical and/or mental health of managers?

The answers to these questions may enable managers to identify and address elements which cause stress during organizational restructuring. Strategies for coping are identified during the analysis of the data.

CHAPTER 4: RESULTS

The purpose of this chapter is to report the results of the study, *The Relationship Between the Elements of Organizational Restructuring and Manager Stress: A Pharmaceutical Industry Study*. The previous chapters introduced the study, presented a review of the literature as the basis for the study, and detailed the methodology of the research. In this chapter, the following information is presented: (a) purpose of the study, (b) research questions, (c) hypotheses, (d) variables, (e) pilot study, (f) review of data collection procedures, (g) data analysis, and (h) findings. This chapter concludes with a summary of the findings, and the conclusions drawn from the results and recommendations for future research are presented in chapter 5.

Purpose of the Study

The purpose of the study was to test hypotheses concerning the relationships between elements of M&As and/or organizational restructuring and the stress and health problems of managers that may have been caused by these elements. Related to its purpose, this study was designed to expand on knowledge of relationships between elements of restructuring and managers' stress and health as measured by three instruments designed for this purpose--(a) a researcher-developed questionnaire named the Restructuring Elements Analysis Tool (REAT; see Appendix B), (b) the Pressure Management Indicator (PMI; see Appendix C), and (c) the SF-36v2[®] Health Survey (see Appendix D). The findings of this research may enable managers to identify and predict elements which cause stress and health problems during organizational restructuring, thereby enabling them to mitigate the negative effects of major organizational change.

The target population for the present study was managers in the global pharmaceutical industry.

Research Questions and Hypotheses

The intent of this quantitative study was to answer four research questions and to explore 20 hypotheses. The research questions and the hypotheses related to one another. They are reviewed in the following sections showing the relationship between each research questions and its related hypotheses.

Research Question 1

The first research question asked, “What is the relationship between elements of organizational restructuring as measured by the Restructuring Elements Analysis Tool (REAT) and manager stress in the workplace as measured by the Pressure Management Indicator (PMI; Williams & Cooper, 1996)?” The following hypotheses were proposed to respond to this question:

H₁: There is no relationship between PMI score and any of the following: job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors.

H₂: Job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors will predict PMI score.

H₃: The relationship between job security and PMI score will be positive.

H₄: The relationship between separation anxiety and PMI score will be positive.

H₅: The relationship between compensation and PMI score will be positive.

H₆: The relationship between career progression and PMI score will be positive.

H₇: The relationship between lack of communication and PMI score will be positive.

H₈: The relationship between delay of information and PMI score will be positive.

H₉: The relationship between subordinate inquiries and PMI score will be positive.

H₁₀: The relationship between rumors and PMI score will be positive.

Research Question 2

The second research question asked, “Is restructuring in the organization causing stress on the manager as measured by the REAT and health problems as measured by the SF-36v2[®] (Ware, 2005)?” The following hypotheses were formulated to respond to this question:

H₁₁: There is no relationship between SF-36v2[®] score and any of the following: job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors.

H₁₂: A relationship exists between SF-36v2[®] score and all of the following: job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors.

H₁₃: The relationship between job security and SF-36v2[®] score will be positive.

H₁₄: The relationship between separation anxiety and SF-36v2[®] score will be positive.

H₁₅: The relationship between compensation and SF-36v2[®] score will be positive.

H₁₆: The relationship between career progression and SF-36v2[®] score will be positive.

H₁₇: The relationship between lack of communication and SF-36v2[®] score will be positive.

H₁₈: The relationship between delay of information and SF-36v2[®] score will be positive.

H₁₉: The relationship between subordinate inquiries and SF-36v2[®] score will be positive.

H₂₀: The relationship between rumors and SF-36v2[®] score will be positive.

Research Question 3

The third research question asked, “Does a relationship exist between the independent variables (job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors) and the dependent variable (level of stress)?” This research question sought to identify and triangulate relationships between the independent variables (job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors) as presented in the REAT and the dependent variable (level of stress) as measured by the subscales of the PMI and the SF-36v2[®].

Research Question 4

The fourth research question asked, “Does a relationship exist between restructuring elements and the physical and/or mental health of managers?” This fourth research question sought to identify and triangulate relationships between the REAT restructuring elements and the physical and/or mental health of managers as measured by the subscales of the PMI and the SF-36v2[®].

Data are presented for all four research questions and the 20 hypotheses in this chapter. Discussion of the findings, the conclusion drawn from the findings, and recommendations for future research suggested by the results are presented in Chapter 5.

Variables

The independent variables, the restructuring elements causing stress as identified through the literature, were measured using a researcher-developed questionnaire, the Restructuring Elements Analysis Tool (REAT). The restructuring elements investigated were: (a) job security, (b) separation anxiety, (c) compensation, (d) career progression, (e) lack of communication, (f) delay of information, (g) subordinate inquiries, and (h) rumors. The dependent variables are level of stress as measured by the PMI and physical and/or mental health issues as measured by the SF-36v2[®].

Each instrument used in this study has scales to identify specific elements, characteristics, issues, or factors affecting the individual responding to the questionnaire. Table 4 lists the scales used for all three study instruments. The Pressure Management Indicator (PMI) consists of nine scales, each with a minimum of one subscale (Williams & Cooper, 1996). In Table 4, the scales are shown with subscales indicated for the PMI.

Each scale or subscale has a two-letter abbreviation which was used as an identifier for ease of analysis.

Table 4

REAT, PMI, and SF-36v2[®] Health Survey Scales

REAT	PMI	SF-36v2 [®]
Job Security (JS)	Satisfaction	Physical Functioning (PF)
Separation Anxiety (SA)	Job Satisfaction (JI)	Role-Physical (RP)
Compensation (CM)	Organization Satisfaction (JO)	Bodily Pain (BP)
Career Progression (CP)	Organization	General Health (GH)
Lack of Communication (LC)	Organization Security (OS)	Vitality (VT)
Delay of Information (DI)	Organization Commitment (OC)	Social Functioning (SF)
Subordinate Inquiries (SI)	Mental Wellbeing	Role Emotional (RE)
Rumors (RM)	State of Mind (MA)	Mental Health (MH)
	Resilience (MR)	
	Confidence Level (MW)	
	Physical Wellbeing	
	Physical Symptoms (PA)	
	Energy Level (PE)	
	Sources of Pressure	
	Workload (PW)	
	Relationships (PR)	
	Recognition (PC)	
	Organization Climate (PO)	
	Personal Responsibility (PP)	
	Managerial Role (PM)	
	Home/Work Balance (PH)	
	Daily Hassles (PD)	
	Type A Behavior	
	Drive (TD)	
	Patience/Impatience (TI)	
	Influence/Control	
	Control (LC)	
	Personal Influence (LI)	
	Coping	
	Problem Focus (CO)	
	Life/Work Balance (CD)	
	Support	
	Social Support (SS)	

Pilot Study

A pilot study was conducted to evaluate whether participants had concerns or difficulties with the three web-based surveys. The pilot study evaluated the REAT, a 24-item instrument developed by the investigator specifically for this research. It presents questions related to factors causing restructuring stress. Another goal of the pilot study was to evaluate the functionality of all three web-based surveys in collecting and collating the resulting responses. To this end, six managers in the global pharmaceutical industry were invited to participate in the web-based surveys and verify that their individual responses were accurately recorded following completion.

In order to respond to the goals of the pilot study, the pilot surveys included a field where participants could enter their initials for identification of individual responses. Individual results were then shared with each respective participant. The results of the pilot study were positive and helpful. No major concerns were identified by any of the participants, and all responses were collected accurately. In addition, feedback from all pilot study participants was consistent. They reported that the survey items were clearly understood, easily completed using the internet, and accurately recorded. Revisions to the surveys were not necessary except for some minor typographical corrections. Having met the goal for conducting the pilot study, data from the surveys in the pilot study were not included in the analysis of the data for the larger study.

The face validation afforded by the professionals who participated in the pilot study ensured the REAT was clear and understandable on a consistent basis. Threats to internal validity potentially weaken the ability to draw accurate conclusions due to flaws in procedures or experiences of participants (Creswell, 2002). Participants were selected

from lists of managers acquired from pharmaceutical companies which have undergone recent restructuring and also using chain sampling techniques. These random selection techniques from multiple companies coupled with a relatively short (6 month) duration effectively rule out selection, history, and maturation as internal validity issues. Threats to external validity can impact generalizability and other potential samples during future research (Creswell, 2002). The selection process solely involved organizations in the pharmaceutical industry, and was “blind to racial, social, geographical, age, gender, or personality” (Creswell, p. 327). In addition, the research setting was equal for all participants and there was no attempt to generalize results to past and future, mitigating this potential threat.

Data Collection

Following pilot testing, data collection on a sample of 132 pharmaceutical industry managers who had direct, recent experience with restructuring began. Web-based responses from 130 pharmaceutical industry managers were included in the study and analyzed. Responses from two participants were excluded because they did not fully complete the surveys.

Sample Characteristics

Background information concerning the sample was derived from questions asked about company, job title, number of direct reports, gender, age, and level of education. The 130 participants, all managers or directors, represented eight global pharmaceutical organizations. Primarily middle managers (71.5%), the 130 participants also included 37 (28.5%) senior managers. The sample was comprised of 56 (43.1%) females and 74 (56.9%) males with the number of direct reports ranging from 2 to 24. All

participants had earned at least a Bachelor's degree; 18 (13.8%), a doctoral degree. The survey allowed for recording of age within 10-year ranges. The age range of participants was from 20-29 to 50-59. Table 5 shows the age distribution of participants by 10-year ranges.

Table 5

Age Distribution of Participants by Range

Age	N	%
20-29	5	3.8
30-39	42	32.3
40-49	49	37.7
50-59	34	26.2
Total	130	100.0

Because the topic of the study concerns stress related to recent organizational restructuring, participants were asked the type of organizational restructuring that had occurred in their company within the last six months. As reflected in Table 6, 31 (23.8%) participants had experienced a merger; 33 (25.4%), an acquisition; 66 (50.8%), some other type of organizational restructuring.

Table 6

Type of Restructuring Experienced by Participants

Type	N	%
Merger	31	23.8
Acquisition	33	25.4
Restructuring	66	50.8
Total	130	100.0

Results

Results for each of the three surveys used in this study were compiled using SurveyMonkey, a web-based tool designed specifically for survey administration and data collection. Data were then analyzed through the MATLAB Statistics Toolbox™ 6 software (The Mathworks, Inc., 2008). Each instrument was analyzed independently and then correlated according to the research questions and the hypotheses.

Restructuring Elements Analysis Tool (REAT)

The 24-item Restructuring Elements Analysis Tool (REAT) instrument (see Appendix B) was used in this study to determine degree of presence of the following eight potential stress-causing factors: (a) job security, (b) separation anxiety, (c) compensation, (d) career progression, (e) lack of communication, (f) delay of information, (g) subordinate inquiries, and (h) rumors. Each stress-causing factor was represented by three questions. Respondents answered on a 7-point Likert-type scale where 1 was “Strongly Disagree” and 7 was “Strongly Agree.” A response of 4 indicated

neutrality. The mean scores of the three questions for each factor were calculated from their 7-point Likert-type responses. The mean scores were then examined in relation to one another to determine the highest potential stress-causing factors among these participants. The stressors were then ranked. As shown in Table 7, on a scale of 1 to 7, means ranged from a low of 3.95 (separation anxiety) to a high of 5.49 (delay of information), where 4.0 suggests neutrality. These participants believe that delay of information is the highest source of stress during organizational restructuring ($M = 5.49$). Lack of communication ($M = 4.82$) and subordinate inquiries ($M = 4.81$) also caused stress among the managers, followed by career progression ($M = 4.69$) and rumors ($M = 4.69$). Compensation ($M = 4.16$), job security ($M = 4.00$), and separation anxiety ($M = 3.95$) ranked the lowest among the potential stress-causing factors for these participants.

Table 7

REAT: Stressors by Rank and Mean (n = 130)

Rank	Stressor	<i>M</i>
1	Delay of Information (DI)	5.49
2	Lack of Communication (LC)	4.82
3	Subordinate Inquiries (SI)	4.81
4	Career Progression (CP)	4.69
5	Rumors (RM)	4.69
6	Compensation (CM)	4.16
7	Job Security (JS)	4.00
8	Separation Anxiety (SA)	3.95

Pressure Management Indicator (PMI)

The Pressure Management Indicator (PMI) questionnaire (see Appendix C) is used to identify different stressors in the workplace. The PMI's 24 subscales can be categorized in a variety of ways. As shown in Table 3, for example, nine subscales can be categorized as outcomes (Job Satisfaction, Organization Satisfaction, Organizational Security, Organizational Commitment, State of Mind, Resilience, Confidence Level, Physical Symptoms, Energy Levels); eight can be categorized as stressors (Workload, Relationships, Recognition, Organizational Climate, Personal Responsibility, Managerial Role, Home-Work Balance, Daily Hassles); seven subscales can be categorized as moderators (Type A Drive, Patience-Impatience, Personal Influence, Control, Problem Focus, Life-Work Balance, Social Support). Another way of categorizing PMI subscales, as shown in Table 4, includes eight categories of pressure indicators, each having anywhere from one (Social Support) to eight (Sources of Pressure) subscales for a total of 24 subscales.

Liza Hutton, a technical assistance provider for Resource Systems, the authorized vendor for the PMI, recommended reporting results by subscale because of the various ways the subscales can be categorized or grouped (L. Hutton, personal communication, October 24, 2007). Moreover, means are not calculated either by item, by subscale, or by category; instead, Resource Systems provides a formula for calculating scores for subscales based on a population score determined from the testing of 20,981 individuals over time. The scores of the participants in the present study are then compared to those of the norming group ($n = 20,981$). The resulting scores of the two groups are relative to one another, enabling comparison of the subscales. The important consideration is the

difference between scores of the norming group and scores of the study participants. Because it is proprietary information, the formula for calculating scores is not included in this document.

Items on the PMI are phrased as statements for rating on a 6-point Likert-type scale ranging from 1 “Very strongly disagree” to 6 “Very strongly agree” or similar options depending on the way the statements are worded. No option for neutrality is provided. Each subscale consists of more than one question. In Table 8, the results of the 24 PMI subscales are reported for the participating 130 managers in the global pharmaceutical industry by subscale scores and within the nine categories presented in Table 4: (a) Satisfaction, (b) Organization, (c) Mental Wellbeing, (d) Physical Wellbeing, (e) Sources of Pressure, (f) Type A Behavior, (g) Influence/Control, (h) Coping, and (i) Support. In addition, an explanation of each subscale is included. Scores of participants and the norming group are shown along with the difference between the two scores. This approach enables the identification of specific indicators of pressure as well as an indication of the importance of each pressure measure to the participants. In every case, the higher the score, the greater the indicator for that category—i.e., in the category of Sources of Pressure, the higher the score, the greater the pressure on the individual.

To assess sources of pressure, the PMI questions in the Sources of Pressure category asked participants to rank factors in the workplace (subscales) causing the greatest stress. This category consistently showed a difference between the sample and norming group ($n - N$) in every subscale, indicating multiple higher levels of pressure for the study sample. Participant results indicate that the highest differences in scores vs. the normal population ($n - N > 4$) are in the following subscales: (a) Home/Work Balance

Table 8

PMI Survey Results by Score (n = 130) in Relation to the Norming Group (N = 20,981)

Category and Subscale	Code	Explanation	Scores		
			<i>n</i>	<i>N</i>	<i>n - N</i>
Satisfaction:					
Job Satisfaction	JI	How satisfied you are with the type of work you do	23.97	23.54	0.43
Organization Satisfaction	JO	How satisfied you are with the way your organization is structured and how it works	19.26	20.23	-0.97
Organization:					
Organizational Security	OS	How you feel about the stability of your organization and your level of job security	18.50	17.27	1.23
Organizational Commitment	OC	How committed you are to your organization and the extent to which you enjoy your job and feel that work improves your quality of life	19.48	19.48	0.00
Mental Wellbeing:					
State of Mind	MA	Your mental well-being	21.43	20.67	0.76
Resilience	MR	The ability to bounce back from setbacks or problems	18.47	17.66	0.81
Confidence Level	MW	How worried you are	9.96	10.37	-0.42
Physical Wellbeing:					
Physical Symptoms	PA	How calm you feel in terms of physical tension or uncomfortable sensations	13.67	14.95	-1.28
Energy Level	PE	The amount of energy and vitality you have	15.02	14.95	0.07

Category and Subscale	Code	Explanation	Scores		
			<i>n</i>	<i>N</i>	<i>n - N</i>
Sources of Pressure:					
Workload	PW	The amount or difficulty of work you have to deal with	21.98	17.79	4.19
Relationships	PR	How well you get along with the people around, particularly those at work	29.92	25.46	4.46
Recognition	PC	The extent to which people feel they need to have their achievements recognized	14.93	12.49	2.44
Organization Climate	PO	The “feel” or “atmosphere” within your place of work	14.82	13.02	1.80
Personal Responsibility	PP	Taking responsibility for managing other people	13.86	12.26	1.60
Managerial Role	PM	Being responsible for your actions and decisions	13.64	9.54	4.10
Home/Work Balance	PH	“Switching off” the pressure of work when at home and vice versa	18.45	13.92	4.53
Daily Hassles	PD	The day-to-day irritants and aggravations in the workplace	13.90	11.41	2.49
Type A Behavior:					
Drive	TD	Your desire to succeed and achieve results	9.25	15.83	-6.58
Patience/Impatience	TI	Your pace of life and your ability to cope with your need for urgency	20.29	18.60	1.69
Influence/Control:					
Control	LC	The extent to which you feel able to influence and control events	17.76	17.19	0.57
Personal Influence	LI	How much influence you have over your work and ability to exercise discretion in your job	12.92	12.08	0.84
Coping:					
Problem Focus	CO	The extent you are able to plan ahead and manage your time to deal with problems			
Life/Work Balance	CD	The extent to which you are able to separate home from work and not let things get to you	25.79	24.52	1.27
			16.42	16.90	-0.48
Support:					
Social Support	SS	The help you get by discussing problems or situations with other people	11.89	10.75	1.14

(PH), (b) Relationships (PR), (c) Workload (PW), and (d) Managerial Role (PM). The next level of pressure for participants is indicated by the following subscales with differences between the participants' and the norming population's ($n - N$) scores between 2 and 4: (a) Daily Hassles (PD) and (b) Recognition (PC). With sample-population difference ($n - N$) scores ranging between 1 and 2, the following subscales show an increased, but diminished level of pressure among the participants: (a) Organization Climate (PO) and (b) Personal Responsibility (PP).

Further investigation of Table 8 results reveals relationships within categories and in relation to the norming group. For example, participants are as satisfied with the type of work they do as are the members of the norming group, as shown in the scores on the Job Satisfaction (JI) subscale ($n - N = .43$), but they are less satisfied with the structure and workings of the organization (JO, $n - N = -0.97$). The sample of managers in the global pharmaceutical industry was not overly concerned with losing their jobs in the organizational restructuring (OS, $n - N = 1.23$) and reported their continued ability to control events (LC, $n - N = .57$) and maintain influence over their work (LI, $n - N = .84$). In addition, the sample of participants reported they were able to cope with problems (CO, $n - N = 1.27$) and receive support from others (SS, $n - N = 1.14$). In contrast, the greatest negative relationship between the two groups is in the category of Type A Behavior on the subscale Drive (TD). In this case, the difference is -6.58 , suggesting the study sample of managers has a much lower desire to succeed and achieve results than the norming population.

Health Survey Instrument (SF-36v2[®])

Like the PMI, the SF-36v2[®] is a proprietary instrument; therefore, all information related to it such as the instrument itself and its scoring method is copyrighted by QualityMetric Incorporated, the supplier of the instrument. Its use is limited to measuring aspects of health. As shown in Table 4, the SF-36v2[®] health survey instrument produces an 8-scale profile of functional health and well-being including both physical and mental health as well as component summary scores. The survey items require Likert-type responses, but the number of those responses varies by item. Ratings on items are self-report.

To calculate results for the SF-36v2[®], QualityMetric provided algorithms for norm-based scoring for all scales based on the 1998 U.S. population. The standardization of scoring ($M = 50$, $SD = 10$) facilitates the interpretation of the results. The means for the population used for norming the SF-36v2[®] were set by Ware, Kosinski, and Dewey (2002) at 50 with a standard deviation of 10 for every scale, and subsequent sample population scores are recalculated per QualityMetric instructions in relation to this norm. The norm-based scoring allows each of the eight scales to be compared meaningfully with the other scales.

Table 9 shows the SF-36v2[®] norm-based scoring of the scale means and the physical (PCS) and mental (MCS) component summary measures. Computing the PCS and MCS involved standardizing the eight SF-36v2[®] scales using a z score transformation, calculating the aggregate scores for the physical and mental components using coefficients derived from U.S. population results ($N = 6,742$), and transforming each component score to norm-based scoring (Ware et al., 2002). Standardization and

norm-based scoring enables a meaningful comparison and direct interpretation in relation to scores in the general U.S. population. All scores above and below 50 are above and below the average health, respectively, in the 1998 general U.S. population. For this reason, scores on the SF-36v2[®] are reported in Table 9 according to scale, means, standard deviation, minimum and maximum scores, percentile rank of the score, and percentage of the sample population ($n = 130$) below, at, or above the population on which the SF-36v2[®] scoring is based.

The higher the percentage above the norming population on the SF-36v2[®] scale, the less the participants ($n = 130$) were experiencing distress from the items on that scale. For example, 52% of the sample scored above the norm on the Bodily Pain (BP) scale, indicating that the participating managers are reporting less physical pain than is generally experienced by the average population. Similarly, 32% of the participating managers scored above the norm in Physical Functioning (PF); 27% in Role-Physical; 24% in Social Functioning; 18% in Role-Emotional; 5% in General Health; and 4% in Vitality. The only subscale in which no participating managers scored above the general population was Mental Health (MH), suggesting the pressure of major organizational change is affecting this group more in their mental health than in their physical health. In addition, 21% of participating managers scored above the population norm on the Physical Component Summary (PCS); none of the participants scored above the population norm on the Mental Component Summary (MCS). In fact, 79% scored below the norm on the MCS, suggesting many mental health problems as a result of restructuring.

Table 9

Results of the SF-36v2® Relating the Sample Population (n = 130) to the General Population (N = 6,742)

Scale	Code	M	SD	Minimum	Maximum	Percentile			% in Relation to N = 6,742		
						25 th	50 th	75 th	Below	At	Above
Physical Functioning	PF	53.05	5.48	29.67	57.03	52.82	54.93	57.03	9	59	32
Role-Physical	RP	48.77	8.59	22.57	56.85	47.06	49.51	56.85	23	50	27
Bodily Pain	BP	53.67	6.87	37.18	62.12	50.29	55.36	62.12	6	42	52
General Health	GH	46.01	4.80	36.25	59.13	43.40	45.78	48.17	46	49	5
Vitality	VT	43.97	5.20	30.24	55.21	40.38	42.72	45.85	56	40	4
Social Functioning	SF	45.94	7.65	29.58	56.85	40.49	45.94	51.40	37	39	24
Role-Emotional	RE	43.83	9.42	20.89	55.88	40.33	44.22	51.99	58	24	18
Mental Health	MH	42.08	6.27	19.03	52.82	38.74	44.38	44.38	75	25	0
Physical Component Summary	PCS	53.82	4.29	43.30	62.82	51.01	54.28	56.67	3	75	21
Mental Component Summary	MCS	40.12	6.97	18.40	53.86	37.19	41.03	44.17	79	21	0

Correlation Analysis

To test the hypotheses, the variables of the elements of restructuring as presented on the REAT instrument were correlated to the stress factors on the PMI and the health measures on the SF-36v2[®]. The following formula was used to calculate the correlation coefficient between two sets of measurements (x_1, \dots, x_n) and (y_1, \dots, y_n):

$$R_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\left(\sum_{i=1}^n (x_i - \bar{x})^2\right)\left(\sum_{i=1}^n (y_i - \bar{y})^2\right)}}$$

where \bar{x} and \bar{y} are the sample means $\bar{x} = (x_1 + \dots + x_n) / n$ and $\bar{y} = (y_1 + \dots + y_n) / n$.

The resulting correlation coefficient was a number between -1.00 and +1.00, indicating perfectly negative or perfectly positive correlation. The results of the correlation analysis of the REAT to the PMI are displayed in Table 10, and the results of the analysis of the REAT to the SF-36v2[®] are shown in Table 11.

The 20 hypotheses are based on the multiple restructuring elements as indicated by the REAT questionnaire and their influences on stress as identified by the Pressure Management Indicator (PMI; Williams & Cooper, 1996) and on physical and/or mental health as indicated by the SF-36v2[®] (Ware & Gandek, 1994), a short form physical and mental health survey. The independent (predictor) variables in this study, elements of restructuring, were examined statistically to determine whether they predict the dependent (criterion) variables—stress and health problems. Statistically significant correlations, $p < 0.05$ with $r \leq -0.5$ or $r \geq 0.5$, appear in boldface font in their respective tables. Results of the analysis at the r value cutoff level of 0.5 or above were deemed positively correlated; -0.5 or below, negatively correlated.

An examination of tables 10 and 11 shows that no significant (i.e., $-0.5 \geq r \geq 0.5$) correlations are evident either between the REAT scales and the PMI subscales or between the REAT scales and the SF-36v2[®] scales. In some cases, however, scales within the REAT, subscales within the PMI, and scales within the SF-36v2[®] correlated with one another. These correlations are shown in Table 12.

Factor Analysis

Multivariable study data are often difficult to interpret because of the number of variables involved. Factor analysis is a technique to reduce the number of variables by finding common factors among them without losing the information the original variables provide. It is based on correlation between the variables and results in a smaller number of derived or unobserved variables called factors (Punch, 2005). The goal of factor analysis is to examine statistically the relationships and patterns among many variables to reveal a common unobserved factor or hypothetical construct (Neumann, 2003). Whereas descriptive statistical methods summarize and describe data, inferential statistical methods such as factor analysis do not directly measure variables, but instead yield results which are more hypothetical and tentative (Darlington, n.d.).

Table 10

Correlation Matrix of REAT and PMI Scales

	REAT								PMI																												
	JS	SA	CM	CP	LC	DI	SI	RM	JI	JO	OS	OC	MA	MR	MW	PA	PE	PW	PR	PC	PO	PP	PM	PH	PD	TD	TI	LC	LI	CO	CD	SS					
	Job Security (JS)	Separation Anxiety (SA)	Compensation (CM)	Career Progression (CP)	Lack of Communication (LC)	Delay of Information (DI)	Subordinate Inquiries (SI)	Rumors (RM)	Job Satisfaction (JI)	Organisation Satisfaction (JO)	Organisational Security (OS)	Organisational Commitment (OC)	State Mind (MA)	Resilience (MR)	Confidence Level (MW)	Physical Symptoms (PA)	Energy Level (PE)	Workload (PW)	Relationships (PR)	Recognition (PC)	Organisation Climate (PO)	Personal Responsibility (PP)	Managerial Role (PM)	Home/Work Balance (PH)	Daily Hassles (PD)	Drive (TD)	Patience/Impatience (TI)	Control (LC)	Personal Influence (LI)	Problem Focus (CO)	Life/Work Balance (CD)	Social Support (SS)					
REAT	1.00																																				
SA	0.70	1.00																																			
CM	0.72	0.56	1.00																																		
CP	0.61	0.62	0.57	1.00																																	
LC	0.47	0.53	0.35	0.59	1.00																																
DI	0.47	0.44	0.38	0.42	0.80	1.00																															
SI	0.28	0.22	0.31	0.36	0.67	0.80	1.00																														
RM	0.42	0.39	0.28	0.43	0.68	0.80	0.81	1.00																													
PMI									1.00																												
JI	-0.14	-0.07	-0.08	0.06	-0.03	-0.06	-0.06	0.02	1.00																												
JO	-0.08	-0.15	-0.23	-0.13	-0.19	-0.16	-0.18	-0.10	0.41	1.00																											
OS	-0.10	0.07	0.07	0.03	-0.15	-0.13	-0.19	-0.09	0.03	-0.52	1.00																										
OC	0.00	-0.03	-0.05	0.06	0.03	0.04	-0.01	-0.04	0.57	0.45	-0.38	1.00																									
MA	-0.11	0.03	-0.11	-0.14	-0.21	-0.21	-0.25	-0.26	-0.20	-0.21	0.37	-0.41	1.00																								
MR	0.01	-0.05	0.01	0.00	0.06	0.03	-0.04	0.03	0.21	0.25	-0.16	0.29	-0.56	1.00																							
MW	0.18	0.03	0.12	0.08	0.07	0.09	0.18	0.16	0.08	-0.02	-0.10	0.15	-0.60	0.19	1.00																						
PA	0.04	-0.11	-0.03	-0.10	-0.01	0.04	0.03	0.04	0.02	0.37	-0.37	0.20	-0.36	0.50	0.14	1.00																					
PE	0.11	-0.01	0.02	0.08	0.12	0.04	0.00	0.08	0.25	0.29	-0.31	0.46	-0.56	0.63	0.32	0.58	1.00																				
PW	-0.10	0.02	-0.08	0.06	-0.18	-0.24	-0.25	-0.15	0.24	0.07	0.22	-0.04	0.41	-0.26	-0.30	-0.38	-0.32	1.00																			
PR	0.20	0.24	0.23	0.29	0.08	-0.01	0.07	0.11	-0.04	-0.21	0.14	-0.11	0.13	-0.05	-0.08	-0.34	-0.16	0.52	1.00																		
PC	0.10	0.18	0.20	0.21	-0.07	-0.15	-0.09	0.01	-0.07	-0.25	0.30	-0.19	0.06	0.03	0.08	-0.23	-0.07	0.51	0.79	1.00																	
PO	0.03	0.05	0.16	0.02	-0.07	-0.03	-0.02	0.08	-0.02	-0.29	0.47	-0.54	0.38	-0.25	-0.07	-0.33	-0.41	0.38	0.42	0.50	1.00																
PP	0.02	0.13	0.05	0.09	0.05	0.01	0.01	0.06	0.04	-0.03	0.13	-0.24	0.52	-0.34	-0.45	-0.40	-0.40	0.66	0.52	0.36	0.50	1.00															
PM	0.13	0.15	0.10	0.10	0.04	0.00	0.01	0.08	-0.01	0.06	-0.02	-0.19	0.32	-0.17	-0.31	-0.07	-0.12	0.56	0.41	0.34	0.41	0.72	1.00														
PH	0.10	0.24	0.07	0.10	0.00	-0.04	-0.08	0.03	0.06	-0.06	0.11	-0.10	0.16	-0.36	0.05	-0.23	-0.18	0.54	0.35	0.36	0.35	0.46	0.47	1.00													
PD	-0.05	0.00	-0.06	0.02	-0.11	-0.09	-0.13	-0.13	-0.05	-0.11	0.20	-0.23	0.57	-0.43	-0.31	-0.40	-0.53	0.66	0.36	0.26	0.41	0.65	0.57	0.52	1.00												
TD	-0.08	-0.16	-0.16	-0.06	-0.06	-0.05	-0.01	-0.04	-0.13	0.04	-0.16	0.12	-0.27	0.18	0.05	-0.03	0.00	0.07	0.15	0.20	-0.17	-0.13	-0.19	-0.19	-0.10	1.00											
TI	-0.03	-0.02	-0.02	-0.03	0.00	0.01	-0.03	0.00	0.04	-0.07	0.28	-0.13	0.25	-0.02	-0.10	0.03	0.03	0.14	0.06	0.20	0.25	0.18	0.22	-0.11	0.19	-0.11	1.00										
LC	-0.07	-0.10	-0.07	0.13	0.08	-0.01	0.02	0.06	0.38	0.33	-0.39	0.41	-0.44	0.29	0.04	0.25	0.37	0.12	0.07	0.07	-0.32	-0.07	-0.03	0.05	-0.15	0.30	-0.14	1.00									
LI	-0.27	-0.27	-0.21	-0.21	-0.20	-0.18	-0.19	-0.33	-0.12	0.01	-0.15	0.29	-0.05	0.05	0.10	0.04	0.00	-0.13	-0.20	-0.06	-0.27	-0.28	-0.27	-0.12	0.08	0.25	-0.01	0.13	1.00								
CO	-0.14	-0.07	-0.06	0.06	-0.09	-0.14	-0.13	-0.10	0.34	0.18	0.13	0.12	-0.09	0.39	-0.02	-0.02	0.16	0.39	0.44	0.50	0.23	0.19	0.11	0.02	0.16	0.12	0.27	0.31	0.12	1.00							
CD	-0.13	-0.11	0.05	-0.04	-0.23	-0.09	-0.01	-0.06	-0.06	-0.07	0.16	-0.18	0.04	-0.05	-0.02	-0.22	-0.30	0.22	0.35	0.43	0.43	0.31	0.13	0.03	0.18	0.21	-0.09	-0.06	0.02	0.16	1.00						
SS	0.06	0.06	0.07	0.14	0.03	0.05	0.07	0.08	0.23	0.09	-0.11	0.02	0.01	0.02	-0.18	-0.12	-0.05	0.31	0.47	0.35	0.31	0.50	0.40	0.25	0.31	0.11	0.02	0.25	-0.16	0.21	0.49	1.00					

Table 11

Correlation Matrix of REAT and SF36v2 Scales

		REAT								SF-36v2								
		Job Security	Separation Anxiety	Compensation	Career Progression	Lack of Communication	Delay of Information	Subordinate Inquiries	Rumors	Physical Functioning	Role-Physical	Bodily Pain	General Health	Vitality	Social Functioning	Role-Emotional	Mental Health	
Job Security	REAT	1.00																
Separation Anxiety		0.70	1.00															
Compensation		0.72	0.56	1.00														
Career Progression		0.61	0.62	0.57	1.00													
Lack of Communication		0.47	0.53	0.35	0.59	1.00												
Delay of Information		0.47	0.44	0.38	0.42	0.80	1.00											
Subordinate Inquiries		0.28	0.22	0.31	0.36	0.67	0.80	1.00										
Rumors		0.42	0.39	0.28	0.43	0.68	0.80	0.81	1.00									
Physical Functioning	SF-36v2	-0.04	-0.07	-0.13	-0.08	-0.04	-0.13	-0.06	0.01	1.00								
Role-Physical		-0.03	0.01	0.00	-0.04	0.12	0.12	0.01	0.04	-0.12	1.00							
Bodily Pain		0.12	0.16	0.15	0.13	0.19	0.21	0.16	0.22	-0.19	0.08	1.00						
General Health		0.13	0.11	0.05	0.17	0.16	0.09	0.01	0.02	0.05	0.35	0.38	1.00					
Vitality		-0.03	-0.02	-0.01	-0.18	0.04	0.03	0.04	0.04	-0.09	0.33	0.15	0.00	1.00				
Social Functioning		0.09	0.08	-0.02	0.02	0.15	0.17	0.06	0.12	0.10	0.38	0.44	0.47	0.13	1.00			
Role-Emotional		0.17	0.13	0.17	0.16	0.26	0.32	0.22	0.31	0.02	0.64	-0.06	0.32	0.10	0.42	1.00		
Mental Health		-0.15	-0.16	-0.17	-0.20	-0.08	-0.04	-0.11	-0.10	-0.25	0.70	-0.12	0.19	0.21	0.28	0.50	1.00	

Table 12

Correlations Within the REAT Scales, the PMI Subscales, and the SF-36v2[®] Scales

Scale/Subscale #1	Code	Scale/Subscale #2	Code	<i>r</i>
REAT:		REAT:		
Separation Anxiety	SA	Job Security	JS	.70
Compensation	CM	Job Security	JS	.72
Compensation	CM	Separation Anxiety	SA	.56
Career Progression	CP	Job Security	JS	.61
Career Progression	CP	Separation Anxiety	SA	.62
Career Progression	CP	Compensation	CM	.57
Lack of Communication	LC	Separation Anxiety	SA	.53
Lack of Communication	LC	Career Progression	CP	.59
Delay of Information	DI	Lack of Communication	LC	.80
Subordinate Inquiries	SI	Lack of Communication	LC	.67
Subordinate Inquiries	SI	Delay of Information	DI	.80
Rumors	RM	Lack of Communication	LC	.68
Rumors	RM	Delay of Information	DI	.80
Rumors	RM	Subordinate Inquiries	SI	.81
PMI:		PMI:		
Organizational Security	OS	Organization Satisfaction	JO	-.52
Organizational Commitment	OC	Job Satisfaction	JI	.57
Resilience	MR	State of Mind	MA	-.56
Confidence Level	MW	State of Mind	MA	-.60
Energy Level	PE	State of Mind	MA	-.56
Energy Level	PE	Resilience	MR	.63
Energy Level	PE	Physical Symptoms	PA	.58
Relationships	PR	Workload	PW	.52
Recognition	PC	Workload	PW	.51
Recognition	PC	Relationships	PR	.79
Organization Climate	PO	Organizational Commitment	OC	-.54
Organization Climate	PO	Recognition	PC	.50
Personal Responsibility	PP	State of Mind	MA	.52
Personal Responsibility	PP	Workload	PW	.66
Personal Responsibility	PP	Relationships	PR	.52
Personal Responsibility	PP	Organization Climate	PO	.50
Managerial Role	PM	Workload	PW	.56
Managerial Role	PM	Personal Responsibility	PP	.72
Home/Work Balance	PH	Workload	PW	.54
Daily Hassles	PD	State of Mind	MA	.57
Daily Hassles	PD	Energy Level	PE	-.53
Daily Hassles	PD	Workload	PW	.66

Scale/Subscale #1	Code	Scale/Subscale #2	Code	<i>r</i>
Daily Hassles	PD	Personal Responsibility	PP	.65
Daily Hassles	PD	Managerial Role	PM	.57
Daily Hassles	PD	Home/Work Balance	PH	.52
Problem Focus	CO	Recognition	PC	.50
Social Support	SS	Personal Responsibility	PP	.50
SF-36v2 [®] :		SF-36v2 [®] :		
Role-Emotional	RE	Role-Physical	RP	.64
Mental Health	MH	Role-Physical	RP	.70
Mental Health	MH	Role-Emotional	RE	.50

The original results for each of the variables in the REAT instrument used in this study were entered into a specialized software program called MATLAB (The Mathworks, Inc., 2008) that performed the factor analysis. Results are presented in Table 13. The table depicts the derived *factors*, a higher level of abstraction or generality than the original variables, and factor *loadings*, the relationship or interdependence between the original variables to the derived factor. The analysis translates observed variables into unobserved or extracted factors. Higher factor loading values indicate stronger relationships between the variable and the factor. For example, a factor loading value of 1 would indicate that there is *no* common factor component in that variable, while a specific variance of 0 would indicate that the variable is *entirely* determined by common factors.

The factor analysis data presented in Table 13 show that two factors are abstracted from the original eight REAT variables. The factors are linear combinations of the original variables which form new axes that can be used to describe the original data. The factors explain approximately 80% of the variability in the original data. The factor

Table 13

REAT: Factors and Loadings

Variable	Factor #1	Factor #2
Delay of Information (DI)	0.21	0.86
Lack of Communication (LC)	0.21	0.78
Subordinate Inquiries (SI)	0.17	0.73
Career Progression (CP)	0.30	0.67
Rumors (RM)	0.73	0.41
Compensation (CM)	0.87	0.32
Job Security (JS)	0.89	0.11
Separation Anxiety (SA)	0.84	0.25

analysis results show that the two derived factors for the REAT are clear and distinct. The first REAT factor includes high factor loading values surrounding a theme of *security* (job security, compensation, separation anxiety, and rumors), while the second REAT factor involves issues related to *communication* (delay of information, lack of communication, subordinate inquiries, and career progression). With respect to the managers in this study, all four components of the communication factor ranked higher as stressors than the four components of the security factor. The two factors, communication and security, represent the psychometric dimensionality of the REAT instrument. These two empirically based factors from the REAT instrument were statistically analyzed to determine whether they could predict the dimensions of the two published tools.

Correlation of REAT Factor Scores

A regression analysis was performed to determine whether the security and communication factors from the REAT correlate with the dimensional scales from the published PMI and SF-36v2[®] instruments. Tables 14 and 15 show the resulting correlations between the REAT factor scores and the PMI and SF-36v2[®] Health Survey scales, respectively.

Table 14

Correlation Matrix of REAT Factors and PMI Scales

		Communication	Security	Job Satisfaction (JI)	Organisation Satisfaction (JO)	Organisational Security (OS)	Organisational Commitment (OC)	State Mind (MA)	Resilience (MR)	Confidence Level (MW)	Physical Symptoms (PA)	Energy Level (PE)	Workload (PW)	Relationships (PR)	Recognition (PC)	Organisation Climate (PO)	Personal Responsibility (PP)	Managerial Role (PM)	Home/Work Balance (PH)	Daily Hassles (PD)	Drive (TD)	Patience/Impatience (TI)	Control (LC)	Personal Influence (LI)	Problem Focus (CO)	Life/Work Balance (CD)	Social Support (SS)	
		REAT		PMI																								
Communication	REAT	1.00																										
Security	REAT	0.06	1.00																									
JI	PMI	-0.02	-0.09	1.00																								
JO	PMI	-0.15	-0.13	0.41	1.00																							
OS	PMI	-0.17	0.03	0.03	-0.52	1.00																						
OC	PMI	0.01	-0.01	0.57	0.45	-0.38	1.00																					
MA	PMI	-0.26	-0.04	-0.20	-0.21	0.37	-0.41	1.00																				
MR	PMI	0.01	0.00	0.21	0.25	-0.16	0.29	-0.56	1.00																			
MW	PMI	0.12	0.10	0.08	-0.02	-0.10	0.15	-0.60	0.19	1.00																		
PA	PMI	0.04	-0.05	0.02	0.37	-0.37	0.20	-0.36	0.50	0.14	1.00																	
PE	PMI	0.04	0.07	0.25	0.29	-0.31	0.46	-0.56	0.63	0.32	0.58	1.00																
PW	PMI	-0.24	0.00	0.24	0.07	0.22	-0.04	0.41	-0.26	-0.30	-0.38	-0.32	1.00															
PR	PMI	0.00	0.26	-0.04	-0.21	0.14	-0.11	0.13	-0.05	-0.08	-0.34	-0.16	0.52	1.00														
PC	PMI	-0.15	0.20	-0.07	-0.25	0.30	-0.19	0.06	0.03	0.08	-0.23	-0.07	0.51	0.79	1.00													
PO	PMI	-0.03	0.06	-0.02	-0.29	0.47	-0.54	0.38	-0.25	-0.07	-0.33	-0.41	0.38	0.42	0.50	1.00												
PP	PMI	0.01	0.07	0.04	-0.03	0.13	-0.24	0.52	-0.34	-0.45	-0.40	-0.40	0.66	0.52	0.36	0.50	1.00											
PM	PMI	-0.01	0.15	-0.01	0.06	-0.02	-0.19	0.32	-0.17	-0.31	-0.07	-0.12	0.56	0.41	0.34	0.41	0.72	1.00										
PH	PMI	-0.08	0.17	0.06	-0.06	0.11	-0.10	0.16	-0.36	0.05	-0.23	-0.18	0.54	0.35	0.36	0.35	0.46	0.47	1.00									
PD	PMI	-0.13	-0.01	-0.05	-0.11	0.20	-0.23	0.57	-0.43	-0.31	-0.40	-0.53	0.66	0.36	0.26	0.41	0.65	0.57	0.52	1.00								
TD	PMI	-0.01	-0.13	-0.13	0.04	-0.16	0.12	-0.27	0.18	0.05	-0.03	0.00	0.07	0.15	0.20	-0.17	-0.13	-0.19	-0.19	-0.10	1.00							
TI	PMI	0.00	-0.03	0.04	-0.07	0.28	-0.13	0.25	-0.02	-0.10	0.03	0.03	0.14	0.06	0.20	0.25	0.18	0.22	-0.11	0.19	-0.11	1.00						
LC	PMI	0.05	-0.06	0.38	0.33	-0.39	0.41	-0.44	0.29	0.04	0.25	0.37	0.12	0.07	0.07	-0.32	-0.07	-0.03	0.05	-0.15	0.30	-0.14	1.00					
LI	PMI	-0.19	-0.25	-0.12	0.01	-0.15	0.29	-0.05	0.05	0.10	0.04	0.00	-0.13	-0.20	-0.06	-0.27	-0.28	-0.27	-0.12	0.08	0.25	-0.01	0.13	1.00				
CO	PMI	-0.12	-0.07	0.34	0.18	0.13	0.12	-0.09	0.39	-0.02	-0.02	0.16	0.39	0.44	0.50	0.23	0.19	0.11	0.02	0.16	0.12	0.27	0.31	0.12	1.00			
CD	PMI	-0.07	-0.10	-0.06	-0.07	0.16	-0.18	0.04	-0.05	-0.02	-0.22	-0.30	0.22	0.35	0.43	0.43	0.31	0.13	0.03	0.18	0.21	-0.09	-0.06	0.02	0.16	1.00		
SS	PMI	0.05	0.07	0.23	0.09	-0.11	0.02	0.01	0.02	-0.18	-0.12	-0.05	0.31	0.47	0.35	0.31	0.50	0.40	0.25	0.31	0.11	0.02	0.25	-0.16	0.21	0.49	1.00	

Table 15

Correlation Matrix of REAT Factors and SF-36v2[®] Health Survey Scales

		Communication	Security	Physical Functioning	Role-Physical	Bodily Pain	General Health	Vitality	Social Functioning	Role-Emotional	Mental Health	PCS	MCS
		REAT		SF-36v2									
Communication	REAT	1.00											
	SF-36v2	0.06	1.00										
Security	REAT												
Security	SF-36v2												
Physical Functioning	REAT	-0.06	-0.07	1.00									
Physical Functioning	SF-36v2												
Role-Physical	REAT	0.09	-0.02	-0.12	1.00								
Role-Physical	SF-36v2												
Bodily Pain	REAT	0.19	0.13	-0.19	0.08	1.00							
Bodily Pain	SF-36v2												
General Health	REAT	0.04	0.14	0.05	0.35	0.38	1.00						
General Health	SF-36v2												
Vitality	REAT	0.05	-0.06	-0.09	0.33	0.15	0.00	1.00					
Vitality	SF-36v2												
Social Functioning	REAT	0.13	0.05	0.10	0.38	0.44	0.47	0.13	1.00				
Social Functioning	SF-36v2												
Role-Emotional	REAT	0.29	0.14	0.02	0.64	-0.06	0.32	0.10	0.42	1.00			
Role-Emotional	SF-36v2												
Mental Health	REAT	-0.05	-0.18	-0.25	0.70	-0.12	0.19	0.21	0.28	0.50	1.00		
Mental Health	SF-36v2												
PCS	REAT	0.03	0.05	0.44	0.28	0.63	0.55	0.18	0.40	-0.06	-0.18	1.00	
PCS	SF-36v2												
MCS	REAT	0.17	0.01	-0.23	0.71	-0.01	0.30	0.31	0.57	0.85	0.80	-0.15	1.00
MCS	SF-36v2												

Summary

The results of the study were presented in this chapter. The purpose of the study, the research questions, and the hypotheses were reiterated. The variables were once again identified, and the research instruments were documented. The independent variables were the restructuring elements measured by the REAT, and the dependent variables were level of stress as measured by the PMI and physical and/or mental health issues as measured by the SF-36v2[®]. The pilot study conducted to review the usability of the three web-based surveys was also reported.

The demographics of the 130 participants representing eight global pharmaceutical companies indicated that they were primarily men (56.9%), middle managers (71.5%), and 40-49 years of age (37.7%). All had earned at least a Bachelor's

degree. Participants had between two and 24 employees reporting to them, and their companies had undergone a merger (23.8%), an acquisition (25.4%), or a restructuring (50.8%) within the previous six months.

Participants responded to the three instruments, and means and scores of the scales and subscales, as appropriate, were reported. The means of the responses on the REAT scales were calculated, and the scales were ranked according to level of importance to participants. Delay of Information ($M = 5.49$) ranked as the primary stressor; Separation Anxiety ($M = 3.95$) as the least important stressor. On the PMI, the category of Sources of Pressure including the subscales of Workload (PW), Relationships (PR), Recognition (PC), Organization Climate (PO), Personal Responsibility (PP), Managerial Role (PM), Home/Work Balance (PH), and Daily Hassles (PD) displayed the greatest positive differences with the norm. In terms of physical and/or mental health, scores on the SF-36v2[®] indicated Mental Health (MH) as the greatest source of distress with 75% of participating managers scoring below the norm. The Physical Component Summary (PCS) scores revealed that 21% of participants scored above the norm, while on the Mental Component Summary (MCS), 79% of participants scored below the norm, indicating severe mental health implications of restructuring.

Correlation analysis was conducted to determine the relationships among the three variables: (a) restructuring elements on the REAT, (b) pressure indicators on the PMI, and (c) health status on the SF-36v2[®]. Another purpose of this analysis was to determine support for the 20 hypotheses proposed in the study. Analysis indicated that not one of the 20 hypotheses was supported. Significance was found, however, in correlating scores on scales and subscales within each instrument ($-.5 \geq r \geq .5$). A factor analysis was also

performed which confirmed the lack of correlation between the instruments, but this additional analysis identified two distinct factors for the REAT instrument elements. Results of the regression analysis between the new derived REAT factors and the PMI and SF-36v2[®] scales did not reveal statistically significant ($p < 0.05$ with $r \leq -0.5$ or $r \geq 0.5$) correlations. These results are discussed in the next chapter in relation to the research questions and the literature review. In addition, recommendations for future research are suggested.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

According to this study, stress was present in the global pharmaceutical industry as a result of an increased number of M&As and restructuring (Shanley & Bartels, 2006). The chaotic climate often brought about merely by the announcement of a merger, an acquisition, and/or restructuring appeared to result in heightened stress among employees at every level of the organization (Kanter, 1987). Some individuals are better able to cope with stress than others (Williams & Cooper, 1998). The problem that remains unsolved is to understand the elements of restructuring, as shown in the literature, which cause stress in the global pharmaceutical industry in order to enable managers to moderate these stressors.

The purpose of this quantitative study, *The Relationship Between the Elements of Organizational Restructuring and Manager Stress: A Pharmaceutical Industry Study*, was to test hypotheses regarding the elements of restructuring (job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors) and their relationship with manager stress and health during these periods of restructuring in the global pharmaceutical industry. It was hoped that the findings of this research might make it possible for managers to identify and predict elements which cause stress and health problems during organizational restructuring, thereby enabling the managers to mitigate the effects of the major organizational change.

This study was conducted with 130 participating middle- and senior-level managers from eight global pharmaceutical companies. The requirements for participation included: (a) the participant is a manager in a global pharmaceutical

company, (b) the manager has at least two direct reports, and (c) the company has undergone merger, acquisition, or restructuring within the six months prior to participation in the study. Each participant was invited to complete three web-based surveys on elements of restructuring (Restructuring Elements Analysis Tool), stress and coping (Pressure Management Indicator), and physical and mental health (Short Form Health Survey). Data were then analyzed from the surveys to investigate four research questions and 20 hypotheses. The primary limitation in this study was its reliance on managers in the global pharmaceutical industry; therefore, caution should be taken in generalizing the findings to any other group, industry, or situation (Borg & Gall, 1983; Flyvbjerg, 2000).

The purpose of this chapter is to discuss the results of this study, and form conclusions from it. This chapter includes a discussion of (a) conclusions drawn from the data analyses, (b) implications of the study for organizational leaders and managers, (c) significance of the study to leadership, and (d) recommendations to stakeholders and for further research. The meaning and significance of the study results with respect to organizational leaders and managers is presented.

Responses to the Research Questions

This study investigated four research questions and explored 20 related hypotheses. Not one of the 20 hypotheses was supported by the data analysis.

Research Question 1

The first research question asked, “What is the relationship between elements of organizational restructuring as measured by the Restructuring Elements Analysis Tool (REAT) and manager stress in the workplace as measured by the Pressure Management

Indicator (PMI; Williams & Cooper, 1996)?" Analysis indicated that no relationship exists between the elements of restructuring and manager stress. An examination of the results from the PMI subscales suggest, however, that participants were experiencing pressure resulting from the following stressors: (a) Workload, (b) Relationships, (c) Recognition, (d) Organization Climate, (e) Personal Responsibility, (f) Managerial Role, (g) Home/Work Balance, (h) Daily Hassles, (i) Organizational Security, (j) Patience/Impatience, (k) Problem Focus, and (l) Social Support. When thought about as a group, these pressure management indicators imply that these managers are feeling a great deal of stress compared to the general population.

Research Question 2

The second research question asked, "Is restructuring in the organization causing stress on the manager as measured by the REAT and health problems as measured by the SF-36v2[®] (Ware, 2005)?" According to the analysis of the data, no relationship between organizational restructuring and health problems is evident. It is interesting to note, however, that participating managers are experiencing severe mental health distress as evidenced by 79% of them who scored below the general population on the Mental Component Summary (MCS).

Research Question 3

The third research question asked, "Does a relationship exist between the independent variables (job security, separation anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors) and the dependent variable (level of stress)?" This research question sought to identify and triangulate relationships between the independent variables (job security, separation

anxiety, compensation, career progression, lack of communication, delay of information, subordinate inquiries, and rumors) as presented in the REAT and the dependent variable (level of stress) as measured by the subscales of the PMI and the SF-36v2[®]. Correlation of the REAT with the PMI and the SF-36v2[®] indicated no relationship between the independent and the dependent variables; however, further review of the analyses shows relationships of individual scales or subscales within each of the instruments. For example, within the REAT, when significance for correlation is set at $-.5 \geq r \geq .5$, Job Security (JS) correlates positively with Separation Anxiety (SA), Compensation (CM), Career Progression (CP); Lack of Communication (LC) correlates positively with Delay of Information (DI), Subordinate Inquiries (SI), and Rumors (RM). This finding suggests internal validity for the REAT since, by definition, these scales relate to one another.

Research Question 4

The fourth research question asked, “Does a relationship exist between restructuring elements and the physical and/or mental health of managers?” This fourth research question sought to identify and triangulate relationships between the REAT restructuring elements and the physical and/or mental health of managers as measured by the subscales of the PMI and the SF-36v2[®]. No evidence was found through data analysis to support relationships between restructuring elements and the physical and/or mental health of managers during periods of major organizational stress.

The PMI subscales and the SF-36v2[®] scales correlate with one another either positively or negatively, however. Within the PMI, for example, Physical Symptoms (PA) correlates positively with Energy Level (PE). Both PA and PE are categorized as Physical Wellbeing. In contrast, Organizational Commitment (OC) in the Organization

category is negatively correlated with Organization Climate (PO), a Source of Pressure. It would be expected that subscales within the same categories would correlate, but these correlations may have more to do with how the subscales were categorized than with the actual results. Similar findings were evident on the SF-36v2[®]. Once again, these findings of significant correlation within the instrument itself may result from internal validity of the instrument and/or from not setting the level of significance high enough.

Conclusions

The analysis of the data showed that statistical calculations yielded insufficient evidence to reject the null the hypotheses related to the purpose of the study - to correlate the relationships between organizational restructuring elements and the stress and health problems that may have been caused by these elements. Examination of the individual measurement tools offers some useful information as well as recommendations for future research.

Restructuring Elements Analysis Tool (REAT)

The REAT survey was developed by the researcher for use in the present study. The scales in this study are based on the review of the literature which indicated that eight factors appear to be the primary stressors during periods of major organizational change. Each factor was converted to a three-question scale with items configured on a 7-point Likert-type scale. Based on the means for each scale, participants ranked the eight stressors in the following order from greatest to least: (a) Delay of Information (DI), (b) Lack of Communication (LC), (c) Subordinate Inquiries (SI), (d) Career Progression (CP), (e) Rumors (RM), (f) Compensation (CM), (g) Job Security (JS), and (h) Separation Anxiety (SA).

The findings from the REAT reiterate the belief of Nguyen and Kleiner (2003) that the business benefits of restructuring far outweigh the detriments of stress on employees. Moreover, merger mania is omnipresent in the global pharmaceutical industry so that managers must be prepared to deal with the consequences of rapid and repeated restructuring (Bower, 2001; Oram, 2003). As a case in point, only eight companies in the global pharmaceutical industry were represented in the present study by the 130 participating middle- and senior-level managers. One company contributed as few as seven managers; another as many as 49. All of the companies had undergone a merger, an acquisition, or restructuring within the six months prior to the study, and four of the companies represented are on the list of the 20 largest pharmaceutical companies in the world (see Table 2).

As a result of the changes in the global pharmaceutical companies that are leading to a global oligopoly in which a few very large firms dominate the industry, employees, especially managers, need to be prepared for major changes in their workplace on a regular basis (Galambos, n.d.). In addition to workplace changes, the global aspect of the pharmaceutical industry may mean frequent relocation or considerable traveling for the manager, greatly impacting home life. The result is a new disease called “merger syndrome,” the fear of the worst result (Siehl & Smith, 1990). The evidence from the PMI and, in particular, the SF-36v2[®] supports the existence of merger syndrome among managers in the global pharmaceutical industry.

Pressure Management Indicator (PMI)

The Pressure Management Indicator was developed by Williams and Cooper (1996) to measure stress and coping among employees in the UK. The biggest problem in

using the PMI is the necessity of examining scores on subscales of the study sample in relation to a norming group. Moreover, the complexity of explaining the findings from the PMI resulted from the necessity of comparing one known group to an unknown population as well as the differences in countries and continents. That said, results of the PMI clearly indicated that the managers who participated in the present study are experiencing stress, most likely brought upon by major organizational changes. Further, it is clear that stress is more likely in some situations than others and in some individuals than others (Michie, 2002).

An important study on workplace-related stress was conducted by the European Agency for Safety and Health at Work (EASHW, 2000) in the UK. EASHW found a variety of ways for researching stress. One such way, used in the present study, is to treat stress as a dependent variable, a psychological response to the environment. The emphasis on the psychological effects of the workplace is a new construct. According to EASHW (2000), “psychosocial hazards may be defined as those aspects of work design and the organization and management of work, and their social and environmental contexts, which have the potential for causing psychological, social, or physical harm” (p. 14). Independent of the REAT and the SF-36v2[®], the PMI results in the present study suggest the workplace as a tremendous source of pressure with respect to workload, home/work balance, relationships, and managerial role--depleting managers of their drive and desire to achieve results during the restructuring process in the global pharmaceutical industry.

SF-36v2[®] Health Survey

High levels of stress may cause an array of negative outcomes in situations of organizational change (Rowlett, 2005). Based on the results of the REAT and the PMI, the managers who participated in this study are experiencing stress as a consequence of major organizational change. The problem with the change facing these 130 managers in the global pharmaceutical industry is that it is ongoing because, in the pharmaceutical industry, M&As and restructuring occur frequently (Sikora et al., 2004). Sikora et al. (2004) argued that the negative effects of such organizational changes and/or the ability to adapt to change lessen over time as the affected individuals become used to an environment of major upheaval. They therefore contended that stress in industries such as global pharmaceuticals should be considered through another lens called asynchronous, multiple, overlapping change (AMOC). The AMOC lens would require longitudinal study; therefore, it is impractical for the current context of doctoral study.

People respond to workplace stress differently (EASHW, 2000). For example, one REAT factor, Job Security (JS)—and Organizational Security on the PMI, has been linked to anxiety, depression, sleep problems, burnout, and heart disease (Glenn, 2005). In addition, workplace stress may affect a person's health (headaches and ulcers), cognition (forgetfulness and the inability to make decisions), and behavior (drug and alcohol use) (Gavin & Dileepan, 2002). Stress at work often leads to absenteeism due to illness (O'Connell, 2005). Results from the SF-36v2[®] suggest that mental health issues were experienced by more of the participating managers from the global pharmaceutical industry than were physical health issues.

Implications of the Study

This correlation study attempted to determine whether and to what degree, a predictive relationship exists between the quantifiable variables from the three instruments used. There are several explanations for the lack of significant correlations between organizational restructuring elements and the stress and health problems that may have been caused by these elements. First, moderators may be involved which were not measured. Managers may have strong personal confidence, for example, strengthened by years of specialized industry experience and education, which may override their fear of joblessness or other restructuring consequences. A recent study by Svensen, Neset, and Eriksen (2007) conducted during the early phase of a downsizing process showed that an employee's previous learning experience and characteristics of the working environment were associated with positive attitudes towards organizational change. Second, restructuring stress may be prolonged and/or repeated events for many of the participant managers, creating insensitivity toward the situational uncertainty and outcomes. Stress could be less pronounced in such cases and coping skills which were previously developed and utilized could be mitigating the stress to a large degree. Workers who experience repeated waves of downsizings were observed to have a slowed rate of decline for depression (Moore, Grunberg, & Greenburg). Also, Greenglass and Burke (2002) found that following extensive downsizing, restructuring and merging, individual resources such as control coping, self-efficacy and prior organizational commitment resulted in lower burnout. Third, lack of direct parity among the instrument scales may have resulted in a lack of correlation between the instruments. For example, different responses could be elicited by asking whether someone worries about the future of their

job vs. whether they have concern over the prospect of losing it and having to find another. Finally, the temporal aspect, asking participant managers to reflect back as far as six months, could result in inconsistencies or a have tempering effect on the stress which experienced at the time of the restructuring. The number of restructurings experienced by the participant or whether a restructuring was ongoing was not queried in the surveys.

Implications for Organizations

Based on the findings of the present study, stress in the global pharmaceutical workplace should be moderated at the organizational level. The reason is that repeated major organizational change in the form of M&As and restructuring has a potentially negative affect on middle- and senior-level managers both mentally and physically. Excess stress may negatively impact the ability of these managers to perform their jobs effectively. To moderate stress in the workplace, a law was passed in the UK requiring employers to recognize that such stress is occurring and to record it as part of their duty of care to protect the health, safety, and welfare of all employees (Peplow, 2005). The specific moderator of stress to be considered depends upon the kinds of stressors operating, the level of coping skills of those involved, and the culture of the organization (Cooper & Cartwright, 1994). Based on the findings of the existence of communication-related stress in the present study and the ranking of Delay of Information (DI), Lack of Communication (LC), and Subordinate Inquiries (SI) as the three primary stressors among managers, global pharmaceutical organizations may want to consider introducing frequent and consisting communication of restructuring-related information to middle- and senior-level managers (Cartwright & Cooper, 1993).

Participative management as a leadership style encourages a feeling of involvement among employees and helps deter stress via two-way communication. Schweiger and De Nisi (1991) found, for instance, that providing employees with a series of realistic communications via telephone hotlines, weekly meetings, and newsletters about an impending merger reduced the dysfunctional outcomes associated with organizational change. The internet certainly provides the option for virtually instantaneous communication via email, and this may serve as an effective means for providing updates between frequent, interactive face-to-face communications about the restructuring with senior management.

Implications for Managers

Managers in the global pharmaceutical industry need to be aware that frequent organizational upheavals such as those brought about by M&As and restructuring will impact their levels of stress and mental health. Knowing this and understanding that the primary stressors will be related to issues of communication, these managers can prepare themselves for dealing with the reality of the situation. They can decide up front how they will communicate what they know and how they will try to glean additional information from executive management. Managers can be taught how to neutralize rumors and how to handle subordinate inquiries in such a way that the fears of both managers and direct reports are minimized. In this way, the potential of major stressors can be mitigated.

Significance of the Study to Leadership

To ensure success during periods of major organizational change in the global pharmaceutical industry, leaders of such companies must focus on a combination of

people, relationships, and sensitivity to reduce the amount of stress and subsequent negative effects. Because organizations are “social structure created by individuals to support the collaborative pursuit of specified goals” (Scott, 2003, p. 11), cooperation and communication are critical components for moderating stress. Leaders must therefore be cognizant of situational leadership styles and techniques, changing their styles and techniques if necessary to fit the situation. Generally, participatory leadership is a useful management style during a period of change as opposed to an instant problem such as a fire or a lack of resources.

Anticipating the amount of stress caused by M&As in the pharmaceutical industry, as shown in the present study, managers should become more flexible and adopt more participative management styles to moderate stress. In addition, the inclusion of every level of organizational membership in the planning and implementation of change processes is essential to today’s organizations for leadership and identity (Yost, 2002). Managers influence employee attitudes during restructuring and mitigate stress by providing employees with frequent, honest, and relevant information; handling employees fairly; and answering questions and concerns the employees might have to the fullest extent possible (Schweiger & DeNisi, 1991). In addition, managers should attempt to reduce perceptions of politics and try to increase cooperation among organizational employees (Harris, James, & Boonthanom, 2005).

The influence managers have on employees can allay concerns and instill employee confidence. Managers who remain calm under pressure, handle frustration well, and do not over-react serve as a calming influence to mitigate stress (Pulakos et al., 2000). Referent power, transformational leadership, and consideration, all strongly based

on the leader's interpersonal competence, appear to have the strongest relationship with merger satisfaction and stress reduction (Covin et al., 1997).

Managers should promote self-esteem and provide meaning for employees. A focus on employee needs and relationships will help ensure restructuring success (Mills & MacKenzie, 2005). Managers need patience to contend with people who are anxious; communication skills to convey intentions, listen to issues, and win people over; and diplomatic skills to promote teamwork (Marks, 1997). A balance of strong leadership and genuine concern for employees is critical. Management must help employees feel comfortable and important while simultaneously providing clear direction so that misunderstanding can be minimized (Appelbaum et al., 2000). By managing employee needs for compassion and information carefully, stress can be channeled into productive work and favorable restructuring outcomes (Mirvis & Marks, 1992).

Recommendations

The present study was hampered by the complexity of analyzing the PMI and the SF-36v2[®] and by the use of a researcher-designed instrument, the REAT. Locating more user-friendly measures and extensively validating the REAT may assist in a more thorough discovery of relationships among major organizational change, stress, and physical and mental health in the global pharmaceutical industry. In addition, the use of other industries may prove valuable for comparison in situations of stress caused by major organizational change.

To understand how individual managers are affected by stress, qualitative research involving interviews and observations may provide more robust information. In addition, discussion of stress while it is occurring—i.e., during the actual period of M&A

or restructuring from inkling to happening—may help the manager to understand for himself or herself and his or her direct reports how best to cope. Further, the real causes of stress may surface. One belief is that the background of the individual may trigger panic and anxiety based on some parental influence. For example, a manager whose primary wage-earning parent was constantly losing jobs may have major job security issues. This type of research might best be conducted in the fields of psychology, counseling, or anthropology.

Finally, the global pharmaceutical industry needs to recognize the negative effects constant M&As and restructuring have on middle- and senior-level managers and to pay attention to preventive stress management. The findings of this study strongly suggest that delay and lack of communication cause the greatest stress; therefore, executives in the industry could make efforts to improve communications with managers. This strategy will enable managers to spread the truth, avoid rumors, and reduce fears among their direct reports.

Summary

The researcher, a manager in the global pharmaceutical industry, observed that the omnipresent M&As and restructuring within the industry appeared to cause stress among managers; however, no research was found that explored stress specifically among managers affected by major organizational change. To bridge that gap in the research, this study quantitatively investigated relationships between elements of restructuring and stress and health factors among middle- and senior-level managers in the global pharmaceutical industry.

This study produced a new measurement instrument based on the literature review, the Restructuring Elements Analysis Tool (REAT), which may help managers understand the importance of eight stressors caused by restructuring: (a) delay of information, (b) lack of communication, (c) subordinate inquiries, (d) career progression, (e) rumors, (f) compensation, (g) job security, and (h) separation anxiety. Communication-related stressors were the most critical for the 130 managers in the global pharmaceutical industry in the present study.

Research questions and hypotheses investigated the relationship of the REAT stressors as the independent variable to two dependent variables: (a) level of stress as measured by the PMI and (b) physical and/or mental health issues as identified by the SF-36v2[®]. No hypotheses were supported, and no relationships were found between the instrument variables. Instead, each of the three measures evidenced significance between its own scales or subscales, lending internal validity to each instrument.

This study has implications for leadership in the global pharmaceutical industry. First, it is important to recognize the levels of stress on middle- and senior-level managers brought about the unpredictable nature of M&As and restructuring. Second, delays in and lack of communication regarding M&As and restructuring produce the greatest amount of stress on these managers. Third, stress resulting from M&As and restructuring is leading to mental health issues among these managers. Next, leadership styles for these managers need to be situational so that they may adjust and adapt their style to what is happening in the environment especially during periods of major organizational change. Finally, organizations need to consider adopting resources such as

employee assistance programs and professional development training to assist managers in the global pharmaceutical industry in adapting to rapid change and upheaval.

This study also has implications for further research. Method and instrumentation are critical components of such implications. For instance, qualitative research using interviews and observations would capture the experience of stress as it is occurring. In quantitative research, validation of the REAT and more simplistic instruments for measuring workplace stress and physical and/or mental health might enable the calculation of more definite relationships between restructuring elements and stress and between restructuring elements and physical and/or mental health. Finally, additional analysis may show significance in the relationship among the three variables—restructuring elements, stress, and physical and/or mental health.

REFERENCES

- Allenbaugh, E. (2003, April). The eyes have it. *HR Magazine*, 48, 101-105.
- Amundson, N. E., Borgen, W. A., Jordan, S., & Erlebach, A. C. (2004). Survivors of downsizing: Helping and hindering experiences. *The Career Development Quarterly*, 52(3), 256-272.
- Antai-Otong, D. (2001). Creative stress-management techniques for self-renewal. *Dermatology Nursing*, 13(1), 31-38.
- Appelbaum, S. H., Gandell, J., Shapiro, B. T., Belisle, P., & Hoeven, E. (2000). Anatomy of a merger: Processes throughout the pre-during-post-stages (Part 2). *Management Decision*, 38(10), 674-685.
- Appelbaum, S. H., Gandell, J., Yortis, H., Proper, S., & Jobin, F. (2000). Anatomy of a merger: Behavior of organizational factors and processes throughout the pre-during-post-stages (Part 1). *Management Decision*, 38(9), 649-663.
- Arkin, A. (2003). Perfect fit. *People Management*, 9(19), 34-37.
- Astrachan, J. H. (2004, March). Organizational departures: The impact of separation anxiety as studied in a mergers and acquisitions simulation. *The Journal of Applied Behavioral Science* 40(1), 91-110.
- Bangsberg, P. T. (1998, November 12). Success of mergers and acquisitions relies on considering employees and culture. *Journal of Commerce: New York*, 5th ed., p. 2A.
- Bass, B. M., & Avolio, B. J. (1993). Transformational leadership and organizational culture. *Public Administration Quarterly*, 17(1), 112-122.

- Benson, S. G., & Dundis, S. P. (2003). Understanding and motivating health care employees: Integrating Maslow's hierarchy of needs, training and technology. *Journal of Nursing Management*, 11(5), 315-321.
- Borg, W. R., & Gall, M. D. (1983). *Educational research: An introduction* (4th ed.). New York: Longman.
- Bower, J. (2001). Not all M&As are alike—and that matters. *Harvard Business Review*, March.
- Brillhart, P. E. (2004). Technostress in the workplace: Managing stress in the electronic workplace. *Journal of the American Academy of Business*, 5(1/2), 302-308.
- Capdevila, G. (2000). Concentration requires regulation, says UNCTAD. *Global Policy Forum*, 1-3.
- Carleton, J. R., & Lineberry, C. S. (2004). *Achieving post-merger success: A stakeholder's guide to cultural due diligence, assessment and integration*. San Francisco: John Wiley & Sons.
- Cartwright, S., & Cooper, C. L. (1993). The psychological impact of merger and acquisition on the individual: A study of building society. *Human Relations*, 46(3), 327-348.
- Cartwright, S., & Cooper, C. L. (1994). The human effects of mergers and acquisitions. In C. L. Cooper & D. M. Rousseau (Eds.), *Trends in organizational behavior* (pp. 47-61). New York: Wiley.
- Cartwright, S., & Cooper, C. L. (1995). Organizational marriage: "Hard" versus "soft" issues? *Personnel Review*, 24(3), 32-43.

- Certo, S. C. (1980). *Principles of modern management: Functions and systems*. Dubuque, IA: Wm. C. Brown Company.
- Chase, D. G., Burns, D. J., & Claypool, G. A. (1997). A suggested ethical framework for evaluating corporate mergers and acquisitions. *Journal of Business Ethics*, 16(16), 1753-1764.
- Clampitt, P. G., & Williams, M. L. (2007, Winter). Decision downloading. *MIT Sloan Management Review*, 48(2), 77-84.
- Clay-Warner, J., Hedtvedt, K. A., & Roman, P. (2005). Procedural justice, distributive justice: How experiences with downsizing condition their impact on organizational conditions. *Social Psychology Quarterly*, 68(1), 89-103.
- Cohen, J., Gangi, W., Lineen, J., & Manard, A. (n.d.). *Strategic alternatives in the pharmaceutical industry*. Retrieved November 1, 2006, from http://www.kellogg.northwestern.edu/academic/biotech/articles/strategic_alternatives.pdf
- Cooper, C. L., & Cartwright, L. (1994). Stress-management interventions in the workplace: Stress counseling and stress audits. *British Journal of Guidance and Counselling*, 22(1), 65-74.
- Cooper, D. R., & Schindler, P. S. (2003). *Business research methods* (8th ed.). New York: McGraw-Hill.
- Covin, T. J., Kolenko, T. A., Sightler, K. W., & Tudor, R. K. (1997). Leadership style and post-merger satisfaction. *Journal of Management Development*, 16(1), 22-23.
- Creswell, J. W. (2002). *Educational research: Planning, conducting and evaluating quantitative and qualitative research*. Upper Saddle River, NJ: Pearson.

- Cuatrecasas, P. (2006, November). Drug discovery in jeopardy. *Journal of Clinical Investigation* 116(11), 2837-2842.
- Darlington, R. B. (n.d.). *Factor analysis*. Retrieved May 20, 2008, from <http://comp9.psych.cornell.edu/Darlington/factor.htm>.article
- Dunlap, W. P., Xin, X., & Myers, L. (2004, November). Computing aspects of power for multiple regression. *Behavior Research Methods, Instruments, & Computers*, 36(4), 695-701.
- Emerald Group. (2005). How timely talk wrecks the rumors: Go for growth but tell people what is happening. *Strategic Direction*, 21(11), 8-11.
- European Agency for Safety and Health at Work (EASHW). (2000). *Research on work-related stress*. Luxembourg, Belgium: Office for Official Publications of the European Communities.
- Flyvbjerg, B. (2000). Five misunderstandings about case-study research. *Qualitative Inquiry*, 12(2), 219-245.
- Folkman, S., & Lazarus, R. S. (1988). *Ways of Coping Questionnaire test booklet*. Mountain View, CA: Consulting Psychologists Press.
- Fugate, M., Kinicki, A. J., & Scheck, C. L. (2002). Coping with an organizational merger over four stages. *Personnel Psychology*, 55(4), 905-929.
- Galambos, L. (n.d.). *Global oligopoly, regional authority, and national power: Crosscurrents in pharmaceuticals today and tomorrow*. Retrieved on November 1, 2006, from <http://www.jhu.edu/~iaesbe/working%20paper/Global%20Oligopoly,%20Regional%20Authority,%20&%20National%20Power.pdf>

- Gall, J. P., Gall, M. D., & Borg, W. R. (1999). *Applying educational research: A practical guide* (4th ed.). New York: Longman.
- Gavin, T. A., & Dileepan, P. (2002). Stress!/: Analyzing the culprits and prescribing a cure. *Strategic Finance*, 84(5), 50-55.
- Gerber, K. J. (2007, April). Eight decades of healthcare. *H&HN: Hospital and Health Networks* 81(4), 10-13.
- Gilmore, G. (1994). Coping with the reality of rightsizing. *Risk Management*, 41(1), 43-47.
- Glenn, W. M. (2005). Downsizing or wrongsizing? *OH & S Canada*, 21(2), 84-86.
- Greenglass, E. R., & Burke, R. J. (2002, Summer/Fall). Hospital restructuring and burnout. *Journal of Health & Human Services Administration*, 25(1/2), 89-114.
- Harris, K. J., James, M., & Boonthanom, R. (2005). Perceptions of organizational politics and cooperation as moderators of the relationship between job strains and intent to turnover. *Journal of Managerial Issues*, 17(1), 26-43.
- Hogg, M. A., & Terry, D. J. (2000). Social identity and self-categorization processes in organizational contexts. *The Academy of Management Review*, 25(1), 121-141.
- Howarth, A. (2003, December/January). HR issues mar most mergers. *Financial Management (CIMA)*, p. 7.
- Jack, A., & Weismann, G. (2006, October 5). One pill makes you larger: A wave of pharma mergers as new drug costs soar. *Financial Times*, London, p. 17.
- Joyce, A. (2005, February 27). Mergers can mean attitude adjustment; Combining cultures poses a challenge. *The Washington Post*, p. F6.

- Judge, T. A., Thoresen, C. J., Pucik, V., & Welbourne, T. M. (1999). Managerial coping with organizational change: A dispositional perspective. *Journal of Applied Psychology, 84*(1), 107-122.
- Kanter, R. M. (1987). Managing traumatic change: Avoiding the “Unlucky 13.” *Management Review, 76*(5), 23-24.
- Kode, G. V., Ford, J. C., & Sutherland, M. M. (2003). A conceptual model for evaluation of synergies in mergers and acquisitions: A critical review of the literature. *South African Journal of Business Management, 34*(1), 27-38.
- Kouzes, J., & Posner, B. (2002). *The leadership challenge* (3rd ed.). San Francisco: Jossey-Bass.
- KPMG. (2000). *The new art of the deal: How leading organizations realize value from transactions*. Retrieved on October 31, 2006, from <http://www.kpmg.ca/en/services/advisory/ta/documents/NewArtDeal.pdf>
- Lathrop, S. (2006). Presenteeism: What is it and why is it bad? *Reeves Journal, 86*(7), 27.
- Leedy, P. D., & Ormrod, J. E. (2001). *Practical research: Planning and design* (7th ed.). Upper Saddle River, NJ: Merrill Prentice-Hall.
- Lewinter, H. (2003, July 18). Stop stress before it begins taking over your workplace. *Business Journal Serving Fresno & the Central San Joaquin Valley*, pp. 23-25.
- Lin, C. Y., & Wei, Y. (2006, November). The role of business ethics in merger and acquisition success: An empirical study. *Journal of Business Ethics, 69*(1), 95-109.
- Lind, B., & Stevens, J. (2004). Match your merger integration strategy and leadership style to your merger type. *Strategy & Leadership, 32*(4), 10-17.

- Lotz, T., & Donald, F. (2006, March). Stress and communication across job levels after an acquisition. *South African Journal of Business Management*, 37(1), 1-8.
- Manshor, A. T., Fontaine, R., & Choy, C. S. (2003). Occupational stress among managers: A Malaysian survey. *Journal of Managerial Psychology*, 18(6), 622-629.
- Marks, M. L. (1997). Consulting in mergers and acquisitions: Interventions spawned by recent trends. *Journal of Organizational Change Management*, 10(3), 267-279.
- Marks, M. L. (1999). Surviving a merger. *Electric Perspective*, 24(6), 36-42.
- McGirt, E., Paskin, J., & Rosato, D. (2005, August 10). How to land on your own two feet: Losing a job needn't be the end of the world. *MONEY Magazine*. Retrieved April 5, 2007, from http://money.cnn.com/2005/08/04/pf/independence6_0509/index.htm
- Mendoza, M. (2005, April). Breaking point. *Human Resources - London*, 24-27.
- Mergers bring cloud, silver lining to Raleigh, NC area. (2005, January 5). *Knight Ridder Tribune Business News*, p. 1.
- Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.
- Messmer, M. (1997, July). Mergers and acquisitions and your career options. *Management Accounting*, 79(1), 10.
- Michie, S. (2002, January). Causes and management of stress at work. *Occupational and Environmental Medicine*, 59(1), 67-74.

- Mills, M., & MacKenzie, G. (2005, February 15). Have we got it wrong with stress? Retrieved December 15, 2005, from <http://www.personneltoday.com/27993>.
article
- Millward, L., & Kyriakidou, O. (2004). Linking pre- and post-merger identities through the concept of career. *Career Development International*, 9(1), 12-27.
- Mirvis, P., & Marks, M. (1992). Human issues in merger planning: Assessing and analyzing fit. *Human Resource Planning*, 15(3), 69-92.
- Moore, K. A., & Mellor, D. J. (2003). The role of management consultation, support, and coping on nurses' health during the stress of restructuring. *International Journal of Public Administration*, 26(14), 1621-1636.
- Moore, S., Grunberg, L., & Greenberg, E. (2006, September). Surviving repeated waves of organizational downsizing: The recency, duration and order effects associated with different forms of layoff contact. *Anxiety, Stress & Coping*, 19(3), 309-329.
- Moses, B. (2000). Give people belief in the future. *Workforce*, 79(6), 134-140.
- Mueller, D. R. (2005). Managing stress in the workplace and elsewhere. *Hudson Valley Business Journal*, 16(9), 25-27.
- Napier, N., Simmons, G., & Stratton, K. (1989). Communication during a merger: The experience of two banks. *Human Resource Planning*, 12(2), 105-122.
- National Center for Education Statistics (NCES). (2007). *Statistical standards program*. Retrieved May 3, 2007, from http://nces.ed.gov/statprog/2002/std5_1.asp
- Neumann, W. L. (2003). *Social research methods: Qualitative and quantitative approaches* (5th ed.). Boston: Allyn and Bacon.

- Nguyen, H., & Kleiner, B. H. (2003). The effective management of mergers. *Leadership and Organizational Development Journal*, 24(7/8), 447-455.
- O'Connell, S. (2005, April 10). Relax, it's not so hard to cut stress at work. *Sunday Times [Final 1 Edition]*, London, p. 9.
- Oram, J. (2003). Standing up to the competition? The future of European mergers. *Corporate Breakdown*, 1-10.
- Panchal, S., & Cartwright, S. (2001). Group differences in post-merger stress. *Journal of Managerial Psychology*, 16(5/6), 424-434.
- Peplow, R. (2005). Q & A: Tackling the issue of workplace stress. *Printing World*, 289(6), 20-21.
- Poole, A. (2000). The view from the floor: What KM looks like through the employee lens. *Knowledge Management Review*, 3(1), 8-10.
- Pulakos, E. D., Arad, S., Donovan, M. A., & Plamondon, K. E. (2000). Adaptability in the workplace: Development of a taxonomy of adaptive performance. *Journal of Applied Psychology*, 85(4), 612-624.
- Pulakos, E. D., Schmitt, N., Dorsey, D. W., Arad, S., Hedge, J. W., & Borman, W. C. (2002). Predicting adaptive performance: Further tests of a model of adaptability. *Human Performance*, 15(4), 299-323.
- Punch, K. F. (2005). *Introduction to social research: Quantitative and qualitative analysis* (2nd ed.). London: Sage.
- Quick, J., Quick, J., Nelson, D., & Hurrell, J. (1997). *Preventive stress management in organizations*. Washington, DC: American Psychological Association.

- Reade, Q. (2003, October 21). Demanding managers top cause of stress. *Personnel Today*, p. 101.
- Rowlett, R. D. (2005). *Mergers and acquisitions: A phenomenological case study*. Unpublished doctoral dissertation, University of Phoenix.
- Schweiger, D., & DeNisi, A. (1991). Communication with employees following a merger: A longitudinal field experiment. *Academy of Management Journal*, 34(1), 110-35.
- Scott, W. (2003). *Organizations: Rational, natural and open systems* (5th ed.). Upper Saddle River, NJ: Prentice-Hall.
- Selye, H. (1956). *The stress of life*. New York: McGraw-Hill.
- Shanley, A., & Bartels, N. (2006). Winning the capital investment game. *Pharmaceutical Manufacturing*, 5(9), 21-24.
- Siehl, C., & Smith, D. (1990). Avoiding the loss of a gain: Retaining top managers in an acquisition. *Human Resource Management*, 29(2), 167-185.
- Sikora, P. B., Beaty, E. D., & Forward, J. (2004). Updating theory on organizational stress: The asynchronous multiple overlapping change (AMOC) model of workplace stress. *Human Resource Development Review*, 3(1), 3-35.
- Spiers, C. (2003). Tools to tackle workplace stress. *Occupational Health*, 55(12), 22-26.
- Svensen, E., Neset, G. & Eriksen, H.R. (2007, April). Factors associated with a positive attitude toward change among employees during the early phase of a downsizing process. *Scandinavian Journal of Psychology*, 48(2), 153-159.
- Swanson, V., & Power, K. (2001). Employees' perceptions of organizational restructuring: The role of social support. *Work & Stress*, 15(2), 161-178.

Tackling workplace stress. (2005, February 23). *The Morning Star*, Vernon, BC, p. 19.

Terry, D. J., Callan, V. J., & Sartori, G. (1996). Employee adjustment to an organizational merger: Stress, coping and intergroup differences. *Stress Medicine*, 12(2), 105-122.

The Mathworks, Inc. (2008). *MATLAB® Statistics Toolbox™ 6 software*. Natick, MA: Author.

Thomas, R., & Dunkerley, D. (1999, June). Career downwards? Middle managers experiences in the downsized organization. *British Journal of Management*, 10(2), 157-169.

Top 50 pharmaceutical companies. (2005, September). *MedAdNews*. Retrieved on October 15, 2006, from http://en.wikipedia.org/wiki/Top_50_pharmaceutical_companies

U. S. Department of Labor. (2006). *Manager*. Retrieved on October 29, 2006, from http://www.dol.gov/search/Search.aspx?search_term=manager&offset=0&Image1.x=25&Image1.y=14

Van Knippenberg, D., Van Knippenberg, B., Monden, L., & de Lima, F. (2002). Organizational identification after a merger: A social identity perspective. *The British Journal of Social Psychology*, 41(2), 233-253.

Wanberg, C. R., & Banas, J. T. (2000). Predictors and outcomes to change in a reorganizing workplace. *Journal of Applied Psychology*, 85(1), 132-142.

Ware, J. E., Jr. (2005). *SF-36v2® Health Survey update*. Retrieved March 20, 2007, from <http://www.sf-36.org/tools/SF36.html>

- Ware, J. E., & Gandek, B. (1994). The SF-36[®] health survey: Development and use in mental health research and the IQOLA Project. *International Journal of Mental Health, 23*(2), 49-73.
- Ware, J. E., Kosinski, M., & Dewey, J. E. (2002). *How to score version 2 of the SF-36[®] Health Survey*. Lincoln, RI: QualityMetric Incorporated.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96*(3), 465-490.
- Weber, R. A., & Camerer, C. F. (2003). Cultural conflict and merger failure: An experimental approach. *Management Science, 49*(4), 400-415.
- Why too many mergers miss the mark. (1997, January 4). *The Economist, 342*(7998), 57-59.
- Williams, S., & Cooper, C. L. (1996). *Pressure Management Indicator*. Harrogate, England: RAD.
- Williams, S., & Cooper, C. L. (1998). Measuring occupational stress: Development of the Pressure Management Indicator. *Journal of Occupational Health Psychology, 3*(4), 306-321.
- Yost, J. S. (2002). Workplace stress related to organizational change in telecommunications management employees. *Dissertation Abstracts International, 62*(12), 6009DAI-B. (UMI No. 3036970)

APPENDIX A
LETTER OF INFORMED CONSENT

June 8, 2007

Dear Research Participant:

I am working on my doctoral degree in Management and Organizational Leadership at the University of Phoenix. For my doctoral project, I am investigating the effects of stress on managers in pharmaceutical industry organizations which have undergone M&A or restructuring within the last six months. The title of my project is *The Relationship Between Elements of Organizational Restructuring and Manager Stress: A Pharmaceutical Industry Study*. Because of your unique background as a manager in a pharmaceutical industry organization which has recently undergone M&A or restructuring, I would appreciate it if you would participate in this study.

For this study, I will ask you to complete three forms. The first is a questionnaire developed by the researcher, the second is a survey about your level of stress, and the third is a health survey.

I foresee minimal risk to you. This study has the potential benefit of helping you understand the stresses you faced during the organizational restructuring. No compensation will be offered for your participation. Participation is voluntary. You are under no obligation to participate, and you may withdraw at any time.

Strict confidentiality will be maintained. Any information that I obtain will be filed in a locked file cabinet or in my computer. In the report of the project, names will not be used, and data will be reported in the aggregate.

If you have any questions about this research, you may contact me by phone at (925) 313-9480 or email (paulgil@earthlink.net) at any time.

By signing this letter, you agree to participate in this study. Please keep a copy of the letter for your files. Thank you for your participation.

Sincerely,

XXXXXXXX

Doctoral Candidate

By signing this form I acknowledge that I understand the nature of the study, the potential risks to me as a participant, and the means by which my identity will be kept confidential. My signature on this form also indicates that I am 18 years old or older and that I give my permission to voluntarily serve as a participant in the study described.

Participant signature/Date

APPENDIX B

RESTRUCTURING ELEMENTS ANALYSIS TOOL (REAT)

RESTRUCTURING ELEMENTS ANALYSIS TOOL (REAT)

Name: _____ Date: _____

Company and position: _____

I am in a management position with _____ direct reports.

Gender: _____ Female _____ Male Age: _____

Years with company: _____ Years in current position: _____

Education: _____

Check the appropriate response:

This company experienced a:

_____ Merger

_____ Acquisition

_____ Restructuring

during the last _____ (how many?) months.

For this survey, please reflect upon your experiences with organizational restructuring. Circle the number which best indicates how you feel about the statement according to the following scale:

1	2	3	4	5	6	7
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree

During the restructuring of my company--								
1.	I was concerned about losing my job and finding another.	1	2	3	4	5	6	7
2.	I felt the company was not supporting me when they stopped offering me fair wages and job security.	1	2	3	4	5	6	7
3.	Job security was a significant concern for me.	1	2	3	4	5	6	7
4.	I was concerned about being separated from my co-workers.	1	2	3	4	5	6	7
5.	I worried about the prospect of changes in the relationships I might have with co-workers.	1	2	3	4	5	6	7
6.	Separation from my co-workers was a significant concern for me.	1	2	3	4	5	6	7
7.	I was concerned about what my level of compensation would be after the restructuring.	1	2	3	4	5	6	7

1	2	3	4	5	6	7
Strongly disagree	Moderately disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Moderately agree	Strongly agree

During the restructuring of my company--								
8.	I worried about the possibility of being forced to take another position at a lower salary.	1	2	3	4	5	6	7
9.	Compensation was a significant concern for me.	1	2	3	4	5	6	7
10.	I was concerned about being forced to accept a change in my career path.	1	2	3	4	5	6	7
11.	I worried about the loss of promotional opportunity within the organization.	1	2	3	4	5	6	7
12.	Career progression was a significant concern for me.	1	2	3	4	5	6	7
13.	I was concerned that the company would make restructuring details available.	1	2	3	4	5	6	7
14.	I worried about communicating with subordinates when no information was available about the restructuring.	1	2	3	4	5	6	7
15.	Lack of communication was a significant concern for me.	1	2	3	4	5	6	7
16.	I was concerned that the delay in communicating restructuring-related information would cause uncertainty and stress.	1	2	3	4	5	6	7
17.	I worried that infrequent communication about the restructuring would create rumors and misperceptions.	1	2	3	4	5	6	7
18.	Delay of information was a significant concern for me.	1	2	3	4	5	6	7
19.	I was concerned about answering the questions I faced from my subordinates about the restructuring.	1	2	3	4	5	6	7
20.	I worried about engaging employees in discussions about the restructuring and losing their trust.	1	2	3	4	5	6	7
21.	Inquiries from subordinates were a significant concern for me.	1	2	3	4	5	6	7
22.	I was concerned about the rumors I heard.	1	2	3	4	5	6	7
23.	I worried about managing and ending rumors and negative perceptions among my subordinates.	1	2	3	4	5	6	7
24.	Rumors were a significant concern to me.	1	2	3	4	5	6	7

APPENDIX C
PMI SAMPLE QUESTIONNAIRE

Note: The Pressure Management Indicator (PMI) is a proprietary instrument; therefore, copyright protection requires that only a small sample of the questions be included here.

PRESSURE MANAGEMENT INDICATOR QUESTIONNAIRE

Before starting the Indicator, please fill in the details below. Some of these details may not apply to you, but please complete as many of the questions as possible.

First name: _____ Surname: _____

Gender: (please check the appropriate box) Male Female

Date of Birth: (mm/dd/yyyy) _____

Job Title: _____ Organization: _____

Staff or Employee Number: _____

Grade: _____ Location: _____

Work Arrangement: Full-time Part-time Contract

Job Classification: Manual/Skilled Clerical/Admin/Other

Middle Management/Technical Senior Management/Professional

How many hours are you supposed to work in a typical week? _____

How many hours do you actually work in a typical week? _____

If you do work extra hours, what is your reason?

Through choice Expected to To get the job done Don't work extra hours

How long have you worked for your organization (to the nearest year): _____

Has any major event happened to you in the last 3 months which has had a bad effect on you, e.g., death of close relative, partner losing their job? Yes No

At the moment, would you say you are in good health? Yes No

Have you had any major illness in the last 3 months? Yes No

Are you subject to any ongoing negative pressures which started more than 3 months ago and are still having an impact? Yes No

Do you manage an ideal exercise program (e.g., 15-20 minutes vigorous exercise 3 times per week)?

Always Usually Sometimes Occasionally Never

Do you smoke? Yes No

If so, how many of each per day: _____ Cigarettes _____ Cigars

Do you drink? Yes No

If so, how many units of alcohol do you drink in an average week? _____
(Note: Half a pint of beer/lager, a glass of wine, or a single measure of spirits is each one unit.)

How many days of sick leave have you taken in the last three months? _____
How many of these sick days did you take because you yourself were sick, as opposed to other reasons such as a family member's being sick? _____

Please note the following when completing the rest of the questionnaire:

1. Base your answers on how you have felt during the last three months.
2. Please ensure that you answer every question.
3. Please **circle** the appropriate number on the scale of 1-6. Please do not check, underline, or cross through your choice.
4. Please answer the questions as they actually apply to you in your job. Do not answer theoretically. For example, in the "Sources of Pressure" section, if a question asks about pressure from managing your staff and you do not have anyone working for you, you should answer 1--i.e., no pressure. Do not answer on the basis of how much pressure you would expect to feel if you had to manage staff.
5. Be accurate and honest. If you make a mistake, cross it out and circle your new answer.

THESE GENERAL QUESTIONS HELP US TO UNDERSTAND MORE ABOUT YOU AND YOUR ORGANIZATION.

Please answer by circling the number which best represents your answer on the scale shown.

	1 Very strongly disagree	2 Strongly disagree	3 Disagree	4 Agree	5 Strongly agree	6 Very strongly agree
1. I often have too much to do in too little time.	1	2	3	4	5	6
2. My job improves my quality of life.	1	2	3	4	5	6
3. Reorganization places strain on staff for little or no benefit.	1	2	3	4	5	6
4. I really enjoy my work.	1	2	3	4	5	6
5. I worry about the future of my job.	1	2	3	4	5	6
6. I usually leave work on time.	1	2	3	4	5	6
7. I am strongly committed to the organization I work for.	1	2	3	4	5	6
8. There is too much change within my organization.	1	2	3	4	5	6
9. I have a great deal of control over my work.	1	2	3	4	5	6

APPENDIX D

SF-36v2[®] SAMPLE QUESTIONNAIRE

Note: The SF-36v2® is a proprietary instrument; therefore, copyright protection requires that only a small sample of the questions be included here.

SF-36v2™ Health Survey

This survey asks for your views about your health. This information will help you keep track of how you feel and how well you are able to do your usual activities.

Answer every question by selection the answer as indicated. If you are unsure about how to answer a question, please give the best answer you can.

1. In general would you say your health is: (Please answer by circling the number which best describes your answer.)

1	2	3	4	5
Excellent	Very Good	Good	Fair	Poor

2. Compared to one year ago, how would you rate your health in general now? (Please answer by circling the number which best describes your answer.)

1	2	3	4	5
Much better now than one year ago	Somewhat better now than one year ago	About the same as one year ago	Somewhat worse now than one year ago	Much worse now than one year ago

3. The following questions are about activities you might do during a typical day. Does your health now limit you in these activities? If so, how much? (Please answer by circling the number which best describes your answer.)

	1	2	3
	Yes, limited a lot	Yes, limited a little	No, not limited at all
a. Vigorous Activities, such as running, lifting heavy objects, participating in strenuous sports	1	2	3
b. Moderate Activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
c. Lifting or carrying groceries	1	2	3
d. Climbing several flights of stairs	1	2	3
e. Climbing one flight of stairs	1	2	3
f. Bending, kneeling, or stooping	1	2	3
g. Walking more than a mile	1	2	3
h. Walking several hundred yards	1	2	3
i. Walking one hundred yards	1	2	3
j. Bathing or dressing yourself	1	2	3

4. During the *time of organizational restructuring*, how much of the time have you had any of the following problems with your work or other regular daily activities as a *result of your physical health*? (Please answer by circling the number which best describes your answer.)

	1 All of the time	2 Most of the time	3 Some of the time	4 A little of the time	5 None of the time
a. Cut down on the amount of time you spend on work or other activities	1	2	3	4	5
b. <i>Accomplished</i> less than you would like	1	2	3	4	5
c. Were limited in the <i>kind</i> of work or other activities	1	2	3	4	5
d. Had <i>difficulty</i> performing the work or other activities (for example, it took extra effort)	1	2	3	4	5

APPENDIX E
PERMISSION TO USE THE PMI

PMI RESEARCH AGREEMENT made on 9 November 2006 between Resource Systems Ltd (*"the Publisher"*)

AND

Name: Paul Gil (*"the Researcher"*)
Email: paulgil@earthlink.net
University: University of Phoenix

Now it is mutually agreed between the parties hereto as follows:

The Publisher grants to the Researcher the privilege to reproduce the Pressure Management Indicator for research purposes only (the *"PMI"*) subject to the following conditions to which the Researcher hereby agrees:

1. The Researcher recognises that s/he does not own the copyright of the PMI, and that the PMI is to be used for his/her own research purpose only, and never under any circumstances for any commercial, or other use unspecified in this agreement, unless the Researcher first obtains written permission to do so from the Publisher.
2. The PMI is for one research project only as agreed with the Researcher and any further use of the PMI must first be agreed and formal permission given by the Publisher.
3. When using the paper & pencil version of the questionnaire, a copy of the data must be provided to the Publisher on a disk file in a format suitable for use with a standard statistics, database or spreadsheet programme. We do not need details of the subjects' names or organisation but would like all other demographic information, together with the individual items and subscales. We would also encourage the Researcher to publish their findings, and if possible, provide a link to the Publishers website (www.resourcesystems.co.uk).
4. The Researcher's PMI data will be added to the Publisher's normative database of over 50,000 people and used for statistical purposes and general reporting. The data will not be identifiable and will not be given to any third party.
5. The PMI must be used in its entirety and permission will not be granted to use a subset of the questionnaire.
6. The Researcher shall ensure that the following notice shall appear on the cover page of each copy of the PMI:

© Copyright Stephen Williams, 2000. Permission to reproduce this material has been given by the publisher Resource Systems Ltd, 80 Fleet Street, London, EC4Y 1ET, UK.. All rights reserved.
7. The Researcher agrees to exercise the utmost vigilance in protecting the Publisher's copyright privileges on the PMI. In particular the Researcher guarantees that unauthorised persons shall not be given access to any of these materials. Unauthorised use by any other third party is strictly prohibited and is in breach of this agreement and copyright regulations.
8. If for any reason it is necessary for the Researcher not to continue with the research or to delay it materially, s/he will inform the Publisher of the discontinuation or delay as soon as possible.

Signed by the Researcher

Paul Gil

Date

9 NOVEMBER 2006

Signed by Resource Systems, Ltd

Cotton

Date

11 JANUARY 2007

APPENDIX F
PERMISSION TO USE THE SF-36v2®
HEALTH SURVEY



LICENSE AGREEMENT

License Number: F1-042707-30973

This License Agreement is entered into, by, and between QualityMetric Incorporated (the "Licensor"), 640 George Washington Highway, Lincoln, RI 02865 and University of Phoenix (the "Licensee"), Paul Gil, 277 Colwood Circle, Martinez, CA, 94553.

Licensor owns or has the exclusive commercial rights to the survey(s) named below. The Licensor is engaged in the business of licensing the rights to use the survey(s), including survey items and responses, scoring algorithms, and normative data (the "Intellectual Property") to organizations wishing to use the Intellectual Property either in conjunction with projects or studies or as part of a product or service offering.

Upon payment of the fees described in the sections below captioned "License Fee" and "Payment Term", this agreement will authorize Licensee to reproduce the survey(s) in the languages indicated below, perform data collection, perform data entry, use the scoring algorithm and normative data published in the manuals, in connection with the study indicated below. Licensor understands Licensee may publish the results for the study indicated below.

Licensee is the only licensed user under this License Agreement, of the survey(s) indicated below (the "Licensed Survey(s)") in the language(s) indicated below. Licensee may administer an unlimited amount of survey administrations from May 7, 2007 through May 7, 2008 using any language combination of the survey(s) listed below.

- SF-36v2™ Health Surveys

United States (English) – Standard Recall

This license cannot be assigned or transferred, nor can it be used by the Licensee to obtain data to be used in studies other than "Restructuring Stress".

This agreement, including the attachment(s), contains the entire understanding of the parties with respect to the subject matter contained herein, and supersedes all prior written or oral communications. This agreement may not be modified or amended except by an instrument in writing signed by both parties.

Trademark and Copyright Reproduction

Licensee agrees to reproduce the appropriate copyright and trademark symbols on all written or displayed versions of the Licensed Survey(s) and/or the results attributed to the Licensed Survey(s), as indicated in the footer of the licensed surveys distributed by QualityMetric Incorporated.

Records and Certification of Statements

Licensee shall maintain accurate records containing information sufficient to verify the completeness and accuracy of the number of survey administrations completed each year. Licensor shall have the right, on reasonable advance notice to the Licensee, during usual business hours, to examine such records for the sole purpose of verifying the completeness and accuracy of the number of survey administrations completed each year, such examination is to be conducted by employees of the Licensor or other representatives selected by the Licensor and reasonably acceptable to the Licensee. In the event that such examination shall disclose the survey administration exceeds the maximum number of survey administrations allowed to the Licensee, the Licensee shall immediately pay the Licensor an amount equal to such understated amount and Licensee shall reimburse Licensor for its costs and expenses incurred in conducting, or having conducted, such examination.

April 30, 2007

Customer Initials: JA

Date Signed: 5/1/07

Page 1 of 3



LICENSE AGREEMENT

License Number: F1-042707-30973

Proprietary Rights

The Intellectual Property and any and all copyrights or rights under the trade secret laws of any jurisdiction shall be and remain at all times the property of the Licensor. The Licensee shall have no rights, title, or interest in the Intellectual Property except as expressly provided in this Agreement.

Confidentiality

The Licensee acknowledges that the Intellectual Property is a valued asset of the Licensor, that the Intellectual Property is of great commercial value to the Licensor, and that the value of the Intellectual Property would be significantly impaired by the unauthorized distribution or use of the Intellectual Property. The Licensee shall protect the Intellectual Property from unauthorized use by its employees, agents and customers and shall limit the use to the permission granted to Licensee by this Agreement.

Disclaimer of Warranty

The Licensee understands and acknowledges that a complex and sophisticated product such as the Intellectual Property is inherently subject to undiscovered defects. The Licensor cannot and does not represent or warrant to the Licensee that the Intellectual Property is free from such defects, that operation of the Intellectual Property will be uninterrupted or error-free, or that its results will be effective or suitable with respect to any particular application. Furthermore, the Licensor does not represent or warrant that the Intellectual Property is capable of industrial realization or commercial exploitation, the risks of which are being assumed solely by the Licensee. THE INTELLECTUAL PROPERTY IS LICENSED AS-IS, AND THE LICENSOR DISCLAIMS ANY REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY REPRESENTATIONS OR WARRANTIES AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, RESPECTING ANY OF THE INTELLECTUAL PROPERTY OR ANY OTHER MATTER RELATED TO THIS AGREEMENT.

Term and Termination

This License Agreement shall be effective from May 7, 2007, the date the Licensee will start reproducing the Licensed Survey. This License Agreement shall terminate on May 7, 2008, the date the Licensee will score the last Licensed Survey.

Licensor may terminate this Agreement in the event of a material breach of its terms by Licensee or any of its agents by written notice delivered at least fifteen (15) days prior to the effective date of the termination.

License Fee

This License ("the License") is royalty free. This License is limited to the number of survey administrations in the languages indicated on the first page of this License.

Administration Fee

The administration fee for the licensed surveys ("the License") is \$100.00.

This License is limited to the languages indicated on the first page of this License.

Payment Terms

Licensee shall pay \$100.00 upon execution of this License Agreement, per the enclosed invoice.

April 30, 2007

Customer Initials: JH

Date Signed: 5/1/07

Page 2 of 3



LICENSE AGREEMENT

License Number: F1-042707-30973

Scoring Manuals

Licensee is required to have purchased or purchase the manuals indicated below for the Licensed Survey(s) indicated on the first page of this License.

- How to Score Version 2 of SF-36® Health Survey

Other Services

In addition to the rights described above, Licensee may access Licensor's Online Scoring Service for an additional fee.

EXECUTED, as of the date set forth in the paragraph captioned Terms and Termination, by the duly authorized representatives as set forth below. By Executing this License Agreement, the undersigned Licensee represents that it is an organization that will only use the Licensed Survey(s) in the languages indicated on the first page and according to the terms of this License to obtain data for un-funded scholarly research.

Licensee

Paul Gil
277 Calwood Circle
Martinez, CA 94553

Licensor

QualityMetric Incorporated
640 George Washington Highway
Lincoln, RI 02865

Signature: _____

Name: _____

Title: _____

Date: _____

Paul Gil

PAUL J. GIL

STUDENT

5/1/07

Signature: _____

Name: _____

Title: _____

Date: _____

Dawn Giles

Dawn Giles

V.P. Marketing & Sales

April 30, 2007

Customer Initials: *PG*

Date Signed: *5/1/07*

Page 3 of 3