

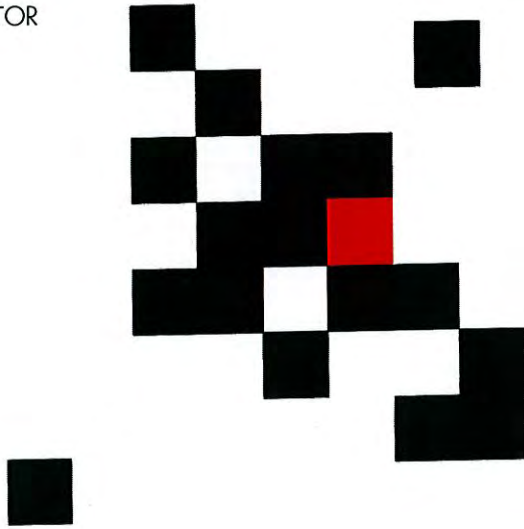
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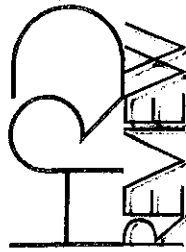
HRD

HUMAN
RESOURCE
DEVELOPMENT

REVIEW

ELWOOD F. HOLTON III, EDITOR





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RESOURCE
DEVELOPMENT
REVIEW

VOLUME 3 NUMBER 2 JUNE 2004

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Employee Burnout: A Meta-Analysis of the Relationship Between Age or Years of Experience

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This study examined 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. 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.

Keywords: burnout; meta-analysis; age; work experience

Although job stress is a part of every worker's life, prolonged, chronic job stress can result in burnout (Maslach & Schaufeli, 1993). Individuals suffering from burnout experience a depletion of physical and emotional resources, develop cynical attitudes, and feel a loss of professional self-efficacy (Maslach, Jackson, & Leiter, 1996). Although burnout has been particularly noted and studied in human services and other "helping" professions involving extensive direct client contact, it can be present in other types of work (Maslach et al., 1996). High levels of burnout have been found across occupational groups (Schutte, Toppinen, Kalimo, & Schaufeli, 2000; Toppinen-Tanner, Kalimo, & Mutanen, 2002).

Gaining a thorough understanding of burnout is important because of the detrimental effects it can have on individuals and organizations. Burnout negatively affects the health and personal lives of the employees experiencing it as well as services received by their patients, students, clients, or customers (Duquette, K rouac, Sandhu, & Beaudet, 1994; Maslach et al., 1996; Parker & Kulik, 1995; Pedrabissi, Rolland, & Santinello, 1993). Furthermore, some studies have found correlations between burnout and (a) absen-

teeism, (b) intention to quit, (c) actual turnover, and (d) decreased job performance (Cordes & Dougherty, 1993; Drake & Yadama, 1996; King & Sethi, 1997; Miller, 1995; Razza, 1993). The purpose of this study was to use meta-analysis to investigate discrepancies in findings relative to factors (i.e., age and years of experience) affecting burnout. This research has significance for how burnout is addressed in the workplace.

Review of Literature

Much of the research conducted on burnout has employed a correlational design. Consequently, researchers have identified numerous factors that are related to burnout. Most of these factors can be divided into (a) environmental/organizational factors, (b) individual factors, or (c) demographic factors (Brewer & Clippard, 2002).

Environmental/Organizational Factors

Among the environmental/organizational factors that have been linked to burnout are work overload, role conflict, role ambiguity, the work environment itself, and supervisory support. Work overload results when there is not enough time or resources to meet the demands placed on an individual at work. Mazur and Lynch (1989) found that work overload was the most significant predictor of burnout. Other researchers have provided further evidence of the link between work overload and burnout (Burke & Richardsen, 1996; Cordes & Dougherty, 1993).

Role conflict and role ambiguity are two similar, though distinct, constructs. Whereas role conflict occurs when one demand placed on an individual conflicts with one or more other demands placed on him or her, role ambiguity refers to a lack of understanding by an individual of the demands placed on him or her. High levels of both role conflict (Cordes & Dougherty, 1993; Low, Cravens, Grant, & Moncrief, 2001; Sethi, Barrier, & King, 1999; Singh, Goolsby, & Rhoads, 1994) and role ambiguity (Burke & Greenglass, 1995; Low et al., 2001; Sethi et al., 1999; Starnaman & Miller, 1992) have been associated with high levels of burnout.

The work environment itself also has been linked to burnout (Belicki & Woolcott, 1996; Cordes & Dougherty, 1993; Gabris & Ihrke, 1996). Elements of a work environment that promotes high levels of burnout include physical discomfort and lack of participation in decision making. Lack of supervisory support also has contributed to high levels of burnout (Cheuk, Wong, & Rosen, 1994; Seltzer & Numerof, 1988). Likewise, supervisory support has been shown to be pivotal in reversing the effects of role conflict (Kickul & Posig, 2001). Therefore, training supervisors to identify warning signs of burnout among employees and to provide appropriate support might be crucial in minimizing burnout in the workplace.

Individual Factors

Individual factors associated with burnout include certain personality traits. For example, Layman and Guyden (1997) suggested that introverted people were at higher risk of developing burnout than were extroverted people. Furthermore, Burke and Richardsen (1996) posited that employees who were sensitive, idealistic, overly enthusiastic, and empathic were prone to burnout, as were individuals who were anxious and obsessive. By identifying individual traits that might make a person susceptible to burnout, supervisors and human resource professionals hopefully can improve their success at identifying employees who need burnout prevention programs and subsequently enrolling them in such programs.

Demographic Factors

Researchers often have reported on the effects of demographic factors on burnout. For example, Cordes and Dougherty (1993) indicated that married individuals experienced less burnout than their single counterparts. Jackson (1993) also found significant differences in levels of burnout relative to such demographic factors as gender, age, and marital status. However, other researchers have found that demographic factors had no effect on experienced burnout (Dillon & Tanner, 1995; Friedman & Farber, 1992). This lack of synthesis in research findings relative to demographic factors impacting burnout poses problems for researchers and human resource professionals charged with designing and implementing strategies for ameliorating burnout in the workplace. If these conflicting results can be resolved, human resource professionals can improve their chances of successfully targeting employees who most need burnout prevention programs.

Burnout and Age or Years of Experience

Numerous research studies have considered age or years of experience in a job or a field as factors possibly related to employee burnout. However, results have not been conclusive. Whereas 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 were older teachers. 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 provides a means to reconcile apparently conflicting results from different studies and subsequently to explain differences in findings and to draw general conclusions. From these conclusions, human resource professionals can design interventions and strategies to buttress employees against the damaging effects of burnout.

If younger employees are more likely to experience burnout than are 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, & Seppo, 1998). If employees who are new to a type of work or a particular position are more likely to experience burnout than are 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. Moreover, because an inverse relationship between supervisory support and subordinate burnout has been indicated (Seltzer & Numerof, 1988), supervisors need to be aware of characteristics (e.g., age, experience) that might make employees susceptible to burnout so that they can implement support interventions proactively.

Furthermore, 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.

Structure and Measurement of Burnout

When assessing burnout, the instrument of choice has been the Maslach Burnout Inventory (MBI). More than 90% of all empirical studies on burnout have used the MBI (Schaufeli & Enzmann, 1998). Consequently, the meaning of burnout has become confounded with the three subscales of the MBI: emotional exhaustion, depersonalization, and reduced personal accomplishment. However, some researchers have suggested that this three-subscale structure might not present the most accurate picture of burnout (Densten, 2001).

According to Koeske and Koeske (1989), data from the literature generally supported the reliability and validity of the MBI, but 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.

Although most empirical studies have used the MBI, some studies have used other measures of burnout, such as the Staff Burnout Scale for Health Professionals, which like the MBI, consists of a 7-point, Likert-type scale (Rich & Rich, 1987). Other studies have used measures of burnout developed especially for the research to be conducted (Hock, 1988).

Purpose of Study

Due to apparently conflicting results in studies, it is not known whether age or years of experience are 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 are factors related to 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 with findings on relationships between employee burnout and age or years of experience.

Research Questions

Three research questions were considered, as follows:

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?

Method

The research design employed in the study was meta-analysis. A model presented by Brewer and McMahan (2002) was used to guide the methodology of this study. A description of meta-analytic procedures used in the study follows.

Literature Search

The PsycINFO 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). These databases—especially PsycINFO—were chosen because they report articles, books, and dissertations in all areas (e.g., organizational, industrial) of

psychology, the umbrella subject under which burnout is most often investigated. Duplicate entries, entries for studies that did not appear to provide relevant research findings, and entries that did not indicate data on differences in subjects' ages or years of experience were eliminated from consideration in the meta-analysis.

Criteria for Inclusion and Exclusion

Of the studies identified through the literature search, only those meeting certain eligibility criteria were included in the meta-analysis. Those criteria included that the studies used quantitative measures of employee burnout and of employee age or years of experience. Also, 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. Finally, only studies from which it was possible to determine a correlation coefficient, either directly or through transformation, were included.

Studies that did not meet those criteria were excluded. Studies were not excluded on the basis of judgments of the quality of the research, in accordance with Glass, McGaw, and Smith (1981), Hunter and Schmidt (1990), and Brewer and McMahan (2002).

Data Analysis

This meta-analysis combined methods supported by Glass et al. (1981), Hedges and Olkin (1985), and Hunter, Schmidt, and Jackson (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. In accordance with Schwarzer, reliabilities for age, experience in a field, and experience in a position were 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. Also, the software provided tests for homogeneity, which were used in this meta-analysis.

Each study's correlation coefficient for age or years of experience and burnout was determined. If a study included correlation coefficients for both age and burnout and years of experience and burnout, all coefficients were collected, but a separate set of meta-analyses was conducted for age and burnout, years of experience in a job and burnout, and years of experience in a field and burnout. Each set consisted of (a) a meta-analysis conducted using whatever measure a study reported or, when a study reported

subscales from the MBI, using emotional exhaustion and (b) a meta-analysis conducted using only emotional exhaustion correlations.

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

Results

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 included in the meta-analysis, there were 19 published studies and 15 unpublished studies. Table 1 contains a list of the included studies as well as the number of subjects, reliabilities for burnout, and the specific meta-analysis(es) in which the study was included.

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 subscales from the MBI, using emotional exhaustion. Thirty-five study results from 35 unique study samples in 33 studies were included in this meta-analysis.

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 $-.16$, and the 95% confidence interval for this mean was from $-.21$ to $-.11$, indicating a significant, although not large, negative correlation between age and burnout. The fail-safe N for critical r of $.05$ was 75.20, 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 r was $-.16$, and the 95% confidence interval was from $-.18$ to $-.14$, again indicating a significant but not large negative correlation between age and burnout. The fail-safe N for critical r of $.05$ was 77.91, 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 $-.12$, with a 95% confidence interval from $-.14$ to $-.10$, indicating a significant but small negative correlation between age and burnout. The fail-safe N for critical r of $.05$ was 48.62, 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. Using procedures outlined by Hunter and Schmidt (1990), the percentage of observed variance accounted for by sampling error was

TABLE 1: Studies Included in Meta-Analysis

<i>Study</i>	<i>n</i>	<i>Reliability: Burnout</i>	<i>Meta-Analysis</i>
Tuuli & Karisalmi (1999)	2,351	.88	1, 2
Tan & Akhtar (1998)	147	.84	1, 2
Rainey (1999)	721	1.00	1
Rich & Rich (1987)	100	.59	1, 3
Poulin & Walter (1993)	1,196	1.00	1, 2
Dekel & Peled (2000)	44	.73	1, 2, 5, 6
Vredenburgh, Corlozzi, & Stein (1999)	521	.90	1, 2
Stanton, Howard, Iso, & Seppo (1998)	241	.77	1, 2, 3, 4, 5, 6
Novak & Chappell (1994)	245	.90	1, 2, 3, 4
Williams (1989)	492	.92	1, 2
Van Horn, Schaufeli, & Enzmann (1999)	249	.89	1, 2, 3, 4
Weinberg, Edwards, & Garove (1983)	256	1.00	1, 3, 5
Reiner & Hartshorne (1982)	43	1.00	1, 3
Parker & Kulik (1995)	73	.90	1, 2, 3, 4
Hock (1988)	939	1.00	1, 3
Sharma (1996)	116	1.00	1, 2
Brown (1996) Sample 1	100	.80	1, 2, 3, 4
Brown (1996) Sample 2	67	.80	1, 2, 3, 4
Brown (1996) Sample 3	39	.80	1, 2, 3, 4
Mutchler (1998)	560	1.00	1, 2
Beck (1997)	187	.90	1, 2, 3, 4, 5, 6
Dietzel (1995)	94	1.00	1, 2
Rittenmyer (1997)	50	1.00	1, 2, 3, 4
Sermon (1994)	162	1.00	1, 2, 3, 4
Bradley (1994)	79	1.00	1, 2
Skaggs (1999)	185	.79	1, 3
McIntyre (1981)	428	.89	1, 2, 3, 4, 5, 6
Lippert (1999)	221	.91	1, 2
Foreman (1996)	206	1.00	1, 2, 3, 4
Curci (1995)	182	.90	1, 2, 5, 6
Dell'Erba, Venturi, Rizzo, Porcu, & Pancheri (1994)	109	.91	1, 3
Pagel & Wittmann (1986)	74	.91	1, 3, 5
Finch & Krantz (1991)	36	1.00	1, 2
Boyd & Schneider (1997)	137	.88	1, 2
Laub (1998)	168	1.00	1, 2, 3, 4
McDermott (1984)	109	.71	5

Note: 1 = age and burnout using reported measure or emotional exhaustion, 2 = age and emotional exhaustion, 3 = experience in a field using reported measure or emotional exhaustion, 4 = experience in a field and emotional exhaustion, 5 = experience in a position using reported measure or emotional exhaustion, 6 = experience in a position and emotional exhaustion.

found to be only 21.32%. After correction for attenuation, the population mean correlation was estimated to be $-.13$, with a 95% confidence interval

from $-.35$ to $.10$, 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, and the total number of subjects was 8,391.

For this meta-analysis on age and emotional exhaustion, the unweighted mean correlation was $-.18$, and the 95% confidence interval for this mean was from $-.23$ to $-.13$, indicating a significant, although not large, negative correlation between age and emotional exhaustion. The fail-safe N for critical r of $.05$ was 70.80, 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 $-.18$, and the 95% confidence interval was from $-.21$ to $-.16$, again indicating a significant negative correlation between age and emotional exhaustion. The fail-safe N for critical r of $.05$ was 72.86, 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 $-.14$, with a 95% confidence interval from $-.16$ to $-.12$, again indicating a significant negative correlation between age and emotional exhaustion. The fail-safe N for critical r of $.05$ was 48.45, 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 25.21%. After correction for attenuation, the population mean correlation was estimated to be $-.15$, with a 95% confidence interval from $-.34$ to $.05$, indicating that no significant correlation would be found in the true population, and the percentage of variance accounted for by all artifacts was 25.53%. Thus, a further search for moderators beyond measure of burnout was indicated.

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

The third stage was a meta-analysis on burnout and experience in a field conducted using whatever measure a study reported, or, when a study

reported subscales from the MBI, using emotional exhaustion. Twenty study results from 20 unique study samples in 18 studies were included in this meta-analysis.

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 $-.11$, and the 95% confidence interval for this mean was from $-.17$ to $-.04$, indicating a significant, although small, negative correlation between experience in a field and burnout. The fail-safe N for critical r of $.05$ was 22.48, 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 $-.11$, and the 95% confidence interval was from $-.14$ to $-.08$, 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 23.14, 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 $-.08$, with a 95% confidence interval from $-.11$ to $-.05$, indicating a significant but small negative correlation between experience in a field and burnout. The fail-safe N for critical r of $.05$ was 12.36, indicating that 13 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 29.51%. After correction for attenuation, the population mean correlation was estimated to be $-.09$, with a 95% confidence interval from $-.31$ to $.14$, indicating that no significant correlation would be found in the true population, and the percentage 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 fourth 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.

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 $-.13$, and the 95% confidence interval for this mean was from $-.20$ to $-.07$, indicating a significant, although not large, negative correlation between experience in a field and emotional exhaustion. The fail-safe N for critical r of $.05$ was 22.08, indicat-

ing 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 $-.14$, and the 95% confidence interval was from $-.18$ to $-.10$, again indicating a significant negative correlation between experience in a field and emotional exhaustion. The fail-safe N for critical r of $.05$ was 22.55 , 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 $-.12$, with a 95% confidence interval from $-.17$ to $-.08$, 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 19.44 , 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 $-.13$, with a 95% confidence interval from $-.31$ to $.05$, indicating that no significant correlation would be found in the true population, and the percentage of variance accounted for by all artifacts was 42.50%. A further search for moderators beyond measure of burnout was indicated.

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

The fifth stage was a meta-analysis on burnout and experience in a position conducted using whatever measure a study reported, or, when a study reported subscales from the MBI, using emotional exhaustion. Eight study results from eight unique study samples in eight studies were included in this meta-analysis.

For this meta-analysis on experience in a position and burnout, the total number of samples, k , was 8, and the total number of subjects, N , was 1,531. The unweighted mean correlation was $-.05$, and the 95% confidence interval for this mean was from $-.12$ to $.01$, not indicating a significant correlation between experience in a position and burnout. Using Fisher's z transformation, the unweighted mean correlation was $-.06$, and the 95% confidence interval was from $-.11$ to $-.01$, and the fail-safe N for critical r of $.05$ was $.82$.

Using Fisher's z transformation, the weighted mean correlation was $-.06$, with a 95% confidence interval from $-.11$ to $-.01$, and the fail safe N for critical r of $.05$ was 1.96 , indicating that only two additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

nificant. 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 $-.07$, with a 95% confidence interval from $-.13$ to $-.01$, indicating that a small but significant correlation would be found in the true population, and the percentage 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 2.66, 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 sixth 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.

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 $-.10$, and the 95% confidence interval for this mean was from $-.16$ to $-.05$, 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 5.49; 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 $-.11$, and the 95% confidence interval was from $-.16$ to $-.05$, again indicating a significant negative correlation between experience in a position and emotional exhaustion. The fail-safe N for critical r of $.05$ was 5.53, 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 $-.10$, with a 95% confidence interval from $-.16$ to $-.04$, 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 4.75, 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 $-.10$, with a 95% confidence interval from $-.10$ to $-.10$, indicating that a significant correlation would be found in the true population, and the percentage 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 5.41, indicating that only six additional studies with a mean correlation of zero would have to be included for the correlation to be insignificant.

Search for Moderators

The seventh 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 percentage 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, a meta-analysis was performed on age and emotional exhaustion for studies conducted 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%. The percentage of observed variance accounted for by sampling error was greater when only U.S. studies were included in the meta-analysis, but a further search for moderators was indicated.

Next, an attempt was made to determine whether occupation was a moderator. Table 2 shows a breakdown of correlations by occupation. First, a meta-analysis was performed on age and emotional exhaustion for studies conducted in the United States, in 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 $-.11$, and the 95% confidence interval was $-.17$ to $-.06$. The percentage variance accounted for by all artifacts was 89.10%. The fail-safe N for critical $r = .05$ was 10.38. Based on these data, there was a small but significant negative correlation between age and emotional exhaustion for educators in the United States.

Next, a meta-analysis was performed on age and emotional exhaustion for studies conducted in the United States in which subjects were not in the

TABLE 2: Correlations by Occupational Group

<i>Occupational Group</i>	<i>Correlations</i>
Social workers	-.23
Educators	-.32, -.31, -.14, -.14, -.12, -.08, -.05, .03
Nurses	-.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, social workers, and mental health workers)	-.10, -.01

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 $-.23$, and the 95% confidence interval was from $-.37$ to $-.10$.

Because the sample including mixed samples was heterogeneous, a meta-analysis was performed on age and emotional exhaustion for studies conducted 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 $-.25$, and the 95% confidence interval was from $-.36$ to $-.14$.

Because the noneducator sample was heterogeneous, studies with samples from the nursing occupation were separated from the group, and a meta-analysis was performed on age and emotional exhaustion for studies conducted 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 $-.26$, and the 95% confidence interval was $-.33$ to $-.20$. The per-

centage 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% is probably due to artifacts not corrected for (Hunter & Schmidt, 1990). Organ and Ryan (1995) suggested that a 65% figure might be used when correlations cannot be corrected for range restriction, which was the case in this meta-analysis.

Discussion

Meta-analysis with unweighted untransformed means and unweighted transformed means supported a negative correlation between age and burnout (i.e., older employees experience less burnout than younger employees). Also, meta-analytic results supported a negative correlation between experience in a field and burnout (i.e., 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). Because of indications that the original samples were not homogeneous, these correlations 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 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 for some occupational groups within the United States.

Support for a correlation between experience in a position and burnout was inconsistent. Furthermore, 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 correlation was supported for the true population.

In spite of results providing some support to negative correlations between age or years of experience and burnout, 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.

Furthermore, 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 were not provided in most individual studies to indicate whether 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 aged 45 to 54 years old than in either younger or older employees. Foreman (1996) found that clergy aged 30 to 39 experienced slightly more burnout than younger clergy, but that burnout decreased with each decade thereafter. He also found that clergy with 11 to 15 years of experience in the field experienced greater burnout than either more experienced or less experienced clergy.

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 questions about the explanation for negative correlations between age and burnout and about moderators that might 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 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) noted an unexplained difference in burnout levels between North American teachers and their Dutch counterparts. If correlations differ by country, 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 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 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 qualitative differences in groups could explain differences in correlations.

Recommendations

The research highlighted in this article has practical significance for the field of human resources because it has implications for how burnout is treated in the workplace. The results of this study 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. Therefore, there is evidence to support designing interventions that occur very early in the employment process. This could translate to including burnout prevention information in new employee orientation programs. Another option is to implement training for handling burnout-inducing stressors while individuals undergo preparation programs prior to employment, an option also suggested by other researchers (Toscano & Ponterdolph, 1998).

In addition to interventions targeting employees, it is recommended that supervisors receive training relative to providing support against burnout to young and new employees. Research has shown that supervisory support can be instrumental in buffering the effects of burnout (Kickul & Posig, 2001; Seltzer & Numerof, 1988). Because young and new employees might be more inclined to respond to supervisory interventions than older, more experienced employees would be, supervisory support might be an especially effective tool for combating burnout.

This study also poses implications for future research in meta-analysis and in individual studies. 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 comparisons of results. The comparisons could be used to determine, first, whether correlations have tended to be different for different countries and second, whether differences between the countries could explain 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 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. 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 found 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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Note: Asterisks indicate studies included in meta-analysis (see Table 1).

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