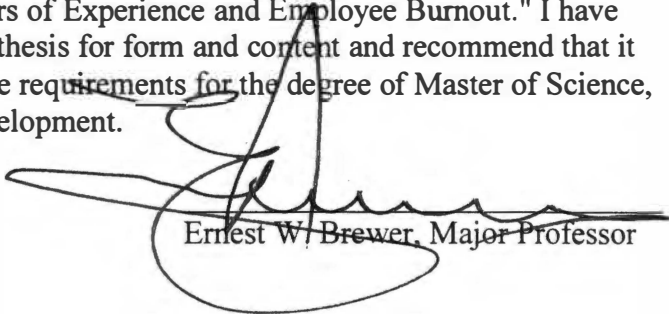


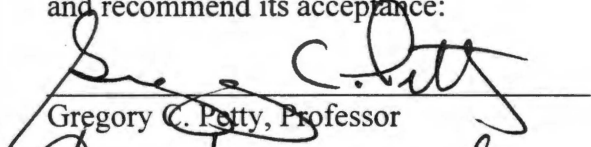
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I am submitting herewith a thesis written by Leslie Shapard entitled "A Meta-Analysis of the Relationship Between Age or Years of Experience and Employee Burnout." I have examined the final paper copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Human Resource Development.

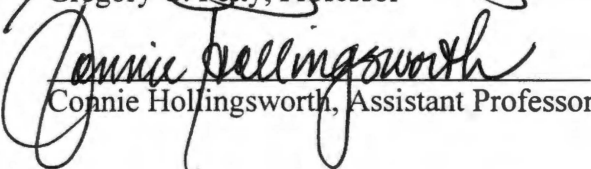


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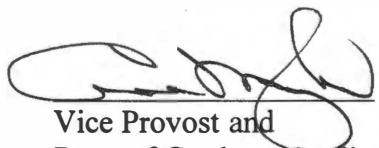


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**A META-ANALYSIS OF THE RELATIONSHIP BETWEEN
AGE OR YEARS OF EXPERIENCE AND EMPLOYEE BURNOUT**

**A Thesis
Presented for the
Master of Science Degree
The University of Tennessee, Knoxville**

**Leslie Shapard
August 2002**

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ABSTRACT

The purpose of this study was to investigate the relationship between age or years of experience and employee burnout by performing a meta-analysis on research studies that present findings on relationships between employee burnout and age or years of experience. The problem has practical significance in that the appropriateness of approaches to addressing employee burnout may depend on whether age or years of experience is a factor related to burnout.

The researcher identified criteria for inclusion of studies in the meta-analysis and performed a literature search on burnout and employee age and burnout and years of experience. Studies included in the meta-analysis were coded by study characteristics, including measurement of burnout and subject characteristics and study condition characteristics. Using statistical software the researcher performed meta-analyses on the data, including searches for moderators.

Results indicated that there was a small negative correlation between employee age and emotional exhaustion, one of the components of burnout, at least for employees in some fields in the United States, and possibly a small negative correlation between years of experience in a field and emotional exhaustion. The researcher recommended research in longitudinal studies and research using nonlinear tests for correlations.

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CHAPTER I

INTRODUCTION

Employee burnout has been defined as a syndrome of job stress consisting of three components: emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach & Jackson, 1984). It has been particularly noted and studied in human services and other “helping” professions involving extensive direct client contact, but it can be present in other types of work, although perhaps with less differentiation among components (Maslach, Jackson, & Leiter, 1996).

Numerous research studies have considered age or years of experience in a job or a field as factors possibly related to employee burnout. Some studies have found no correlation between age or years of experience and burnout. Others have found such correlations. For example, Laub (1998) concluded from a study of isolation as a predictor of burnout among secondary school teachers that younger teachers were at greater risk of burnout than older teachers were. However, Konert (1997) concluded from a study of burnout, perceived job stress, job satisfaction, and coping among 220 middle school teachers that teacher burnout levels were not different for younger and older teachers.

Differences in findings among studies might result from different characteristics or circumstances of subjects. For example, conflicting results from the studies by Laub (1998) and Konert (1997) might have resulted from the difference in level taught (i.e., secondary or middle school) by teachers in their samples. However, conflicting results among studies also might result from sampling error or other errors (Hunter & Schmidt,

1990). Meta-analysis of studies with apparently conflicting results can be used to explain differences in findings and to draw general conclusions.

Whether employee burnout is related to age or years of experience might have important consequences for employing organizations as well as for employees. Some studies have found correlations between burnout and (a) absenteeism, (b) intention to quit, (c) actual turnover, and (d) decreased job performance. Burnout could negatively affect the health and personal lives of the employees experiencing it as well as services received by their patients, students or clients (Duquette, K  rouac, Sandhu, & Beaudet, 1994, p. 338; Maslach et al., 1996; Pedrabissi, Rolland, & Santinello, 1993; Parker & Kulik, 1995).

If younger employees are more likely to experience burnout than older employees, it might be beneficial for employing organizations to take preemptive measures against burnout, such as aiding employees in developing coping skills (Stanton, Howard, Iso, & Steppo, 1998). If employees who are new to a type of work or a particular position are more likely to experience burnout than more experienced employees, it might be beneficial for organizations hiring new employees, and individuals entering new careers, to take similar preemptive measures against burnout in preparation for employment and orientation.

Further, if burnout is negatively correlated with time in a particular position or with a particular organization, longer job terms may be advantageous (Stanton et al., 1998). It might be beneficial for employees to choose to remain with an employer for

long periods of time rather than to make frequent job changes, and it might be advantageous for employers to encourage employees to stay with an organization.

Purpose of Study

Due to apparently conflicting results in studies, it is not known whether age or years of experience is related to employee burnout. The problem has practical significance in that the appropriateness of approaches to addressing employee burnout may depend on whether age or years of experience is a factor related to burnout. The purpose of this study is to investigate the relationship between age or years of experience and employee burnout by performing a meta-analysis on research studies that present findings on relationships between employee burnout and age or years of experience.

Operational Definitions

Definitions 1-5 are based on the writings of Maslach and Jackson (1984) and on common usage in research studies on burnout. Definitions 6-9 are based on common usage in research studies that include findings on relationships between age or experience and burnout.

1. **Burnout:** A syndrome of job stress, consisting of one or more factors that may include emotional exhaustion, depersonalization, and reduced personal accomplishment.
2. **Components or dimensions of burnout:** Emotional exhaustion, depersonalization, and (reduced) personal accomplishment for human services workers and educators. Exhaustion, cynicism, and (reduced) personal efficacy for employees in other fields.
3. **Depersonalization:** An attitude or response toward the people with whom one works, particularly patients, students, or clients; the response is characterized by Maslach & Jackson (1984) as “unfeeling and callous” (p. 134).

4. **Emotional exhaustion:** Feelings of being emotionally exhausted or emotionally drained as a result of interactions with others, particularly patients, students, or clients.
5. **Personal accomplishment:** Feelings of competence or achievement. Reduced personal accomplishment is a component of burnout.
6. **Age:** The age of an employee.
7. **Years of experience (type of job):** The number of years of experience in the type of job or field that the employee had at the time the survey was given.
8. **Years of experience (position):** The number of years of experience in the particular position the employee had at the time the survey was given.
9. **Years of experience (organization):** The number of years of experience in the employing organization that the employee had at the time the survey was given.

Research Questions

Three research questions were considered. These questions were

1. Is there an overall relationship between employee age and burnout?
2. Is there an overall relationship between years of experience in a type of job and burnout?
3. Is there an overall relationship between years in a particular position and burnout?

Hypotheses

Data were collected to test three hypotheses. These hypotheses were

1. Older employees experience less burnout than do younger employees.
2. Employees who have worked in a type of job or field for longer periods of time experience less burnout than do employees who have worked in that type of job or field for shorter periods of time.
3. Employees who have worked in a particular position for longer periods of time experience less burnout than do employees who have worked in a particular position for shorter periods of time.

Limitations

There were limitations to the meta-analysis. The limitations were

1. The results of the meta-analysis depended on the results of the studies on which it was based. Thus, the study was limited by its dependence on the data provided by researchers.
2. This study was limited by availability of studies through regular Interlibrary Services loans at The University of Tennessee, Knoxville, and the cost of unpublished research available from Dissertations Express.

Delimitations

This research was delimited to meta-analysis of studies with certain characteristics. These characteristics were

1. The studies used quantitative measures of employee burnout.
2. The studies used quantitative measures of employee age or years of experience.
3. The studies presented either findings that there was a relationship between age or years of experience and burnout or one or more components of burnout, with quantitative data included; or findings that there was not a relationship between age or years of experience and burnout or one or more components of burnout.
4. It was possible to determine a correlation coefficient, either directly or through transformation, from the studies.

Assumptions

This meta-analysis included certain assumptions. These assumptions were

1. It was possible for surveys to provide measurable data about a syndrome or condition termed burnout.
2. Respondents to surveys would give honest answers to survey questions, including questions about age and years of experience.

Summary

Some studies have found correlations between burnout and employee age or years of experience, and other studies have found no correlations between age or experience and burnout. Meta-analysis of studies with apparently conflicting results can be used to explain differences in findings and to draw general conclusions. Whether employee burnout is related to age or years of experience might have important consequences for employing organizations and for employees. This study was a meta-analysis of research findings on possible relationships between age or employee experience and burnout.

CHAPTER II

LITERATURE REVIEW

A review of the literature was divided into these areas for discussion: (a) burnout and its components, and (b) an overview of meta-analysis.

Burnout and Its Components

The Maslach Burnout Inventory

Freudenberger first mentioned burnout in the work place in the literature in 1974, but the term has most often been associated with the work of Maslach. In 1981 after several years of research on burnout, Maslach and Jackson published the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1984, p. 137). They defined burnout as “a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment that can occur among individuals who work with people in some capacity” (p. 134). The inventory produced scores for each component, with no combined score (Hargrove, 1990).

Maslach and Jackson (1984) began using the term “burnout” after learning that legal service attorneys used it to describe the occurrence of emotional stress related to service work with people (p. 135). They later learned the same term was being used by people who worked in other service occupations, including teachers and drug counselors.

The original MBI was designed for human services employees; a second version was adapted for educators; and a third, general, version was created for other workers (Maslach, 1999). At the time of the development of the original version, some concerns related to burnout were that interacting extensively with clients in human services type

work could cause emotional exhaustion and that service providers could depersonalize their clients (Maslach et al., 1996). Survey items are statements of feelings or attitudes. The respondent marks a number representing the frequency he or she experiences that feeling or attitude. Respondents originally marked numbers for both frequency and intensity of their experiences of the feelings. Due to evidence of fairly high correlations between frequency and intensity, the intensity element has been removed from the instrument (Maslach et al., p. 11). Early research reported data for both frequency and intensity.

The MBI version for human services workers has become known as the Human Services Survey (MBI-HSS). In the MBI General Survey (MBI-GS), exhaustion (without a specific reference to emotional exhaustion), cynicism, and personal efficacy replaced emotional exhaustion, depersonalization, and personal accomplishment. Also, references to working with people were eliminated to make the measure more appropriate for workers in a variety of job types (Maslach et al., 1996). Some recent definitions of burnout also have dropped references to work with other people. The educators version of the MBI (MBI-ES) was similar to that for human services workers, with references to “recipients” of services changed to “students” (Maslach et al.).

There have been other differences in versions or adaptations of the MBI. There have been different language versions of the MBI, including Dutch (Van Horn, Schaufeli, & Enzmann, 1999), Chinese (Tan & Akhtar, 1998), and Hebrew (Dekel & Peled, 2000). Before development of the MBI-ES, the original MBI sometimes was adapted for particular studies with the word “recipients” changed to “students” (Meadow, 1981). The

MBI has been adapted for workers in particular occupations besides human services or education, such as for sports officials (Rainey, 1999). Further, some studies have relied on the emotional exhaustion or exhaustion component of the MBI, by itself, as an indicator of burnout (Tuuli & Karisalmi, 1999).

Two reviewers reviewed the MBI-HSS and MBI-ED in the *Mental Measurements Yearbook 10*. According to both reviewers, the MBI manual indicated adequate or reasonable evidence of convergent and discriminant validity and reliability (Hargrove, 1990; Sandoval, 1990). One reviewer deemed future studies on the MBI's reliability and validity necessary (Sandoval).

According to Koeske and Koeske (1989), the data from the literature generally supported the reliability and validity of the MBI, but the data from the literature and from studies they conducted indicated greater support for the reliability and validity of the emotional exhaustion subscale itself as a measure of burnout rather than for the three-subscale structure. For this reason and for theoretical reasons, they recommended using only the emotional exhaustion subscale as a measure of burnout.

Other research supported the three-factor structure. In a study of Australian teachers, Pierce and Malloy (1989) used factor analysis to conclude that the MBI was reliable and valid. Byrne (1993) tested the factorial validity of the MBI for teachers and concluded that with the exception of two items, the MBI was reliable and valid, with a three-factor structure supported. Abu-Hilal (1995) tested the structure of the MBI for Jordanian and Emirati teachers and also concluded that the MBI was valid and reliable for teachers in those countries. Yamana and Drake (1995) found the three-factor model a

better fit to the data if four items were deleted; they found that with this model reliability and construct validity were supported. In a study of the factorial validity of the MBI-GS Schutte, Toppinen, Kalimo, and Schaufeli (2000) found that the three-factor model fit data from Finnish, Swedish, and Dutch employees in various fields of employment better than a one-factor or two-factor model.

Other Measures of Burnout

Some studies have used other existing measures of burnout, such as the Staff Burnout Scale for Health Professionals, which like the MBI, has consisted in a 7-point Likert scale (Rich & Rich, 1987). Other studies have used measures of burnout developed especially for the research to be conducted (Hock, 1988).

Meta-Analysis

Meta-analysis is a quantitative approach to analyzing multiple study findings. A 1976 journal article by Glass was the first publication on meta-analysis and the first article to “emphasize meta-analysis as a fully general set of methods that should be applied to the integration of literatures in all areas of research” (Hunter & Schmidt, 1990, p. 16). Glass, McGaw, and Smith (1981) described meta-analysis as “the statistical analysis of the summary findings of many empirical studies” (p. 21).

A meta-analysis of several study findings should be conducted with an approach similar to those of the individual studies on which it is based. Wolf (1986) stated, “Each data point used for analysis is obtained from an individual study rather than from an individual subject, as is typically done in a traditional research study” (p. 11).

Thus, if the statistics found in the studies were correlation coefficients between two variables, those correlation coefficients would be averaged (whether weighted for sample size or not) for an overall correlation coefficient.

Advantages of Meta-Analysis

Two traditional approaches to the processing of multiple study findings have been the narrative review approach and the voting or vote-counting method. The narrative review approach has been non-quantitative; the reviewer has described and discussed findings from several or many studies (Hunter & Schmidt, 1990). Because of the non-quantitative nature of the method, it has been difficult or impossible for a reviewer to accurately and adequately represent a large number of studies (Hunter & Schmidt,). A reviewer could select only a few studies to describe, but a few studies might be unrepresentative (Hunter & Schmidt). Further, the selected few studies could reflect the reviewer's biases, including biases about the quality of the studies (Wolf, 1986). Additionally, with narrative reviews there has been a great deal of room for subjective weighting and interpretation of studies (Wolf).

Because meta-analysis has been quantitative, a large number of studies could be included in the analysis, thus providing a way to avoid some reviewer bias that can occur in selection of studies and interpretation of sometimes varying study results (Wolf, 1986). Because meta-analysis has provided for the elimination of studies for consideration, chances that the findings were not representative were decreased (Wolf).

The voting approach has consisted primarily of a counting of non-significant, significant positive, and significant negative findings (Hunter & Schmidt, 1990).

Conclusions have been based on which voting category had the largest number of findings. Because the approach has been quantitative, large numbers of studies could be included. However, this approach could lead to false conclusions, as in the case of a large number of studies, each with low statistical power (Hunter & Schmidt; Wolf, 1986). To illustrate, suppose that of 30 correlational studies based on small samples, nine had findings of a significant positive correlation between two variables, one had a finding of a significant negative correlation, and 20 had a finding of no correlation. However, in each of these 20 cases with findings of no correlation, the correlation coefficient was positive, but it was too slight to be considered significant because of the sample size. The voting method alone would lead the reviewer to the conclusion that, overall, there was no correlation between the variables. Thus, with the voting method, the repeated low statistical power of studies with small samples could make it likely that a false null hypothesis would not be rejected. Meta-analysis has had an advantage; additional positive (or negative) correlation coefficients or effect sizes that were too small to be counted significant would make it more likely that a false null hypothesis would be rejected.

Criticisms of Meta-Analysis

Although meta-analysis has not shared the previously mentioned flaws of narrative review and voting approaches, it has been criticized on several counts. One criticism has been that meta-analysis “mixes apples and oranges” by combining findings from different types of studies with different samples and even different variables (Hunter & Schmidt, 1990, p. 516). If a meta-analysis of findings of such different studies were used to draw conclusions about the apples in and by themselves, the approach would be

flawed. However, there have been ways to conduct meta-analysis without drawing this type of flawed conclusion. In some cases the research questions and the conclusions drawn could be construed broadly. For example, if the question was about fruit rather than any particular type of fruit, then apples and oranges could be mixed. (Schwarzer, 1989). Or, after a meta-analysis was conducted on findings based on differing variables, separate meta-analyses on findings could be conducted for each of the variables (Hunter & Schmidt, p. 481). For example, after a meta-analysis on fruit was performed, separate meta-analyses on apples and oranges could be performed.

A second criticism of meta-analysis has been that findings of poorly constructed studies have been included and counted along with those of acceptable studies. The advantage of avoiding one type of reviewer bias by including all available findings has been noted, and the disadvantage of not automatically eliminating certain studies can be overcome. For example, separate meta-analyses could be performed for studies that met some recognized criterion of acceptable research quality, such as method of selection of subjects, and studies that did not meet that criterion. Differences in findings may be attributable to differences in study adherence to recognized procedures.

Another criticism of meta-analysis has been that studies that were easily located and retrieved by a reviewer were likely to be unrepresentative of all studies conducted, since studies with findings of no effect have been less likely to be published or presented than have studies with findings of an effect. This often has been known as the “file drawer problem” (Hunter & Schmidt, 1990). In cases in which the meta-analysis has indicated a statistically significant finding of an effect across studies, a formula can be

used to determine the number of non-retrieved studies with zero-effect findings that would have to be added to the meta-analysis to make the overall finding statistically insignificant at the same p -level (Hunter & Schmidt).

Different Methods of Meta-Analysis

Different methods of meta-analysis have been recommended by different sources. In the case of studies in which findings have been correlation coefficients, Glass et al. (1981) suggested a formula for arriving at a mean correlation coefficient by dividing the sum of the individual studies' correlation coefficients by the number of studies. Hunter and Schmidt (1990) recommended correcting for sampling error in deriving an estimate of the population correlation. One method has been to weight correlations by the number of subjects. Thus the sum of the multiples of the number of persons in each study by the study's correlation coefficient is divided by the sum of the number of persons in all studies. Hunter and Schmidt called this a "bare bones" meta-analysis and also favored methods for correcting for other types of errors, including those related to dichotomization and to range variation (p. 94). According to Wolf (1986), use of both weighted and unweighted means might be warranted. He noted that many researchers have included both in their findings.

Hedges and Olkin (1985) also supported inclusion of a weighted mean. One difference between their approach and that of Hunter and Schmidt (1990) has been that Hedges and Olkin favored using Fisher's z -transformation, while Hunter and Schmidt did not. Wolf (1986) noted that many researchers have included both untransformed and transformed correlations in their findings (p. 29).

Another difference between Glass et al. (1981) and Hunter and Schmidt (1990) has related to the procedure of conducting separate meta-analyses for studies with different study characteristics. Glass et al. advocated coding studies for both methodological and substantive characteristics to analyze differences in findings among studies. They gave correlations between “teacher indirectness” and “pupils’ learning” being higher for secondary school students than for elementary students as one example (p. 70).

Hunter and Schmidt (1990) criticized coding for study characteristics, particularly uses of large numbers of coded characteristics. They also criticized as “frivolous” the meta-analyses of subgroups according to characteristics that were commonly coded but not already expected to be moderator variables (p. 467). Such moderator variables were factors that, due to theory or previously acquired knowledge, were expected to explain variation among study findings. They further noted that in a search for true moderator variables, if the number of studies analyzed was small, study characteristics that were considered as potential moderators could by chance correlate with sampling errors.

Tests for homogeneity could be used to determine whether separate meta-analyses were warranted. Wolf (1986) said that if a meta-analysis yielded estimates that were heterogeneous, different studies may not have tested the same hypothesis, and he noted that both Hedges, in a 1982 article, and Hunter, Schmidt, and Jackson (1982), suggested that studies with heterogeneous findings should not be included in a single meta-analysis. However, Wolf also found support, even from Hedges, for using findings from a meta-analysis of heterogeneous study results.

Summary

A review of the literature on burnout indicated that the validity and reliability of the MBI have been supported by research. Versions of the MBI have been developed for human service workers, educators, and other workers. The MBI has been adapted for workers in several countries. Other measures of burnout, such as the Staff Burnout for Health Professionals, have been developed.

A review of the literature on meta-analysis indicated that meta-analysis has had several advantages over other methods of analyzing multiple study findings. Different sources have recommended different methods of meta-analysis, and the review of the literature has provided support for including more than one method in a single meta-analytical study.

CHAPTER III

METHODOLOGY

The methodology for this meta-analysis included (a) a literature search on burnout and employee age or years of experience, (b) identification of criteria for inclusion and exclusion, (c) efforts to include both published and unpublished studies, (d) coding of studies and variables, and (e) data analysis. Figure 1 is a flowchart of the entire process of meta-analysis.

Literature Search

The PsychINFO database (1967-2000) was searched on the term “burnout” and one or more of the terms “age,” “years,” or “experience.” Searches on the same combination of terms were performed on the Educational Resources Information Center (ERIC) database (1992-2000), Social Sciences Abstracts (2/83-10/2000), and Sociological Abstracts (1986-2000). Duplicate entries, entries for studies that did not appear to provide relevant research findings, and entries that did not indicate that data on differences in subjects’ ages or years of experience were considered were eliminated from consideration in the meta-analysis.

Criteria for Inclusion and Exclusion

Research studies were selected for inclusion if they met all the following criteria:

1. The studies used quantitative measures of employee burnout.
2. The studies used quantitative measures of employee age or years of experience.

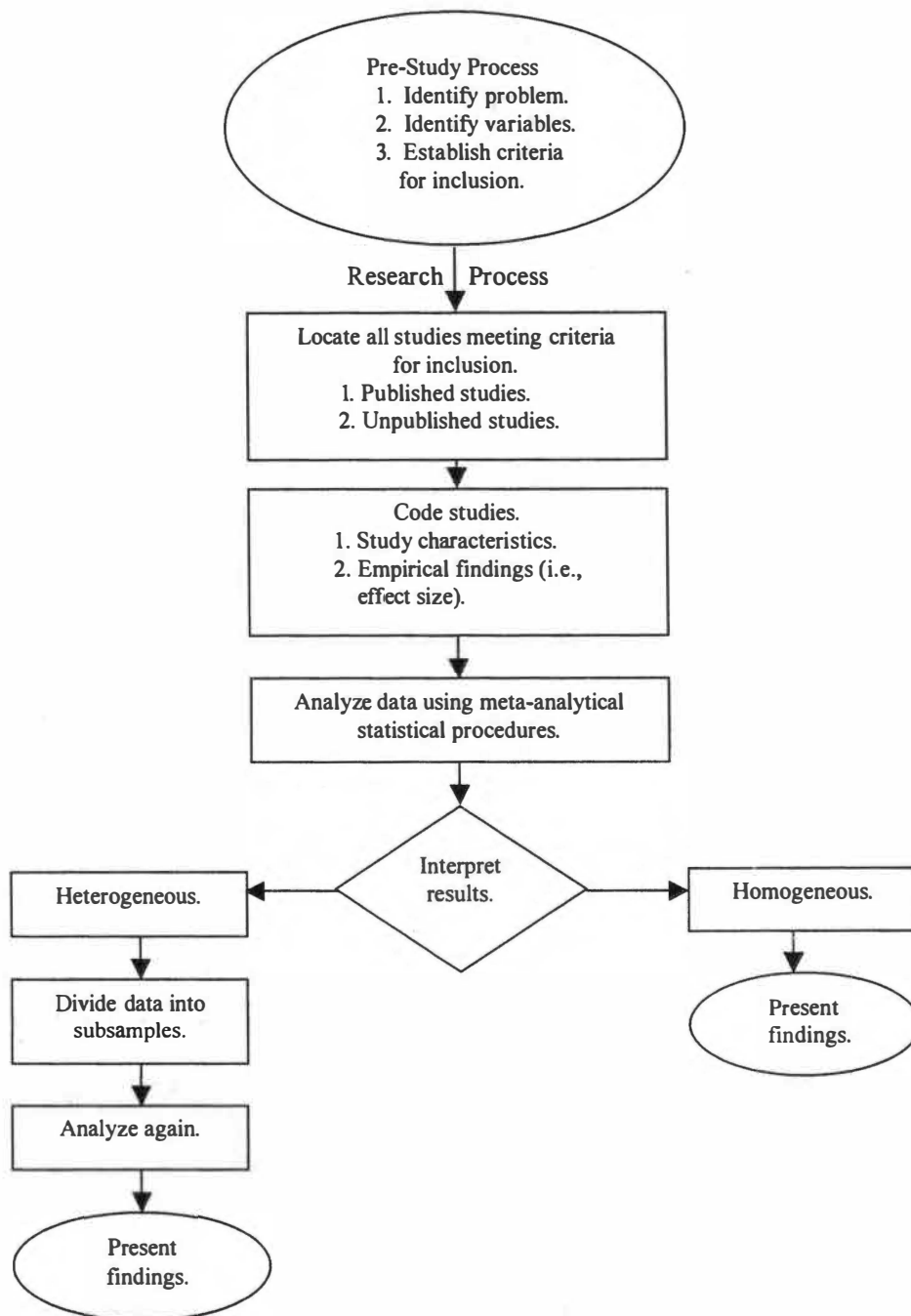


Figure 1. The process of meta-analysis.

Source: E. W. Brewer and J. McMahan, "Using Meta-Analysis as a Research Tool in Making HR Decisions." Unpublished manuscript, 2002.

3. The studies presented either (a) findings that there was a relationship between age or years of experience and burnout or one or more components of burnout, with quantitative data included; or (b) findings that there was not a relationship between age or years of experience and burnout or one or more components of burnout.
4. It was possible to determine a correlation coefficient, either directly or through transformation, from the studies.

Research studies were excluded if they met one of the following criteria:

1. They were not available for analysis in the 9-month period of this meta-analysis.
2. They were not published in a language that could be read without translation.
3. Costs associated with retrieval of the studies precluded obtaining the studies.

Studies were not excluded on the basis of judgments of the quality of the research, in accordance with Glass et al. (1981) and Hunter and Schmidt (1990). However, studies were eliminated after retrieval if they did not meet one of the inclusion criteria listed above.

Published and Unpublished Studies

Efforts were made to include both published and unpublished studies. Searches of the PsychINFO, ERIC, Social Sciences Abstracts, and Sociological Abstracts databases provided unpublished dissertations as well as published articles.

Coding Studies and Variables

Studies were coded by study characteristics, including measurement of burnout and subject characteristics and study condition characteristics. The characteristics coded were (a) year of study, (b) source of data, (c) occupation, (d) status of full-time or part-time, (e) gender, (f) country, (g) nationwide or regional if U.S., (h) burnout measure, (i)

mean age, (j) mean time in job, (k) instrument type, (l) selection, (m) classification of age and burnout or tenure and burnout, (n) meaning of time in job, (o) MBI or adapted MBI measure used, (p) grouping of age or time in job, and (q) statistic type.

The coding sheet used in the meta-analysis was modified after some of the studies were coded, to make it easier to record and analyze information, particularly from studies with more than one correlation. The original coding sheet is found in Appendix A and the final coding sheet is found in Appendix B.

Characteristics coded and used in the meta-analysis depended on information provided in the study results. Not all information used in the coding was used in the data analysis, either because insufficient or unclear information was reported in the study results, or because all or almost all results received the same coding. Whether subject employees were full-time or part-time was not usually noted in the results. Mean age and mean time in the job were not reported consistently. The distinction between studies that used the MBI without modification from those that used an adapted version was not used because it was not always clear whether the MBI used was modified, and because of the variety of ways the MBI was modified. For example, studies with educator samples conducted before the MS-ES was available changed the word “recipient” to “student.” There was no reason to suspect that true correlations for the populations on which these samples were based would be different from the correlations for the populations on which the samples used in the MS-ES were based. Before analysis, the coding groups for burnout measure “MBI as is” and “MBI adapted” were collapsed into one group. Gender

was not used because almost all study results were coded as including both male and female employees.

Separate meta-analyses were conducted for different groups of studies, based on the two different independent variables age and experience, other independent variables that were considered plausibly expected moderating factors, and different measures of the dependent variable.

Data Analysis

This meta-analysis combined methods supported by Glass et al. (1981), Hedges and Olkin (1985); and Hunter et al. (1982). The software used for this meta-analysis was Meta-Analysis Programs, by Schwarzer (1989). From the analyses provided by this software, unweighted mean correlations, weighted mean correlations using Fisher's z transformation, and weighted mean correlations using Fisher's z transformation and including correction for attenuation were obtained and used in this meta-analysis. The software also provided tests for homogeneity, which were used in this meta-analysis.

Correlation coefficients, sample sizes, and study characteristics were collected from each study included in the meta-analysis. Where possible, test statistics other than Pearson's product-moment correlation were transformed into product-moment correlations using methods suggested by Wolf (1986).

Each study's correlation coefficient for age or years of experience and one or more dimensions of burnout was determined. If a study included correlation coefficients for both age and years of experience and burnout, all coefficients were collected, but a

separate meta-analysis was conducted for age and burnout, years of experience in a job and burnout, and years of experience in a field and burnout.

In the first edition of the MBI each item was rated on both a frequency scale and on an intensity scale. Due to evidence of “fairly high” correlations between intensity and frequency of feelings, the intensity dimension was no longer measured in subsequent editions of the MBI. Two studies that were conducted using the first edition of the MBI included correlations for age or years of experience and intensity of burnout as well as correlations for age or years of experience and frequency of burnout. When both intensity data and frequency data were reported, only frequency data were included in the meta-analysis. One study included results for three distinct samples; all three correlation coefficients were included.

The MBI subscale measure of personal accomplishment presented difficulties for the meta-analysis. A diminished sense of personal accomplishment was reported to indicate burnout. High numbers for emotional exhaustion and depersonalization would indicate a high degree of burnout, but high numbers for personal accomplishment would indicate a lower degree of burnout. Thus, if age or experience were negatively correlated with all three subscales of burnout, correlations with emotional exhaustion and depersonalization would be negative, and correlations with personal accomplishment would be positive. Only one study (Novak & Chappell, 1994) reported personal accomplishment scores that had been converted so that a higher number on the personal accomplishment scale indicated reduced personal accomplishment. For these reasons,

personal accomplishment correlations were not added to the other measures of burnout in a single meta-analysis.

After elimination of personal accomplishment correlations, four groupings of data by measures of burnout remained: emotional exhaustion correlations, depersonalization correlations, correlations with a modified combined MBI score, and correlations with measures other than the MBI. Many researchers reported both emotional exhaustion and depersonalization correlations for each sample. In these cases, if both correlations were included in the meta-analysis, the sample would be included twice. Hunter and Schmidt (1990) noted that their formulas for corrections assumed the statistical independence of the values included in a meta-analysis. They suggested that when a study contained two or more measures of a variable, the measures be combined into a composite or averaged. If they were averaged, the sample size reported should be the reported sample size of the study. Thus if emotional exhaustion and depersonalization were two different measures of burnout, the emotional exhaustion and depersonalization correlations from a single study could be averaged, and the average reported with the actual sample size of the study. However, in some studies the reported sample number for the exhaustion correlation was different from the reported sample number for the corresponding depersonalization correlation. Further, reported reliabilities for the MBI emotional exhaustion scale and for the depersonalization scale usually differed. The meta-analysis software used (Schwarzer, 1989) required input of reliabilities for correction for attenuation. For these reasons, reported correlations with emotional exhaustion and reported reliabilities for

depersonalization from the same study were not averaged or combined. Therefore, a meta-analysis on burnout and age was conducted using whatever measure a study reported, or, when a study reported both emotional exhaustion and depersonalization, using emotional exhaustion.

According to Koeske and Koeske (1989), only the emotional exhaustion subscale should be used as a measure of burnout. Some studies reported only emotional exhaustion correlations. A separate meta-analysis on burnout and age was conducted using only the correlations for which the burnout measure was emotional exhaustion. Twenty-seven study results from 27 unique study samples in 25 studies were included in this meta-analysis. A third meta-analysis on burnout and age was conducted using only correlations for which the measure of burnout was depersonalization. Twenty-two study results for 22 unique study samples in 20 studies were in this meta-analysis.

A similar set of three meta-analyses on burnout and on experience in a field of work were conducted: (a) one considering only emotional exhaustion correlations; (b) one including whatever correlation was reported, but when both emotional exhaustion and depersonalization correlations were reported, only including the emotional exhaustion correlation; and (c) one including only depersonalization correlations.

A similar set of three meta-analyses on burnout and experience in a particular job were conducted: (a) one considering only emotional exhaustion correlations; (b) one including whatever correlation was reported, but when both emotional exhaustion and depersonalization correlations were reported, only including the emotional exhaustion correlation; and (c) one including only depersonalization correlations.

A further meta-analysis was performed using only those findings from studies conducted in the United States to determine if the country of study was a moderator. Finally, further meta-analyses were performed to determine if occupation was a moderator.

Summary

A literature search on burnout and employee age or years of experience was performed in four databases. Criteria for inclusion of studies and criteria for exclusion of studies were identified. The search yielded both published and unpublished studies. Studies were coded for measurement of burnout and subject characteristics and study condition characteristics, and the data were analyzed.

CHAPTER IV

RESULTS

The search of the PsychINFO database (1967-2000) on the term “burnout” and one or more of the terms “age,” “years,” or “experience” yielded 585 entries. The searches on the same combination of terms in ERIC database (1992-2000), Social Sciences Abstracts (February 1983 - October 2000), and Sociological Abstracts (1986-2000) yielded 260 entries, 24 entries, and 90 entries, respectively, for a combined total of 374 entries. Some of these entries were duplicates of entries in the PsychINFO search .

A reading of the abstracts of the entries indicated that most were not research studies, or were not studies of burnout in employees as subjects, or contained no indication that study results were categorized by subject age or years of experience on the job. After elimination of duplicate entries, entries for studies that did not appear to provide relevant research findings, and entries that did not indicate that data on differences in subjects’ ages or years of experience were considered, 124 of the entries remained.

A reading of abstracts of these 124 entries revealed some findings that either age or years of experience was related to employee burnout and some findings that there was no relationship between age or years of experience and employee burnout. Of the 124 studies selected for attempted retrieval and inclusion, 85 were published articles, and 39 were dissertations.

Forty-three published articles were not available, and nine dissertations were available only through Dissertation Express and for a fee of \$25.00. Only the first two of

those dissertations to be requested were obtained. Therefore, of the 124 studies selected for inclusion, 50 were not available. Forty studies were eliminated after retrieval because they did not meet one of the inclusion criteria. Thus, the meta-analysis included 34 studies. One of the studies included data for three distinct samples, so the meta-analysis was based on 36 samples. Of the 34 studies that were finally included in the meta-analysis, 19 were published studies and 15 were unpublished studies.

Age and Burnout Using Reported Measure or Emotional Exhaustion

The first stage was a meta-analysis on burnout and age conducted using whatever measure a study reported, or, when a study reported both emotional exhaustion and depersonalization, using emotional exhaustion. Thirty-five study results from 35 unique study samples in 33 studies were included in this meta-analysis. Reliability for age was assumed to be 1.0 in all cases. Reliability for burnout was given where available and was inserted as 1.0 in all other cases, in accordance with Schwarzer's (1989) manual. Table 1 gives the number of subjects, correlations, and reliabilities on both correlations from these 35 samples.

For this meta-analysis on age and burnout, the total number of samples, k , was 35 and the total number of subjects, N , was 10,818. The unweighted mean correlation was -0.15743 and the 95% confidence interval for this mean was from -0.207771 to -0.107086, indicating a significant, although not large, negative correlation between age and burnout. The Fail Safe N for critical r of .05 was 75.20000, indicating that 76 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. Using Fisher's z -transformation, the unweighted mean

Table 1

Correlations on Age and Burnout Using Correlation Reported or Emotional Exhaustion if More than One Correlation Reported for a Sample

Study	n	Correlation	Reliability:	
			Age	Burnout
Tuuli & Karisalmi (1999)	2,351	-.04	1.00	.88
Tan & Akhtar (1998)	147	-.24	1.00	.84
Rainey (1999)	721	-.12	1.00	1.00
Rich & Rich (1987)	100	-.40	1.00	.59
Poulin & Walter (1993)	1,196	-.23	1.00	1.00
Dekel & Peled (2000)	44	-.19	1.00	.73
Vredenburg, Carlozzi, & Stein (1999)	521	-.29	1.00	.90
Stanton, Howard, Iso, & Seppo (1998)	241	-.39	1.00	.77
Novak & Chappell (1994)	245	-.08	1.00	.90
Williams (1989)	492	-.10	1.00	.92
Van Horn, Schaufeli, & Enzmann (1999)	249	.08	1.00	.89
Weinberg, Edwards, & Garove (1983)	256	.16	1.00	1.00
Reiner & Hartshorne (1982)	43	-.13	1.00	1.00
Parker & Kulik (1995)	73	-.35	1.00	.90
Hock (1988)	939	0.00	1.00	1.00
Sharma (1996)	116	-.14	1.00	1.00
Brown (1996) Sample 1	100	-.118	1.00	.80
Brown (1996) Sample 2	67	-.308	1.00	.80
Brown (1996) Sample 3	39	-.318	1.00	.80
Mutchler (1998)	560	-.08	1.00	1.00
Beck (1997)	187	-.27	1.00	.90
Dietzel (1995)	94	-.21	1.00	1.00
Rittenmyer (1997)	50	-.052	1.00	1.00
Sermon (1994)	162	.03	1.00	1.00
Bradley (1994)	79	-.01	1.00	1.00
Skaggs (1999)	185	-.199	1.00	.7947
McIntyre (1981)	428	-.144	1.00	.89
Lippert (1999)	221	-.21	1.00	.91
Foreman (1996)	206	-.22	1.00	1.00
Curci (1995)	182	-.11	1.00	.90
Dell'Erba, Venturi, Rizzo, Porcu', & Pancheri (1994)	109	.204	1.00	.91
Pagel & Wittmann (1986)	74	-.135	1.00	.91
Finch & Krantz (1991)	36	-.52	1.00	1.00
Boyd & Schneider (1997)	137	-.24	1.00	.88
Laub (1998)	168	-.14	1.00	1.00

r was -0.16131 and the 95% confidence interval was from -0.179692 to -0.142808, again indicating a significant but not large negative correlation between age and burnout. The Fail Safe N for critical r of .05 was 77.91443, indicating that 78 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Using Fisher's z -transformation, the weighted mean correlation was -0.11946, with a 95% confidence interval from -0.138079 to -0.100751, indicating a significant but small negative correlation between age and burnout. The Fail Safe N for critical r of .05 was 48.62015, indicating that 49 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. However, on three tests of homogeneity, the sample was found to be heterogeneous. Following Hunter and Schmidt (1990), the percentage of observed variance accounted for by sampling error was found to be only 21.32%. After correction for attenuation, the population mean correlation was estimated to be -0.12502, with a 95% confidence interval from -0.34567 to 0.09562, indicating that no significant correlation would be found in the true population. The percent of variance accounted for by all artifacts was 21.60%. For these reasons, a further search for moderators was indicated.

Age and Emotional Exhaustion

The measure of burnout could be a moderator. The second stage of analysis was a meta-analysis on burnout and age conducted using only the correlations for which the burnout measure was emotional exhaustion. Twenty-seven study results from 27 unique study samples in 25 studies were included in this meta-analysis. Reliability for age was assumed to be 1.0 in all cases. Reliability for emotional exhaustion was given where

available and was assumed to be 1.0 in all other cases. Number of subjects, correlations, and reliabilities on both correlations from these 27 samples are given in Table 2.

For this meta-analysis on age and emotional exhaustion, the total number of samples, k , was 27 and the total number of subjects, N , was 8,391. The unweighted mean correlation was -0.18111 and the 95% confidence interval for this mean was from -0.231069 to -0.131153, indicating a significant, although not large, negative correlation between age and emotional exhaustion. The Fail Safe N for critical r of .05 was 70.80000, indicating that 71 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. Using Fisher's z -transformation, the unweighted mean r was -0.18493 and the 95% confidence interval was from -0.205612 to -0.164086, again indicating a significant negative correlation between age and emotional exhaustion. The Fail Safe N for critical r of .05 was 72.86296, indicating that 73 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Using Fisher's z -transformation, the weighted mean correlation was -0.13972, with a 95% confidence interval from -0.160730 to -0.118574, again indicating a significant negative correlation between age and emotional exhaustion. The Fail Safe N for critical r of .05 was 48.44610, indicating that 49 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. However, on three different tests of homogeneity, the sample was found to be heterogeneous. Following procedures recommended by Hunter and Schmidt, the percentage of observed variance accounted for by sampling error was found to be only

Table 2***Correlations on Age and Emotional Exhaustion***

Study	<i>n</i>	Correlation	Reliability: Age	Reliability: Emotional exhaustion
Tuuli & Karisalmi (1999)	2,351	-.04	1.00	.88
Tan & Akhtar (1998)	147	-.24	1.00	.84
Poulin & Walter (1993)	1,196	-.23	1.00	1.00
Dekel & Peled (2000)	44	-.19	1.00	.73
Vredenburg, Carlozzi, & Stein (1999)	521	-.29	1.00	.90
Stanton, Howard, Iso, & Seppo (1998)	241	-.39	1.00	.77
Novak & Chappell (1994)	245	-.08	1.00	.90
Williams (1989)	492	-.10	1.00	.92
Van Horn, Schaufeli, & Enzmann (1999)	249	.08	1.00	.89
Parker & Kulik (1995)	73	-.35	1.00	.90
Sharma (1996)	116	-.14	1.00	1.00
Brown (1996) Sample 1	100	-.118	1.00	.80
Brown (1996) Sample 2	67	-.308	1.00	.80
Brown (1996) Sample 3	39	-.318	1.00	.80
Mutchler (1998)	560	-.08	1.00	1.00
Beck (1997)	187	-.27	1.00	.90
Dietzel (1995)	94	-.21	1.00	1.00
Rittenmyer (1997)	50	-.052	1.00	1.00
Sermon (1994)	162	.03	1.00	1.00
Bradley (1994)	79	-.01	1.00	1.00
McIntyre (1981)	428	-.1440	1.00	.89
Lippert (1999)	221	-.21	1.00	.91
Foreman (1996)	206	-.22	1.00	1.00
Curci (1995)	182	-.11	1.00	.90
Finch & Krantz (1991)	36	-.52	1.00	1.00
Boyd & Schneider (1997)	137	-.24	1.00	.88
Laub (1998)	168	-.14	1.00	1.00

25.21%. After correction for attenuation, the population mean correlation was estimated to be -0.14579, with a 95% confidence interval from -0.34134 to 0.04976, indicating that no significant correlation would be found in the true population, and the percent of variance accounted for by all artifacts was 25.53%. A further search for moderators beyond measure of burnout was indicated.

Age and Depersonalization

Because measure of burnout could be a moderator, the third stage was a meta-analysis on burnout and age conducted using only the correlations for which the burnout measure was depersonalization. Twenty-two study results from 22 unique study samples in 20 studies were included in the meta-analysis. Reliability for age was assumed to be 1.0 in all cases. Reliability for depersonalization was given where available, and was assumed to be 1.0 in all other cases, as recommended in Schwarzer's (1989) manual. The number of subjects, correlations, and reliabilities on both correlations from these 22 samples are given in Table 3.

For this meta-analysis on age and depersonalization, the total number of samples, k , was 22 and the total number of subjects, N , was 5,528. The unweighted mean correlation was -0.16438 and the 95% confidence interval for this mean was from -0.217311 to -0.111452, indicating a significant, although not large, negative correlation between age and depersonalization. The Fail Safe N for critical r of .05 was 50.32800, indicating that 51 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. Using Fisher's z -transformation, the unweighted mean r was -0.16671 and the 95% confidence interval was from - 0.192374

Table 3***Correlations on Age and Depersonalization***

Study	<i>n</i>	Correlation	Reliability:	Reliability:
			Age	Depersonalization
Poulin & Walter (1993)	1,196	-.25	1.00	1.00
Dekel & Peled (2000)	44	0.0	1.00	.55
Vredenburg, Carlozzi, & Stein (1999)	521	-.29	1.00	1.00
Stanton, Howard, Iso, & Seppo (1998)	241	-.26	1.00	.79
Novak & Chappell (1994)	245	-.03	1.00	.74
Williams (1989)	492	-.17	1.00	.88
Van Horn, Schaufeli, & Enzmann (1999)	249	.17	1.00	.56
Sharma (1996)	116	-.28	1.00	1.00
Brown (1996) Sample 1	100	-.153	1.00	.75
Brown (1996) Sample 2	67	-.428	1.00	.75
Brown (1996) Sample 3	39	-.137	1.00	.75
Mutchler (1998)	560	-.16	1.00	1.00
Beck (1997)	195	-.23	1.00	.80
Rittenmyer (1997)	50	-.129	1.00	1.00
Sermon (1994)	162	.05	1.00	1.00
Bradley (1994)	79	-.16	1.00	.79
McIntyre (1981)	428	-.0594	1.00	1.00
Lippert (1999)	221	-.23	1.00	.69
Curci (1995)	182	-.21	1.00	.79
Finch & Krantz (1991)	36	-.22	1.00	1.00
Boyd & Schneider (1997)	137	-.25	1.00	.51
Laub (1998)	168	-.19	1.00	1.00

to -0.140819, again indicating a significant but not large negative correlation between age and depersonalization. The Fail Safe N for critical r of .05 was 51.35255, indicating that 52 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Using Fisher's z -transformation, the weighted mean correlation was -0.17853, with a 95% confidence interval from -0.204074 to -0.152734, indicating a significant but not large negative correlation between age and depersonalization. The Fail Safe N for critical r of .05 was 56.55120, indicating that 57 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. However, on three different tests of homogeneity, the sample was found to be heterogeneous. Following the recommendations of Hunter and Schmidt, the percentage of observed variance accounted for by sampling error was found to be only 27.91%. After correction for attenuation, the population mean correlation was estimated to be -0.19496, with a 95% confidence interval from -0.40224 to 0.01232, indicating that no significant correlation would be found in the true population, and the percent of variance accounted for by all artifacts was 30.02%. For these reasons, a further search for moderators beyond measure of burnout was indicated.

Experience in a Field and Burnout Using Reported Measure or Emotional Exhaustion

The fourth stage was a meta-analysis on burnout and experience in a field conducted using whatever measure a study reported, or, when a study reported both emotional exhaustion and depersonalization, using emotional exhaustion. Twenty study

results from 20 unique study samples in 18 studies were included in this meta-analysis. Reliability for experience in a field was assumed to be 1.0 in all cases. Reliability for burnout was given where available and was assumed to be 1.0 in all other cases, in accordance with Schwarzer's (1989) manual. Table 4 displays the number of subjects, correlations, and reliabilities on both correlations from these 20.

For this meta-analysis on experience in a field and burnout, the total number of samples, k , was 20 and the total number of subjects, N , was 3,941. The unweighted mean correlation was -0.10620 and the 95% confidence interval for this mean was from -0.172879 to -0.039521, indicating a significant, although small, negative correlation between experience in a field and burnout. The Fail Safe N for critical r of .05 was 22.48000, indicating that 23 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. Using Fisher's z -transformation, the unweighted mean r was -0.10785 and the 95% confidence interval was from -0.138828 to -0.076656, again indicating a significant but small negative correlation between experience in a field and burnout. The Fail Safe N for critical r of .05 was 23.13895, indicating that 24 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Using Fisher's z -transformation, the weighted mean correlation was -0.08089, with a 95% confidence interval from -0.112057 to -0.049566, indicating a significant but small negative correlation between experience in a field and burnout. The Fail Safe N for critical r of .05 was 12.35638, indicating that 13 additional studies with a mean

Table 4

Correlations on Experience in a Field and Burnout Using Correlation Reported or Emotional Exhaustion if More than One Correlation Reported for a Sample

Study	n	Correlation	Reliability:	
			Experience in a field	Reliability: Burnout
Rich & Rich (1987)	100	-.35	1.00	.59
Stanton, Howard, Iso, & Seppo (1998)	241	-.31	1.00	.77
Novak & Chappell (1994)	245	-.07	1.00	.90
Van Horn, Schaufeli, & Enzmann (1999)	249	.08	1.00	.89
Weinberg, Edwards, & Garove (1983)	256	0.0	1.00	1.00
Reiner & Hartshorne (1982)	43	-.04	1.00	1.00
Parker & Kulik (1995)	73	-.29	1.00	.90
Hock (1988)	939	0.0	1.00	1.00
Brown (1996) Sample 1	100	-.160	1.00	.80
Brown (1996) Sample 2	67	-.267	1.00	.80
Brown (1996) Sample 3	39	-.318	1.00	.80
Beck (1997)	197	-.18	1.00	.90
Rittenmyer (1997)	50	-.005	1.00	1.00
Sermon (1994)	162	.05	1.00	1.00
Skaggs (1999)	185	-.129	1.00	.7947
McIntyre (1981)	428	-.1460	1.00	1.00
Foreman (1996)	206	-.17	1.00	1.00
Dell'Erba, Venturi, Rizzo, Porcu', & Pancheri (1994)	109	.314	1.00	.91
Pagel & Wittmann (1986)	74	-.165	1.00	.91
Laub (1998)	168	-.10	1.00	1.00

correlation of zero would have to be included for the correlation to be insignificant. On three different tests of homogeneity, the sample was found to be heterogeneous. The percentage of observed variance accounted for by sampling error was found to be only 29.51%. After correction for attenuation, the population mean correlation was estimated to be -0.08550, with a 95% confidence interval from -0.31191 to 0.14091, indicating that no significant correlation would be found in the true population, and the percent of variance accounted for by all artifacts was 29.65%. For these reasons, a further search for moderators was indicated.

Experience in a Field and Emotional Exhaustion

Because measure of burnout can be a moderator, the fifth stage in this study was a meta-analysis on burnout and experience in a field conducted using only the correlations for which the burnout measure was emotional exhaustion. Thirteen study results from 13 unique study samples in 11 studies were included in this meta-analysis. Reliability for experience in a field was assumed to be 1.0 in all cases. Reliability for emotional exhaustion was given where available and was assumed to be 1.0 in all other cases, in accordance with Schwarzer's (1989) manual. Table 5 displays the number of subjects, correlations, and reliabilities on both correlations from these 13 samples.

For this meta-analysis on experience in a field and emotional exhaustion, the total number of samples, k , was 13 and the total number of subjects, N , was 2,225. The unweighted mean correlation was -0.13492, and the 95% confidence interval for this mean was from -0.199822 to -0.070024, indicating a significant, although not large, negative correlation between experience in a field and emotional exhaustion. The Fail

Table 5***Correlations on Experience in a Field and Emotional Exhaustion***

Study	<i>n</i>	Correlation	Reliability: Experience in a field	Reliability: Emotional exhaustion
Stanton, Howard, Iso, & Seppo (1998)	241	-.31	1.00	.77
Novak & Chappell (1994)	245	-.07	1.00	.90
Van Horn, Schaufeli, & Enzmann (1999)	249	.08	1.00	.89
Parker & Kulik (1995)	73	-.29	1.00	.90
Brown (1996) Sample 1	100	-.160	1.00	.80
Brown (1996) Sample 2	67	-.267	1.00	.80
Brown (1996) Sample 3	39	-.318	1.00	.80
Beck (1997)	197	-.18	1.00	.90
Rittenmyer (1997)	50	-.005	1.00	1.00
Sermon (1994)	162	.05	1.00	1.00
McIntyre (1981)	428	-.1460	1.00	1.00
Foreman (1996)	206	-.17	1.00	1.00
Laub (1998)	168	-.10	1.00	1.00

Safe *N* for critical *r* of .05 was 22.08000, indicating that 23 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Using Fisher's *z*-transformation the unweighted mean *r* was -0.13673 and the 95% confidence interval was from -0.177605 to -0.095376, again indicating a significant negative correlation between experience in a field and emotional exhaustion. The Fail Safe *N* for critical *r* of .05 was 22.54868, indicating that 23 additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

The weighted mean correlation using Fisher's *z*-transformation was -0.12475, with a 95% confidence interval from -0.165782 to -0.083291, again indicating a significant but small negative correlation between experience in a field and emotional exhaustion. The Fail Safe *N* for critical *r* of .05 was 19.43565, indicating that 20

additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. On three different tests of homogeneity, the sample was found to be heterogeneous. The percentage of observed variance accounted for by sampling error was found to be only 42.26 %. After correction for attenuation, the population mean correlation was estimated to be -0.13124, with a 95% confidence interval from -0.31231 to 0.04982, indicating that no significant correlation would be found in the true population, and the percent of variance accounted for by all artifacts was 42.50%. A further search for moderators beyond measure of burnout was indicated.

Experience in a Field and Depersonalization

Because measure of burnout can be a moderator, the sixth stage in this study was a meta-analysis on burnout and experience in a field conducted using only the correlations for which the burnout measure was depersonalization. Eleven results from 11 unique study samples in 9 studies were in this meta-analysis. Reliability for experience in a field was assumed to be 1.0 in all cases. Reliability for depersonalization was given where available and was assumed to be 1.0 in all other cases, in accordance with Schwarzer's (1989) manual. Table 6 shows the number of subjects, correlations, and reliabilities on both correlations from these 11 samples.

For the meta-analysis on experience in a field and depersonalization, the total number of samples, k , was 11 and the total number of subjects, N , was 1,946. The unweighted mean correlation was -0.06714 and the 95% confidence interval for this mean was -0.121490 to -0.012782, indicating a significant, although very small, negative correlation between experience in a field and depersonalization. The Fail Safe N for

Table 6***Correlations on Experience in a Field and Depersonalization***

Study	<i>n</i>	Correlation	Reliability: Experience in a field	Reliability: Depersonali- zation
Stanton, Howard, Iso, & Seppo (1998)	241	-.20	1.00	.79
Novak & Chappell (1994)	245	-.02	1.00	.74
Van Horn, Schaufeli, & Enzmann (1999)	249	.08	1.00	.56
Brown (1996) Sample 1	100	-.121	1.00	.75
Brown (1996) Sample 2	67	-.145	1.00	.75
Brown (1996) Sample 3	39	-.02	1.00	.75
Beck (1997)	195	-.12	1.00	.80
Rittenmyer (1997)	50	-.024	1.00	1.00
Sermon (1994)	162	.04	1.00	1.00
McIntyre (1981)	428	-.0565	1.00	1.00
Laub (1998)	168	-.20	1.00	1.00

critical r of .05 was 3.77000, indicating that only four additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Using Fisher's z -transformation, the unweighted mean r was -0.06772 and the 95% confidence interval was from -0.112160 to -0.023005, again indicating a significant but very small negative correlation between experience in a field and depersonalization. The Fail Safe N for critical r of .05 was 3.89795, indicating that only four additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Using Fisher's z -transformation the weighted mean correlation was -0.06714, with a 95% confidence interval from -0.111590 to -0.022428, indicating a significant but small negative correlation between experience in a field and depersonalization. The Fail Safe N for critical r of .05 was 3.77153, indicating that only four additional studies with a mean

correlation of zero would have to be included for the correlation to be insignificant. On three different tests of homogeneity, the sample was found to be heterogeneous. The percentage of observed variance accounted for by sampling error was found to be 64.84 %. After correction for attenuation, the population mean correlation was estimated to be -0.07391, with a 95% confidence interval from -0.19231 to 0.04449, indicating that no significant correlation would be found in the true population, and the percent of variance accounted for by all artifacts was 65.16%. A further search for moderators beyond measure of burnout again was indicated.

Experience in a Position and Burnout Using Reported Measure or Emotional Exhaustion

The seventh stage was a meta-analysis on burnout and experience in a position conducted using whatever measure a study reported, or, when a study reported both emotional exhaustion and depersonalization, using emotional exhaustion. Eight study results from eight unique study samples in eight studies were included in this meta-analysis. Reliability for experience in a position was assumed to be 1.0 in all cases. Reliability for burnout was given where available, and was assumed to be 1.0 in all other cases, in accordance with Schwarzer's (1989) manual. Number of subjects, correlations, and reliabilities on both correlations from these eight samples are displayed in Table 7.

For this meta-analysis on experience in a position and burnout, the total number of samples, k , was eight and the total number of subjects, N , was 1,531. The unweighted mean correlation was -0.05481 and the 95% confidence interval for this mean was from -0.120003 to 0.010378, not indicating a significant correlation between experience in a

Table 7

Correlations on Experience in a Position and Burnout Using Correlation Reported or Emotional Exhaustion if More than One Correlation Reported for a Sample

Study	<i>n</i>	Correlation	Reliability: Experience in a position	Reliability: Burnout
Dekel & Peled (2000)	44	-.18	1.00	.73
Stanton, Howard, Iso, & Seppo (1998)	241	-.16	1.00	.77
Weinberg, Edwards, & Garove (1983)	256	0.0	1.00	1.00
Beck (1997)	197	-.03	1.00	.90
McIntyre (1981)	428	-.1045	1.00	1.00
Curci (1995)	182	-.05	1.00	1.00
McDermott (1984)	109	.14	1.00	.71
Pagel & Wittmann (1986)	74	-.054	1.00	.91

position and burnout. Using Fisher's *z*-transformation the unweighted mean correlation was -0.05512, and the 95% confidence interval was from -0.105277 to -0.004689 and the Fail Safe *N* for critical *r* of .05 was 0.81965.

Using Fisher's *z*-transformation the weighted mean correlation was -0.06226, with a 95% confidence interval from -0.112358 to -0.011855, and the Fail Safe *N* for critical *r* of .05 was 1.96224, indicating that only two additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. On two tests of homogeneity, the sample was found to be heterogeneous, but on one test of homogeneity, the sample was found to be homogeneous. The percentage of observed variance accounted for by sampling error was found to be 84.76%. After correction for attenuation, the population mean correlation was estimated to be -0.06661, with a 95% confidence interval from -0.13010 to -0.00311, indicating that a small but significant correlation

would be found in the true population, and the percent of variance accounted for by all artifacts was 85.01%. For these reasons, no further search for moderators was indicated. However, after correction for attenuation, the Fail Safe N for critical r of .05 was 2.65689, indicating that only three additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Experience in a Position and Emotional Exhaustion

The eighth stage in this study was a meta-analysis on burnout and experience in a position conducted using only the correlations for which the burnout measure was emotional exhaustion. Five study results from five unique study samples in five studies were included in this meta-analysis. Reliability for experience in a position was assumed to be 1.0 in all cases. Reliability for emotional exhaustion was given where available, and was assumed to be 1.0 in all other cases, in accordance with Schwarzer's (1989) manual. Table 8 displays the number of subjects, correlations, and reliabilities on both correlations from these five samples.

Table 8

Correlations on Experience in a Position and Emotional Exhaustion

Study	n	Correlation	Reliability: Experience in a position	Reliability: Emotional exhaustion
Dekel & Peled (2000)	44	-.18	1.00	.73
Stanton, Howard, Iso, & Seppo (1998)	241	-.16	1.00	.77
Beck (1997)	197	-.03	1.00	.90
McIntyre (1981)	428	-.1045	1.00	1.00
Curci (1995)	182	-.05	1.00	1.00

For this meta-analysis on experience in a position and emotional exhaustion, the total number of samples, k , was five and the total number of subjects, N , was 1,092. The unweighted mean correlation was -0.10490 and the 95% confidence interval for this mean was from -0.156460 to -0.053340, indicating a significant, although small, negative correlation between experience in a position and emotional exhaustion. The Fail Safe N for critical r of .05 was 5.49000; only six additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. Using Fisher's z -transformation the unweighted mean r was 0.10527 and the 95% confidence interval was from -0.163893 to -0.045904, again indicating a significant negative correlation between experience in a position and emotional exhaustion. The Fail Safe N for critical r of .05 was 5.52691, indicating that six additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Using Fisher's z -transformation the weighted mean correlation was -0.09750, with a 95% confidence interval from -0.156245 to -0.038070, again indicating a significant but small negative correlation between experience in a position and emotional exhaustion. The Fail Safe N for critical r of .05 was 4.75012, indicating that only five additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. On one test of homogeneity, the sample was found to be heterogeneous. On two other tests of homogeneity, the sample was found to be homogeneous. The percentage of observed variance accounted for by sampling error was found to be 100.00%. After correction for attenuation, the population mean correlation was estimated to be -0.10411, with a 95% confidence interval from -0.10411 to -0.10411, indicating that

a significant correlation would be found in the true population, and the percent of variance accounted for by all artifacts was 192.32%. For these reasons, no further search for moderators was indicated. However, after correction for attenuation, the Fail Safe N for critical r of .05 was 5.41084, indicating that only six additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Experience in a Position and Depersonalization

The ninth stage in this study was a meta-analysis on burnout and experience in a position conducted using only the correlations for which the burnout measure was depersonalization. Five results from five unique study samples in five studies were included in the meta-analysis. Reliability for experience in a position was assumed to be 1.0 in all cases. Reliability for depersonalization was given where available and was assumed to be 1.0 in all other cases, in accordance with Schwarzer's (1989) manual. Table 9 shows the number of subjects, correlations, and reliabilities on both correlations from these five samples.

Table 9

Correlations on Experience in a Position and Depersonalization

Study	n	Correlation	Reliability: Experience in a position	Reliability: Depersonalization
Dekel & Peled (2000)	44	-.31	1.00	.55
Stanton et al. (1998)	241	-.08	1.00	.79
Beck (1997)	195	-.11	1.00	.80
McIntyre (1981)	428	-.0488	1.00	1.00
Curci (1995)	182	.02	1.00	1.00

For this meta-analysis on experience in a position and depersonalization, the total number of samples, k , was five and the total number of subjects, N , was 1,090. The unweighted mean correlation was -0.10576 and the 95% confidence interval for this mean was -0.202938 to -0.008582, indicating a significant, although small, negative correlation between experience in a position and depersonalization. The Fail Safe N for critical r of .05 was 5.57600, indicating that only six additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. Using Fisher's z -transformation, the unweighted mean r was -0.10758 and the 95% confidence interval was from -0.166223 to -0.048183, again indicating a significant but small negative correlation between experience in a position and depersonalization. The Fail Safe N for critical r of .05 was 5.75820, indicating that only six additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Using Fisher's z -transformation the weighted mean correlation was -0.06616, with a 95% confidence interval -0.125378 to -0.006482, indicating a significant but very small negative correlation between experience in a position and depersonalization. The Fail Safe N for critical r of .05 was 1.61646, indicating that only two additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant. On one test of homogeneity, the sample was found to be heterogeneous. On two other tests of homogeneity, the sample was found to be homogeneous. The percentage of observed variance accounted for by sampling error was found to be 100.00%. After correction for attenuation, the population mean correlation was estimated to be -0.07309, with a 95% confidence interval from -0.07309 to -0.07309, indicating that a significant

correlation would be found in the true population. For these reasons, no further search for moderators was indicated. However, after correction for attenuation, the Fail Safe N for critical r of .05 was 2.30886, indicating that only three additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Search for Moderators

The 10th stage of the analysis was a search for moderators beyond measure of burnout. This part of the analysis was delimited to emotional exhaustion as a measure of burnout because use of emotional exhaustion alone as a measure of burnout led to an increase in the percent of variance accounted for by artifacts; theoretical arguments advanced by Koeske and Koeske (1989) also supported this approach. This part of the analysis excluded further search for moderators for experience and burnout because there were fewer samples to include.

First I performed a meta-analysis on age and emotional exhaustion for studies performed in the United States. On three tests of homogeneity, the sample was found to be heterogeneous. The percentage of observed variance accounted for by sampling error was found to be 38.05%. Table 10 shows results for studies in the United States.

The percentage of observed variance accounted for by sampling error was greater when only U. S. studies are included in the meta-analysis, but a further search for moderators was indicated.

Next an attempt was made to determine if occupation was a moderator. Table 11 shows a breakdown of correlations by occupational group. First, I performed a meta-analysis on age and emotional exhaustion for studies performed in the United States, in

Table 10***Comparison of Results for Age and Emotional Exhaustion for all Studies with Results for U.S. Studies***

Data	Age and emotional exhaustion: All studies	Age and emotional exhaustion: U.S. studies
Unweighted mean correlation	-0.18111	-0.19905
95% Confidence interval for unweighted mean correlation	-0.231069 to -0.131153	-0.255167 to -0.142929
The fail safe <i>N</i> for critical <i>r</i> of .05	70.80000	62.60000
Unweighted mean correlation using Fisher's z-transformation	-0.18493	-0.20329
95% confidence interval	-0.205612 to -0.164086	-0.229308 to -0.176978
The fail safe <i>n</i> for critical <i>r</i> of .05	72.86296	64.38099
Weighted mean correlation using Fisher's z-transformation	-0.13972	-0.19087
95% Confidence interval	-0.160730 to -0.118574	-0.217030 to -0.164433
The fail safe <i>n</i> for critical <i>r</i> of .05	48.44610	59.16488
Tests of homogeneity	Heterogeneous on all three	Heterogeneous on all three
Percentage of observed variance accounted for by sampling error	25.21%.	38.05%
Weighted mean after correction for attenuation	-0.14579	-0.19709
95% Confidence interval	-0.34134 to 0.04976	-0.35404 to -0.04015
Percent of variance accounted for by all artifacts	25.53%	38.75%

Table 11***Occupational Groups***

Data	Correlations
Social Work	-.23
Education	-.318, -.308, -.144, -.14, -.118, -.08, -.052, .03
Nursing	-.35, -.11
Other (mental health workers, psychologists, clergy, psychosocial rehabilitation workers, respite care workers)	-.52, -.39, -.29, -.27, -.22, -.21, -.21, -.14
Mixed (teachers, nurses, and social workers; nurses and mental health workers)	-.1, -.01

which subjects were in the field of education, either as teachers, principals, or school administrators. Eight samples from six studies were included. Studies in which subjects came from education and one or more other fields were excluded. The total number of subjects in the sample was 1,574. On two out of three tests of homogeneity, the sample was found to be homogeneous. The percentage of observed variance accounted for by sampling error was found to be 88.53%. After correction for attenuation, the population mean correlation was estimated to be -0.11486 and the 95% confidence interval was -0.16528 to -0.06445. The percent variance accounted for by all artifacts was 89.10%. The Fail Safe N for critical $r = .05$ was 10.37811. Based on these data, there was a small but significant negative correlation between age and emotional exhaustion for educators in the United States.

Next, I performed a meta-analysis on age and emotional exhaustion for studies performed in the United States, in which subjects were not in the field of education.

However, studies in which some subjects were educators and some subjects were in one or more other fields were included. Thirteen studies were included, and the total number of subjects in the sample was 3,644. On all three tests of homogeneity, the sample was found to be heterogeneous. The percentage of observed variance accounted for by sampling error was found to be 41.38%. After correction for attenuation, the population mean correlation was estimated to be -0.23117 and the 95% confidence interval was -0.36602 to -0.09632.

Because the sample including mixed samples was heterogeneous, I performed a meta-analysis on age and emotional exhaustion for studies performed in the United States in which subjects were not in the field of education. Studies in which subjects came from education and one or more other fields were excluded. Twelve studies were included and the total number of subjects in the sample was 3,152. On all three tests of homogeneity, the sample was found to be heterogeneous. The percentage of observed variance accounted for by sampling error was found to be 53.80%. After correction for attenuation, the population mean correlation was estimated to be -0.25034 and the 95% confidence interval was -0.35677 to -0.14392.

Because the non-educator sample was heterogeneous, I separated studies with samples from the nursing occupation from the group and performed a meta-analysis on age and emotional exhaustion for studies performed in the United States, in which subjects were in neither the field of education nor nursing. Studies with subjects from education or nursing and one or more other fields were excluded. Nine studies were included, and the total number of subjects in the sample was 2,818. On two out of three

tests of homogeneity, the sample was found to be heterogeneous. On one test of homogeneity, the sample was found to be homogeneous. The percentage of observed variance accounted for by sampling error was found to be 71.58%. After correction for attenuation, the population mean correlation was estimated to be -0.26330 and the 95% confidence interval was -0.32696 to -0.19964. The percentage of variance due to all artifacts was 74.37%. This number was very close to the 75% figure: if 75% of variance can be attributed to artifacts corrected for, the other 25% was probably due to artifacts not corrected for (Hunter & Schmidt, 1990). Organ and Ryan (1995) suggested that a 65% figure may be used when correlations cannot be corrected for range restriction, which was the case in this meta-analysis.

Summary

Using an unweighted mean correlation, the meta-analyses showed a small significant negative correlation between age and burnout and between experience in a field and burnout, across all three burnout measurement groupings and using untransformed or z-transformed statistics. Results for an unweighted mean correlation between experience in a position and burnout were mixed. Where the correlations were significant, the Fail Safe N was so small that the inclusion of only a few additional studies could result in no significant correlation.

Using weighted correlations with Fisher's z-transformation, results were mixed, with indications of heterogeneity and indications of moderator variables of country and occupation. The data indicated a small but significant negative correlation between age

and emotional exhaustion for employees in some occupational groups in the United States.

CHAPTER V

SUMMARY, DISCUSSION AND RECOMMENDATIONS

Summary

Employee burnout has been defined as a syndrome of job stress consisting of three components: emotional exhaustion, depersonalization, and reduced personal accomplishment. It has been particularly noted and studied in human services and other helping professions involving extensive direct client contact, but it can be present in other types of work. Numerous research studies have considered age or years of experience in a job or a field as factors possibly related to employee burnout. The purpose of this study was to investigate the relationship between age or years of experience and employee burnout by performing a meta-analysis on research studies that present findings on relationships between employee burnout and age or years of experience.

The results of the meta-analysis indicated a small but significant negative correlation between age and burnout and a small but significant negative correlation between experience in a field and burnout for at least some occupational groups in the United States. These hypotheses were tested:

1. Older employees experience less burnout than younger employees.
2. Employees who have worked in a type of job or field for longer periods of time experience less burnout than employees who have worked in that type of job or field for shorter periods of time.
3. Employees who have worked in a particular position for longer periods of time experience less burnout than employees who have worked in a particular position for shorter periods of time.

The first two hypotheses were supported by meta-analysis with unweighted untransformed means and unweighted transformed means. Because of indications the original samples were not homogeneous, the first two hypotheses were not supported across the board by the Hunter and Schmidt (1990) analysis. However, after a search for moderators, the Hunter and Schmidt analysis provided partial support for the first two hypotheses, in that a small but significant negative correlation between age and emotional exhaustion, and a small but significant negative correlation between experience in a field and emotional exhaustion, were indicated for some occupational groups within the United States. Support for the third hypothesis was inconsistent, and where analysis indicated a significant negative correlation between experience in a position and burnout, the Fail Safe N was too small to conclude that the third hypothesis was supported for the true population.

In spite of results providing some support to the first two hypotheses, there were limitations to this study. First, the results of the meta-analysis depended on the results of the studies on which it was based. This study was limited by its dependence on the data provided by original researchers. Second, this study was limited by availability of studies. However, in most cases the Fail Safe N was large enough to make it unlikely that studies that were identified in the extensive literature search but not available for use in this study would change the results.

This study was delimited to analysis of studies with results that were correlations or that could be transformed into correlations with the information provided. If more

studies had used correlations, or had provided more complete information, the pool of studies used in this study would have been larger.

Further, a meta-analysis of Pearson product moment correlations did not allow for inclusion of statistics indicating nonlinear relationships between age and burnout or experience and burnout. The data was not provided in most individual studies to indicate whether or not a nonlinear relationship might be indicated. Two studies that presented burnout statistics for three or more age groups suggested such a relationship. Tuuli and Karisalmi (1999) found less emotional exhaustion in one industry in employees 45 to 54 years old than in either younger or older employees. Foreman (1996) found that clergy 30-39 experienced slightly more burnout than younger clergy, but that burnout decreased with each decade thereafter. He also found that clergy with 11-15 years experience in the field experienced greater burnout than either more experienced or less experienced clergy.

Discussion

The results suggest that there is a small but significant negative correlation between age and emotional exhaustion for educators in the United States, and possibly a significant negative correlation between age and burnout for employees in other occupational groups in the United States. These results raise issues both about the explanation for negative correlations between age and burnout, and about moderators to explain apparent differences in correlations for different groups of employees.

First, the results raise questions about the explanation for negative correlations between age and burnout in the cases in which there appear to be negative correlations.

One explanation is that employees develop coping skills with age or with experience. However, it is also plausible that the difference in burnout levels could be explained by a greater likelihood that employees experiencing high levels of burnout would leave their fields at a younger age, or with less experience, than would employees who experience less burnout at that age or experience level. If this latter explanation were accurate, then there could be two alternate ways to interpret and describe the conclusions. One would be that there is a negative correlation between age and burnout caused by attrition. Another would be that there is not enough evidence to correct for range restriction in a meta-analysis of age and burnout correlations (Hunter & Schmidt, 1990).

Second, the results raise questions about apparent differences in correlations in different countries. Van Horn, Schaufeli, Greenglass, and Burke (1997) have noted an unexplained difference in results between North American and Dutch studies of teachers. In Dutch studies, age has appeared to be positively correlated with burnout. If correlations are different in different countries, then questions arise about reasons for the differences. It could be that differences are explained by cultural differences between citizens of different countries, differences in training or education standards in different countries, or differences in employment practices or law.

Third, the results raise questions about apparent differences in correlations for different occupational groups. One possible explanation for differences between occupational groups or fields could be that the youngest or newest employees in certain occupations tend to be older than the youngest or newest employees in other occupations. The youngest teachers, for example, could tend to be younger than the youngest

physicians. With information on the mean age and range of ages for all study samples, it might be possible to determine whether or not differences between occupational groups could be explained by differences in beginning ages of employees in those groups.

Other explanations for differences between results for different occupational groups could be differences in workplace culture, differences in characteristics of persons in different lines of work, and differences in standards or regulations in different fields. It could be more difficult to determine whether or not qualitative differences in groups could explain differences in correlations.

Recommendations

Further research in meta-analysis and in individual studies is recommended. First, for meta-analysis, the inclusion of more studies, particularly studies from countries other than the United States, is recommended. Inclusion of more studies from outside the United States could permit more comparisons of results. The comparisons could be used to determine, first, whether or not correlations have tended to be different for different countries, and second, whether or not differences between the countries could explain the differences in correlations.

Second, it is recommended that tests for nonlinear relationships be conducted in individual studies. A small but significant negative relationship reported as a Pearson Product Moment Correlation could be consistent with a population in which both the youngest and older employees experience less burnout than would employees in an age range between the two.

Third, repeated or continuing studies of the same groups over time could answer the question of whether or not negative correlations exist because employees experiencing burnout leave their fields of work. Longitudinal studies of populations for which a negative correlation is indicated could address the restriction of range issue and could help explain why the negative correlation is found. Goldfarb (1960) argued that data from successive surveys on sociological problems could provide a method of making estimates of change, but they did not explain how the change or why the change occurred. It could be that some of the younger or less experienced employees with high levels of burnout leave their fields, resulting in a lower mean burnout level for older or more experienced employees. Longitudinal studies might show that remaining employees do not experience a decrease in burnout levels as they age or gain experience. On the other hand, it could be that some individual younger or less experienced employees experience a decrease in burnout levels as they age or gain experience, leading to a lower mean level of burnout for older or more experienced employees. Individuals might develop coping skills with age and experience. Implications for employers and employees could differ depending on the explanation for the negative correlation.

Finally, it is recommended that future research combine the last two recommendations. Suppose that a curvilinear relationship, with younger and older employees having greater mean burnout than employees in an age group between the two, were found in some studies. Suppose that longitudinal studies find that younger employees with high burnout levels were more likely than other younger employees to leave their field of work before reaching middle age. It could take longitudinal studies

that include tests for nonlinear relationships to rule out the possibility that for individuals, burnout is correlated positively with age or experience. Because this meta-analysis relied on Pearson product moment correlations and because it was not possible to correct for range restriction, it is possible that its conclusion that age, or experience in a field, is negatively correlated with burnout for group means is consistent with a true positive relationship in individuals.

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APPENDICES

APPENDIX A

APPENDIX A

ORIGINAL CODING SHEET

Author(s): _____

Title: _____

Journal: _____

Publication Information: _____

1. Study ID#: ____ - ____

2. Year: _____

3. Source of data: ____ Journal ____ Thesis/Dissertation ____ Other (____)

4. Occupation: _____

5. ____ Full-time ____ Part-time ____ Mixed ____ Not specified

6. Gender: ____ male ____ female ____ both (____)

7. Country: ____ U.S. ____ Other (____)

8. If U.S.: ____ nationwide ____ region (____)

9. Burnout: ____ MBI as is ____ MBI adapted (____) ____ Other (____)

10. Mean age: _____

11. Mean time in job : _____

12. Time in job (meaning): ____ position ____ type of job ____ with employer

13. Instrument: ____ mailed questionnaire ____ questionnaire administered in person
____ other (____)

14. Selection: ____ random ____ nonrandom ____ (____)

15. n = _____

16. Classification: ____ age & burnout ____ tenure & burnout

17. If MBI or adapted: ____ e.e. ____ dep. ____ p.a. ____ combined

18. Age or time in job: ____ in years ____ grouped (____)

19. r = _____

20. other statistic = _____ (____)

21. Analysis: _____

1. Study ID#: ____ - ____

16. Classification: ____ age & burnout ____ tenure & burnout

17. If MBI or adapted: ____ e.e. ____ dep. ____ p.a. ____ combined

18. Age or time in job: ____ in years ____ grouped (____)

19. r = _____

20. Other statistic = _____ (____)

21. Analysis: _____

1. Study ID#: ____ - ____
16. Classification: ____ age & burnout ____ tenure & burnout
17. If MBI or adapted: ____ e.e. ____ dep. ____ p.a. ____ combined
18. Age or time in job: ____ in years ____ grouped (____)
19. $r =$ ____
20. Other statistic = ____ (____)
21. Analysis: _____

1. Study ID#: ____ - ____
16. Classification: ____ age & burnout ____ tenure & burnout
17. If MBI or adapted: ____ e.e. ____ dep. ____ p.a. ____ combined
18. Age or time in job: ____ in years ____ grouped (____)
19. $r =$ ____
20. Other statistic = ____ (____)
21. Analysis: _____

APPENDIX B

APPENDIX B

FINAL CODING SHEET

Author(s): _____

Title: _____

Journal: _____

Publication Information: _____

1. Study ID#: ____ - ____

2. Year: _____

3. Source of data: ____ 1. Journal ____ 2. Thesis/Dissertation ____ 3. Other (____)

4. Occupation: ____ 1. Social worker ____ 2. Teacher ____ 3. Nurse ____ 4. Other (____)

5. ____ 1. Full-time ____ 2. Part-time ____ 3. Mixed ____ 4. Not specified

6. Gender: ____ 1. male ____ 2. female ____ 3. both (____)

7. Country: ____ 1. U.S. ____ 2. Other (____)

8. If U.S.: ____ 1. nationwide ____ 2. regional (____)

9. Burnout: ____ 1. MBI as is ____ 2. MBI adapted (____) ____ 3. Other (____)

10. Mean age: _____

11. Mean time in job : _____

12. Instrument: ____ 1. mailed questionnaire ____ 2. questionnaire administered in person
____ 3. other (____)

13. Selection: ____ 1. random ____ 2. nonrandom ____ (____)

14. n = _____

15. Classification: ____ 1. age & burnout ____ 2. tenure & burnout

16. Time in job: (meaning): ____ 1. position ____ 2. type of job ____ 3. with employer

17. If MBI or adapted: ____ 1. e.e. ____ 2. dep. ____ 3. p.a. ____ 4. combined

18. Age or time in job: ____ 1. in years ____ 2. grouped (____)

19. r = _____ 20. other statistic = _____ (____)

21. Analysis: _____

1. Study ID#: ____ - ____

15. Classification: ____ 1. age & burnout ____ 2. tenure & burnout

16. Time in job: (meaning): ____ 1. position ____ 2. type of job ____ 3. with employer

17. If MBI or adapted: ____ 1. e.e. ____ 2. dep. ____ 3. p.a. ____ 4. combined

18. Age or time in job: ____ 1. in years ____ 2. grouped (____)

19. r = _____ 20. Other statistic = _____ (____)

21. Analysis: _____

1. Study ID#: ____ - ____

15. Classification: ____ 1. age & burnout ____ 2. tenure & burnout

16. Time in job: (meaning): ____ 1. position ____ 2. type of job ____ 3. with employer

17. If MBI or adapted: ____ 1. e.e. ____ 2. dep. ____ 3. p.a. ____ 4. combined

18. Age or time in job: ___ 1. in years ___ 2. grouped (_____))
19. $r =$ _____ 20. Other statistic = _____ (_____))
21. Analysis: _____

1. **Study ID#:** ___ - ___
15. Classification: ___ 1. age & burnout ___ 2. tenure & burnout
16. Time in job: (meaning): ___ 1. position ___ 2. type of job ___ 3. with employer
17. If MBI or adapted: ___ 1. e.e. ___ 2. dep. ___ 3. p.a. ___ 4. combined
18. Age or time in job: ___ 1. in years ___ 2. grouped (_____))
19. $r =$ _____ 20. Other statistic = _____ (_____))
21. Analysis: _____

1. **Study ID#:** ___ - ___
15. Classification: ___ 1. age & burnout ___ 2. tenure & burnout
16. Time in job: (meaning): ___ 1. position ___ 2. type of job ___ 3. with employer
17. If MBI or adapted: ___ 1. e.e. ___ 2. dep. ___ 3. p.a. ___ 4. combined
18. Age or time in job: ___ 1. in years ___ 2. grouped (_____))
19. $r =$ _____ 20. Other statistic = _____ (_____))
21. Analysis: _____

1. **Study ID#:** ___ - ___
15. Classification: ___ 1. age & burnout ___ 2. tenure & burnout
16. Time in job: (meaning): ___ 1. position ___ 2. type of job ___ 3. with employer
17. If MBI or adapted: ___ 1. e.e. ___ 2. dep. ___ 3. p.a. ___ 4. combined
18. Age or time in job: ___ 1. in years ___ 2. grouped (_____))
19. $r =$ _____ 20. Other statistic = _____ (_____))
21. Analysis: _____

1. **Study ID#:** ___ - ___
15. Classification: ___ 1. age & burnout ___ 2. tenure & burnout
16. Time in job: (meaning): ___ 1. position ___ 2. type of job ___ 3. with employer
17. If MBI or adapted: ___ 1. e.e. ___ 2. dep. ___ 3. p.a. ___ 4. combined
18. Age or time in job: ___ 1. in years ___ 2. grouped (_____))
19. $r =$ _____ 20. Other statistic = _____ (_____))
21. Analysis: _____

VITA

Leslie Shapard, daughter of Charles and Ruth Shapard, was born in Memphis, Tennessee. She has worked in education and human resources. She is employed by Oak Ridge Associated Universities as a Project Manager at the Oak Ridge Institute for Science and Education. In this position she is responsible for coordination of peer and merit reviews and related activities for the U.S. Department of Energy and other government supporters of scientific, engineering, or technical research.