

Belonging Affirmation Reduces Employee Burnout and Resignations in Front Line Workers
Elizabeth Linos, Krista Ruffini, Stephanie Wilcoxen

Abstract

Employee burnout is a significant challenge for individuals and organizations, yet we have limited causal evidence about how to mitigate its risk. We posit that workers are more susceptible to burnout if they face workplace identity threat, which we define as feeling undervalued or misunderstood in one's professional role. Drawing on evidence from educational psychology, we hypothesize that affirming social belonging within an undervalued group may reduce workplace identity threat and subsequently lessen burnout and turnover. We run three studies in different settings to explore this hypothesis. In a survey of correctional officers ($n=175$), we first find that workplace burnout is significantly correlated with feeling undervalued. Second, in a multi-site field experiment ($n=536$) of 911 dispatchers, we find that an intervention that affirms social belonging within the peer group significantly reduces burnout by about 8 points (0.4 SD) and resignations by more than half (3.4 percentage points). Finally, we conduct an online experiment ($n=497$) to explore the psychological mechanisms driving the results of our field experiment and conclude that our intervention primes social belonging and reduces workplace identity threat across a host of validated measures. These findings suggest that light-touch belonging-affirmation exercises can improve worker well-being and organizational outcomes.

Keywords: employee burnout, social belonging, turnover, field experiment

INTRODUCTION

Employee burnout -- a workplace syndrome characterized by emotional exhaustion, cynicism, and reduced personal accomplishment -- is associated with poor worker health, high turnover, and poor organizational performance (Borritz, Rugulies, Christensen, Villadsen, & Kristensen, 2006; Salvagioni et al., 2017; Dai, Milkman, Hofmann, & Staats, 2015). The alarming rates of employee burnout place high costs on workers, employers, and society. Recent evidence suggests that 20% of employees are burnt out (Wigert & Agrawal, 2018), costing the U.S. health-care system \$125 to \$190 billion per year (Goh, Pfeffer, & Zenios, 2016). Among frontline workers like doctors, social workers, and law enforcement officers, burnout can be significantly higher, affecting 30 to 80% of workers (Garman, Corrigan, & Morris, 2002; Lloyd, King, & Chenoweth, 2002; Shanafelt et al., 2010; Wallace, Lemaire, & Ghali, 2009).

While many factors affect employee burnout, a large literature theorizes that job resources can influence the likelihood that an employee burns out. This work, based on the Job Demands-Resources (JD-R) model, posits that high job demands such as irregular hours, contact with clients, or physical work may create strain and exhaustion that then increases burnout. But the job resources available to cope with high job demands -- such as more autonomy, social support, or better feedback -- may buffer workers against burnout through a motivational pathway (Demerouti & Bakker, 2011; Bakker, Demerouti, & Euwema, 2005; Broadhead et al., 1983; Hakanen, Bakker, & Demerouti, 2005). For example, social support resources may fulfill employees' needs to belong, which then helps employees cope with high job demands (Van den Broeck et al., 2008). The empirical literature consistently finds that people who report stronger social support and stronger social relationships at work also report lower burnout (see for example, Kim et al., 2018; Baruch-Feldman et al. 2002; Russell et al., 1987). Yet it is unclear if social support causally reduces burnout or if, conversely, lower burnout increases feelings of social connectedness. In addition, we know very little about how one's professional role or identity affects *who* feels connected and socially supported at work. Our studies aim to first strengthen our understanding of the psychological mechanisms underlying the relationship between social connectedness and burnout, and second, to explore the causal direction of this association by testing the hypothesis that building social connectedness among otherwise un-connected individuals reduces burnout.

To do so, we draw on evidence from education and organizational psychology around identity threat and belonging. A vast literature focusing on educational settings shows that when people feel like they may confirm a negative stereotype about their social group, they are susceptible to "stereotype threat," which increases anxiety and worsens performance (Steele and Aronson, 1995, 2004). Related, when people are uncertain about whether they belong -- when their social connectedness is threatened -- they may view

adversity as a threat to their identity and subsequently perform poorly (Walton & Cohen, 2007). We expand upon this work and define *workplace* identity threat as a phenomenon in which workers feel misunderstood or undervalued in their professional roles. Consistent with studies that conceptualize devaluation as a form of social rejection that threatens one's sense of belonging (Richman & Leary, 2009), workplace identity threat can arise either at an individual level or when the image of a profession as a whole is degraded (Cohen & Garcia, 2005). For example, nurses may feel undervalued relative to physicians in healthcare; administrative staff may feel undervalued relative to tenured professors in academia; and (in cases we study here) 911 dispatchers or correctional officers may feel undervalued relative to police officers.

We hypothesize that if workers face workplace identity threat, they may be more susceptible to burnout. In turn, cultivating a strong sense of social belonging within the peer group may reduce burnout and identity threat. There is some evidence on this relationship in other fields. For example, increasing identification with other women helps women cope with a “chilly climate” in STEM fields (Walton, Logel, Peach, Spencer, & Zanna, 2015). We posit that through a similar mechanism, belonging-affirmation exercises will strengthen in-group social relationships and subsequently reduce burnout.

Self-affirmation techniques ask people to reflect on their values and positive attributes, drawing on the observation that people are motivated to protect their sense of self-worth (Steele, 1988). Affirmation exercises have been shown to alleviate stress (Creswell et al., 2005), improve academic performance of stigmatized groups (G. L. Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009), and reduce avoidance of potentially threatening health information (Howell & Shepperd, 2012). Recent evidence also indicates that self-affirmation exercises are particularly effective as belonging-affirmation exercises, when respondents reflect on social bonds. The power of belonging-affirmation exercises may arise because individuals' sense of identity reflects social relationships (Mead, 1934). For example, when students are asked to affirm their values, their reflections often spontaneously focus on social relationships (Creswell et al., 2007). Therefore, explicitly affirming social bonds may shield individuals against identity threat and reduce the negative impact of adversity on self-worth; social belonging may be the “key ingredient” in the efficacy of affirmation exercises (Shnabel, Purdie-Vaughns, Cook, Garcia, & Cohen, 2013). Put differently, the existing education psychology literature suggests that self-affirmation exercises may be most effective when they are belonging-affirmation exercises, but we have little evidence whether these same mechanisms can play a role in the workplace. We build upon this literature by examining whether belong-affirmation exercises at work can serve as a buffer against workplace identity threat and ultimately burnout.

First, we establish that higher levels of workplace identity threat and lower social belonging are associated with higher rates of burnout in a survey of correctional officers (“deputies”) in one major US city (n = 175).

Second, we conduct a multi-city randomized controlled trial (RCT) among 911 dispatchers (n = 536) to measure whether a light-touch intervention intended to affirm social belonging causally impacts burnout and turnover. Consistent with greater social belonging reducing burnout, we find our intervention significantly reduced burnout and resignations over a six-month period.

Finally, we conduct an online experiment (n = 497) of workers in diverse occupations in order to more carefully explore the psychological mechanisms underlying our experimental results. We find evidence consistent with our hypotheses: those who were nudged by our belonging-affirmation intervention show higher levels of social belonging and lower levels of workplace identity threat on a wide variety of validated measures.

STUDY #1: Social belonging, workplace identity threat, and burnout

We first examine the association between social belonging, workplace identity threat, and burnout by presenting results of a survey of correctional officers (“deputies”) in a large US city.

SETTING AND CONTEXT

Correctional officers in our setting work in a county jail or detention center and are responsible for processing inmates, transporting inmates between facilities, investigate incidences occurring within the facility, and searching individuals or vehicles for dangerous items. The nature of their work makes them particularly susceptible to burnout. Approximately two-thirds have experienced and/or witnessed violence, shifts are typically 10 to 12-hours, and workers often have no autonomy over their schedule or job duties on any given day. Previous research also suggests that correctional officers face high levels of workplace-related stress, depression, and PTSD (Lerman, 2017), and the average life expectancy of a correctional officer in the U.S. is 59 years.

METHODS

This survey was part of a quality improvement project, in collaboration with a large US Sheriff's Department, where deputies' experiences are similar to national averages: 66% of deputies in our sample have experienced and/or witnessed violence, 40% leave their job within two years, and as we show below, many face severely high rates of burnout. The survey was open for three weeks in late October 2019 and

asked respondents questions on demographic characteristics, burnout, attitudes towards the job, and attitudes towards incarcerated people. The full survey can be found in Appendix Table 1.

We measured burnout using the Copenhagen Burnout Inventory (CBI), a validated survey consisting of 19 questions intended to measure burnout in personal-, work-, and client-related domains (Kristensen et al. 2005). Each question scored on a 5-point Likert scale, and overall burnout was calculated as the average across all questions, ranging from 0 (least burnt out) to 100 (most burnt out). The full burnout scale is listed in Appendix Table 2.

Respondents were then asked to indicate the extent to which they felt deputies, supervisors, sheriff department leadership, the city population, and family and friends understood and appreciated the challenges they faced at work in order to obtain a measure of workplace identity threat. Specifically, the survey asked respondents to what extent they agreed with the following questions, coded on a 10-point scale from 1 = don't understand/agree at all to 10 = understand/agree very much. In order to obtain a measure of social belonging, respondents were asked two questions, drawing on literature, used by Walton and Cohen (2007) and Wright et al. (2006), that asked whether respondents felt they had someone at work to talk to and whether they felt like they didn't belong, when something bad happens at work.

While response rates vary by question, 175 workers responded to at least some survey questions (response rate = 21 percent). About three-quarters of this sample is male, 70 percent have less than a four-year degree, and more than half are 45 years old or younger. This sample is also racially diverse: 40 percent are non-Hispanic white, approximately 7 percent are black, and 15 percent identify as Hispanic. Compared to all department employees, respondents are slightly older and have longer tenures, but are similar on gender and racial/ethnic dimensions.

**Table 1: Descriptive Statistics, Deputies
(Study #1)**

	(1) Survey respondents	(2) All city deputies
Male	0.720	0.698
White, non-Hispanic	0.411	0.496
Black, non-Hispanic	0.074	0.158
Hispanic	0.149	0.278
Ages 21-45	0.543	0.639
Ages 46-65	0.411	0.361
<= HS education	0.103	n/a
BA+	0.286	n/a
Observations	129	[excluded]

Notes: Table shows means for correctional officer respondents (Study #1) who provided demographic information (column (1)) and demographics for all deputies in the city (column (2)). Educational attainment is unavailable for the full sample, and total number of employees is suppressed for confidentiality.

RESULTS

We conduct multivariate regression analysis to examine the association between perceived social belonging and burnout in this population, controlling for employee gender, age, race and ethnicity, and tenure, and whether there is a valid response for each demographic characteristic.

Burnout is high among this population: Respondents' average burnout score was approximately 63, and less than 15 percent had a score below 50 ("low burnout"). Appendix Figure 1 shows the full distribution. These levels exceed those found among other front-line occupations, including nurses (Greenglass, Burke, & Fiksenbaum, 2001; Poncet et al., 2007), physicians (Embriaco, Papazian, Kentish-Barnes, Pochard, & Azoulay, 2007), and teachers (Hakanen, Bakker, & Schaufeli, 2006).

Table 2 shows that lower workplace identity threat is significantly associated with lower levels of burnout. For example, a one point increase in feeling understood by any group reduces burnout between 1.0 to 2.2 points on the CBI (columns (1)-(5)) and a 1 standard deviation increase in feeling understood reduces burnout by approximately 8.8 points (column (6)).

**Table 2: Association between Workplace Identity Threat and Burnout
(Study #1)**

	(1) CBI	(2) CBI	(3) CBI	(4) CBI	(5) CBI	(6) CBI
Group	Fellow deputies	Supervisors	DSD leadership	City residents	Family and friends	Composite index
Feel understood by...	-1.223* (0.598)	-0.970* (0.452)	-2.112*** (0.437)	-2.206** (0.673)	-1.051* (0.419)	
Composite index						-8.819*** (1.590)
CBI mean (100 point scale)	63.280	63.460	63.460	63.460	63.280	63.460
Average agree (10 point scale)	8.512	5.698	3.130	2.278	6.482	-0.003
N	170	169	169	169	170	169

Notes: Table shows the association between workplace identity threat and burnout among deputies in a large US city (Study #1). Workplace identity threat is measured as agreeing that each group understands the professional role and challenges of deputies (10 point scale, columns 1-5) or a standardized identity threat index (column 6). Burnout is measured as the composite CBI score (100 point scale). Robust standard errors in parentheses.

Table 3 shows a significant and negative correlation between perceptions of social belonging and burnout. Column (1) shows that having someone at work to talk to reduces burnout by 2.6 points, while not doubting belonging in the face of adversity reduces burnout by 4.2 points (column (2)). Combining both questions in an index similar to Anderson 2008 and Katz et al. 2006 indicates that a 1 standard deviation increase in social belonging reduces burnout about 5.2 points.¹

¹ We calculate the index as $Index_i = \frac{1}{5} \sum_{k=1}^5 (Q_{ki} - \bar{Q}_k) / \sigma_k$ for individual i based on responses to each question Q_k in columns (1)-(5). \bar{Q}_k is the question-specific average response across all respondents and σ_k is the corresponding standard deviation.

Table 3: Association between Social Belonging and Burnout
(Study #1)

	(1) CBI	(2) CBI	(3) CBI
Someone at work to talk to	-2.597** (0.791)		
When something bad happens, I feel like I don't belong (reverse scale)		-4.162*** (0.964)	
Composite index			- 5.249*** (1.175)
CBI mean (100 point scale)	170	171	170
Average agree (10 point scale)	63.261	63.261	63.261
N	3.259	4.029	3.641

Notes: Table shows the association between social belonging and burnout among deputies in a large US city (Study #1). Social belonging is measured as the extent to which respondents feel like they have someone to talk to at work (column (1)), whether they feel like they belong when something bad happens (reverse scale, column (2)), or a standardized index of both questions (column (3)). Burnout is measured as the composite CBI score (100-point scale). Robust standard errors in parentheses.

STUDY #2: Field experiment to affirm social belonging in the workforce

The survey results in Study #1 show that feeling valued and like one belongs are significantly negatively correlated with burnout. These patterns suggest that workplace interventions that affirm social belonging could reduce burnout. Study #2 tests the causal direction of this hypothesis with a multi-city field experiment of 911 dispatchers.²

SETTING AND CONTEXT

911 dispatchers have inherently stressful jobs. These workers answer approximately 2,400 calls a year (NENA, 2019; BLS, 2018), and often have to make life-or-death decisions in minutes, while also managing the emotions of call-makers and communicating quickly and accurately with officers they

² Cities include Albuquerque, NM; Cambridge, MA; Glendale, AZ; Greensboro, SC; Mesa, AZ; Portland, OR; Salt Lake City, UT; Tempe, AZ; and West Palm Beach, FL.

dispatch. This population has been dubbed the “forgotten victim” when it comes to stress in policing (Sewell & Crew, 1984) because although they face much of the same trauma as emergency responders or law enforcement officers, they are considered clerical workers, and so do not get as much formal support, benefits or recognition for their work. Recent studies report high levels of alcohol abuse, PTSD, and depression among this population (Lilly, London, & Mercer, 2016). In qualitative interviews, 911 dispatchers and their supervisors noted that burnout was commonly discussed as “part of the job,” and a common reason why people leave the job.

METHODS

We collaborated with nine mid-sized US cities and implemented a two-arm randomized controlled trial, stratified by city. All 911 dispatchers that were employed at the time of randomization were included in the experiment (n=536).

To maximize statistical power, participants in each city were matched into pairs based on the amount of sick leave they had taken over the previous six months. Members of each pair were randomized into treatment or control with equal probability. Participants were blinded on the scope and nature of the intervention.

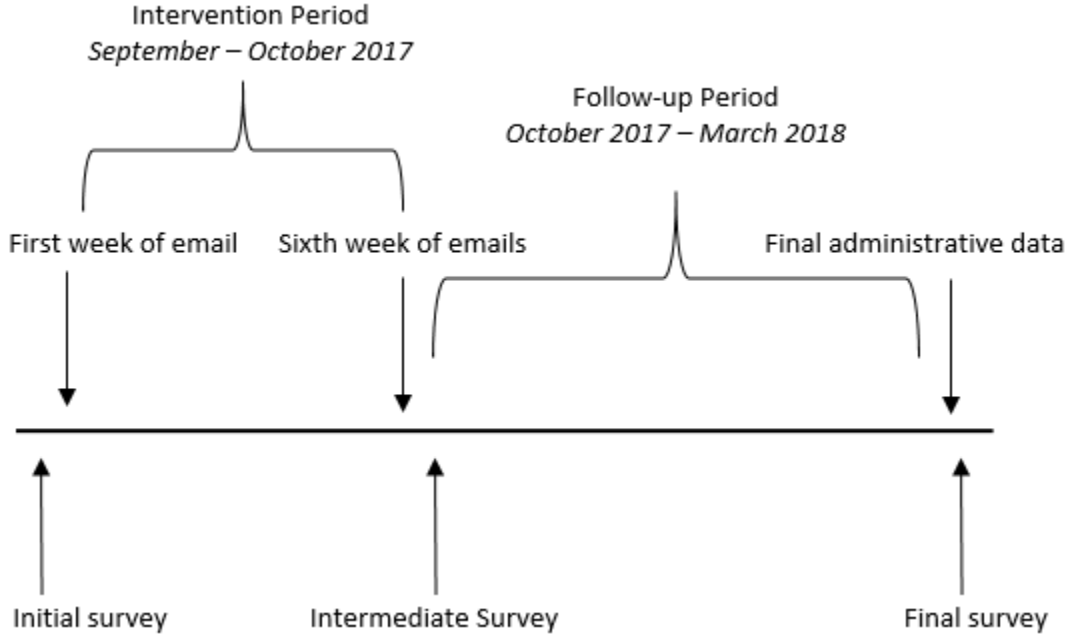
The intervention consisted of six weekly emails that a supervisor or other department leader in each city sent to the dispatchers who were assigned to the treatment group. Each email (after the first one) included two components: a story from another dispatcher and a prompt nudging workers to reflect on their common positive professional experiences. The emails were framed as an opportunity for participants to give advice and support to newer colleagues, and aimed to affirm social belonging by prompting respondents to reflect on how their experiences could support their peers.

This intervention follows recent work showing that relationships can be built through reciprocal sharing, including online messaging (Carpenter and Greene 2015) as well as evidence that advice-giving is beneficial for the advice-giver as a self-reflection opportunity (Eskreis-Winkler, Milkman, Gromet, & Duckworth, 2019; Belle, 2014). Given that 911 dispatchers are an undervalued group, we expected these prompts to affirm social belonging in two ways. First, it provided the opportunity for workers to share their professional experiences with others, thus elevating the value of their work. Second, it made clear that there *was* a professional community of other dispatchers who understood the challenges of the job and could be a potential community.

The control group received a simplified version of the first week's email to inform them of the multi-city collaboration, but did not receive additional emails. Appendix Table 3 provides complete language for each week's email.

Our outcomes of interest are employee burnout, measured by survey data, and employee retention and sick leave, which was collected via administrative data. We conducted a survey of all participants at three points: before the intervention was launched, immediately following the six-week intervention, and four months after the intervention finished. Administrative records on resignations and leave taken were collected for the full six-week trial and four-month follow-up period. Figure 1 outlines the timing of the intervention and follow-up period.

**Figure 1: Social Belonging Intervention
(Study #2) Timing**



Notes: Figure shows the timeline for the multi-city social belonging intervention. See text for details.

All statistical analyses were conducted using Ordinary Least Squares. For each individual i in city c , we measured the effect of the intervention on individual outcomes (burnout and resignations), y_{ic} as:

$$y_{ic} = \beta_i treat_{ic} + x'_{ic}\theta + \delta_c + \varepsilon_{ic} \quad (1)$$

where $treat_{ic}$ is a binary variable equal to one if the individual was assigned treatment; x'_{ic} is a vector of baseline demographic characteristics: race, gender, tenure, and pre-period leave; δ_c is a vector of city fixed effects; ε_{ic} is an i.i.d. error term. All inference is conducted using Eicker-Huber-White robust standard errors.

We measure burnout using the CBI and report the three CBI sub-categories (personal-, work-, and client-related burnout), as well as the composite score at two points: immediately following the six-week intervention and four months after the intervention had ended.

In addition to self-reported burnout, we examine turnover and leave over the six-week treatment period and full six-month (24 weeks) period through March 2018 using administrative data from each city.

In exploratory analysis, we also conducted subgroup analysis by gender and race. We are limited to only exploring racial and gender differences using the survey data, given that not all cities maintain administrative demographic information.

RESULTS

Table 4, Panel A shows the baseline characteristics of all participants by treatment and control group. In the five cities for which administrative demographic information is available, more than three quarters of the sample is female, and nearly 80 percent is white. Our sample consists of more women than the national dispatcher workforce (54 percent), but is of a similar racial composition. On average, participants had held their position for 10 years and took an average of 1.5 hours of sick leave a week in the six months before the trial began. Chi-squared tests on each variable confirm that treatment and control are balanced across these characteristics.

The average response rate for the interim and final burnout surveys was approximately 28 percent. Table 4, Panels B and C show the treatment and control groups have similar demographic characteristics in both survey waves, and these characteristics are also similar to the full participant sample. These patterns mitigate concerns of response rate bias, suggesting that any differences in reported burnout are due to the intervention itself, rather than systematic differences in survey response.

**Table 4: Demographic and Baseline Characteristics by Treatment Group
(Study #2)**

	(1)	(2)	(3)	(4) p-value: Control = Treatment
	All	Control	Treatment	
<i>Panel A: All trial participants</i>				
Female	0.776 (0.417)	0.797 (0.404)	0.757 (0.430)	0.355
White	0.799 (0.402)	0.794 (0.407)	0.804 (0.399)	0.860
Years employed	9.140 (8.369)	8.710 (8.054)	9.555 (8.662)	0.324
Average pre-trial weekly sick hours	1.484 (1.602)	1.473 (1.708)	1.494 (1.495)	0.878
Observations	536	265	271	536
<i>Panel B: Interim CBI burnout survey</i>				
Female	0.844 (0.365)	0.832 (0.376)	0.865 (0.345)	0.583
White	0.714 (0.453)	0.716 (0.453)	0.712 (0.457)	0.957
Years employed	11.220 (8.189)	10.800 (8.196)	12.010 (8.199)	0.397
Observations	147	95	52	147
<i>Panel C: Final CBI burnout survey</i>				
Female	0.815 (0.390)	0.814 (0.391)	0.815 (0.391)	0.982
White	0.730 (0.445)	0.724 (0.450)	0.738 (0.443)	0.845
Years employed	11.900 (8.492)	11.000 (7.823)	13.090 (9.231)	0.144
Observations	152	87	65	152

Notes: This table reports means and standard deviations of the full (Study #2) sample in Panel A, and interim (final) burnout survey respondents in Panel B (C). Columns (1)-(4) describe trial participants -- the full ITT sample. Column (1) summarizes the full sample, and columns (2) and (3) describe the control and treatment groups, respectively. Column (4) reports p-values for the null hypothesis of perfect randomization.

Table 5 examines how the intervention affected self-reported burnout. Immediately after the trial ended, treated employees reported lower burnout, although differences are not statistically significant (panel A). Six months after the first email was sent, however, the social belonging intervention significantly reduced burnout for each of the sub-categories and the composite score (panel B). These effects are large in magnitude and statistically significant; the intervention reduced personal-related burnout by about 9 points, work-related burnout by 7 points, and client-related burnout by approximately 9 points. The composite burnout index fell more than 8 points, or more than 0.4 standard deviations.

Table 5: Copenhagen Burnout Index, Full Sample
(Study #2)

	(1) Own	(2) Work	(3) Client	(4) Total
<i>Panel A: Interim (after all emails sent)</i>				
Treatment	-5.815 (3.782)	-3.908 (3.998)	-0.976 (4.114)	-3.566 (3.621)
Observations	147	147	147	147
Control group mean	55.860	50.708	42.675	49.748
Effect size	-0.279	-0.167	-0.042	-0.178
R-squared	0.211	0.196	0.213	0.236
<i>Panel B: Final (4 months after all emails sent)</i>				
Treatment	-8.935** (3.448)	-7.008* (3.724)	-9.194** (4.150)	-8.379** (3.368)
Observations	152	152	152	152
Control group mean	56.734	55.049	44.109	51.964
Effect size	-0.429	-0.300	-0.395	-0.418
R-squared	0.356	0.337	0.318	0.345

Notes: This table reports OLS coefficient estimates robust standard errors in parentheses). The dependent variable is the burnout score, either by subindex (columns (1) - (3)) or overall (column (4)). Burnout score ranges from 0 to 100. Panel (A) reports scores immediately after the final email was sent in Study #2; Panel (B) reports scores 4 months after the final email was sent. Treatment is a dummy for the social support treatment. All specifications include demographic controls for race, gender, tenure, as well as city fixed effects. * p < 0.10, ** p < 0.05, *** p < 0.01.

As the findings in Table 5 suggest an improvement in worker well-being from lower burnout, we next examine whether these self-reports translate into behavioral outcomes from an employer’s perspective, namely resignations. Table 6 estimates Equation (1) using administrative data on resignations. We find that the intervention reduced resignations among employees who remained employed throughout the intervention (i.e., those exposed to the full treatment) by 3.4 percentage points six months after the first email was sent, relative to a control group mean of 5.1 percent (column 1). This result is unchanged when we exclude controls for demographic characteristics and fixed effects for each city (results available upon request). When we include respondents who resigned part-way through the treatment (and therefore did not receive the full intervention), we find a smaller, and insignificant reduction in resignations (column (2)). This lagged response of the treatment may be due to requirements regarding providing notices of leave, the cumulative effect of receiving additional emails, or a combination of factors. In additional results, we do not find any significant change in sick leave use.

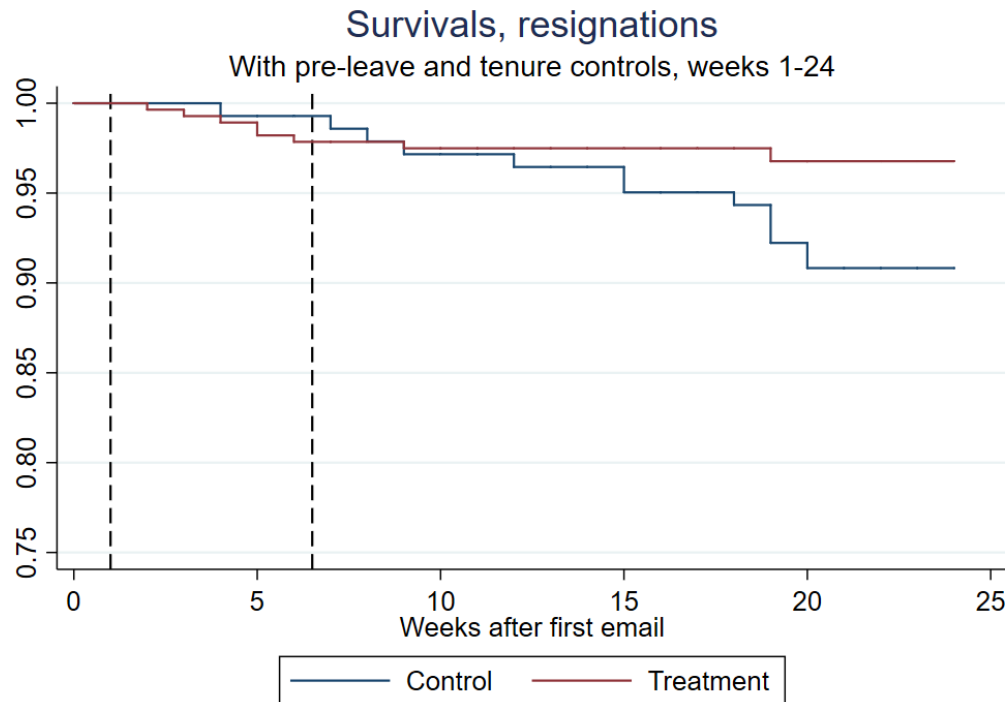
**Table 6: Resignations, by Treatment Dosage
(Study #2)**

VARIABLES	(1) Resigned	(2) Resigned
Treat	-0.034** [0.016]	-0.017 [0.019]
Observations	511	536
Sample	Full trial	Trial
Control group	participants	participants
mean	0.051	0.060

Notes: This table reports OLS coefficient estimates (robust standard errors in brackets). The dependent variable is a binary variable equal to 1 if the employee resigned his or her position in Study #2. Column (1) includes all employees assigned treatment or control; column (2) limits the sample to those who remained employed throughout the trial (7 weeks after randomization). All specifications include controls for pre-period leave; city fixed effects; and demographic controls for race, gender, and tenure. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

To further explore the timing of the treatment effect, Figure 2 presents a Kaplan-Meier curve illustrating that the treatment group was more likely to resign in the first few weeks of the trial (although not significantly). In the four months after the intervention ended, however, resignations remained relatively flat for the treatment group, but continued to increase among control group members. In additional results available upon request, we confirm these patterns are not driven by the experiences of any single city.

Figure 2: Kaplan-Meier Survival Plot for Number of Employees Resigning their Position by Treatment Assignment (Study #2)



Notes: Figure shows a Kaplan-Meier curve on the probability of resigning for 911 dispatchers in the control and treatment groups up to 24 weeks after the first email was sent (Study #2). Left dashed line denotes week one when the first email was sent; right dashed line denotes week 6 when the final email was sent. Controls include average weekly leave prior to randomization and the number of years in service.

STUDY #3: Online field experiment to disentangle possible mechanisms

METHODS

In order to explore potential mechanisms underlying the efficacy of the belonging-affirmation intervention in Study #2, we conducted an online experiment with a sample of Amazon Mechanical Turk (MTurk) workers (N = 497). Only workers who were also employed (full or part-time) at a job outside of MTurk were eligible to complete the survey. After passing an attention check, we randomly assigned eligible workers with probability 0.5 to answer one of the prompts provided to the treatment group in Study #2. Specifically, participants assigned to the treatment group were shown a prompt similar to the week #5 prompt in Study #2 (see Appendix Table 3). They were asked to give advice to a new colleague at their job, and to describe how people at their job support one another. Participants assigned to the control group were asked to provide general advice to a teenager starting a new school. We then asked both groups a series of

questions related to social belonging and workplace identity threat.³ If our treatment affirms social belonging and reduces workplace identity threat, we should observe higher reported belonging among the treatment group and greater perceptions that others understand their professional role.

RESULTS

Consistent with our treatment affirming social belonging, in Table 7 panel (a) we show that workers who were prompted to provide advice to a new coworker reported higher levels of social belonging on all dimensions, including feeling connected to coworkers (column (1)), not feeling like one doesn't belong when facing adversity (column (2)), having a colleague to talk to (column (3)), and feeling a sense of belonging (column (4)). On a composite index of social belonging and workplace identity threat (as in Anderson 2008 and Katz et al. 2006), belonging-affirmation is associated with an 0.25 standard deviation increase in social belonging (column (5)).

We also explore whether participants who were asked to provide advice to a new colleague had lower levels of workplace identity threat in panel (b). Consistent with greater social belonging reducing workplace identity threat, we find the treatment increased perceptions that leadership and coworkers understand and value respondents' professional role. On a composite index, our treatment is associated with a 0.28 standard deviation decrease in identity threat (column (5)).

³ The full text of all questions is provided in Appendix Table 3.

TABLE 7: Belonging Affirmation Increases Social Belonging and Reduces Workplace Identity Threat (Study #3)

	(1)	(2)	(3)	(4)	(5)
Panel a: Social belonging					
	Connect	Don't belong (reversed)	Someone to talk to	Feel belong	Belonging index
Treat	0.273*** (0.095)	0.388*** (0.100)	0.193* (0.104)	0.331*** (0.093)	0.270*** (0.068)
Observations	497	497	497	497	497
R-squared	0.044	0.132	0.059	0.069	0.079
CG mean	3.600	3.293	3.724	3.761	-0.129
Panel a: Workplace identity threat					
	Leadership understands	Others understand	Feel valued	Feel listened to	Identity threat index*(-1)
Treat	0.259** (0.103)	0.310*** (0.083)	0.228** (0.093)	0.234** (0.097)	0.250*** (0.076)
Observations	497	497	497	497	497
R-squared	0.052	0.058	0.043	0.031	0.054
CG mean	3.622	3.725	3.762	3.560	-0.120

Table shows correlation between treatment (providing advice to new coworker) and measures of social belonging for the online field experiment in Study #3. Columns (1) through (4) provide responses on a 5-point Likert scale indicating the extent to which respondents agreed with the following statements. In panel (a) Column (1): I feel connected to the people I work with; Column (2): When something bad happens at work, I feel that maybe I don't belong in my job (Reverse scale); Column (3): There is someone at work I can talk to about my day to day problems if I need to; Column (4): I feel like I belong at work. In panel (b): Column (1): The leadership at my job recognizes the importance of my work; Column (2): Others at my job recognize the importance of my work. Column (3): I feel valued at work; Column (4): I feel listened to at work. Column (5) reports standardized index of all measures in columns (1-4), respectively, with a mean of 0 and standard deviation of one. All specifications control for age, gender, parental status, full-time status, race/ethnicity, and educational attainment. Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

DISCUSSION

Three distinct literatures have established that identity threat worsens performance, belonging-affirmation exercises improve individual outcomes, and that social support is correlated with lower burnout. Yet, while the importance of belonging at work and the alarming rise in burnout have both been widely recognized, there is limited evidence that combines the psychological evidence around affirmation and belonging with the organizational research on burnout, particularly in contexts where individuals face workplace identity threat.

This paper reports results from three studies examining whether these patterns affect outcomes in the workplace. We show that employees who face workplace identity threat also report low levels of social belonging and high burnout, suggesting that targeting social belonging may be one way to reduce burnout and workplace identity threat. In an important contribution, we conduct a field experiment which, to our knowledge, is the largest of its kind, and find that a low-cost belonging-affirmation intervention can substantially reduce burnout and resignations. In a follow-up study, we provide evidence consistent with our intervention improving social belonging and reducing identity threat.

This research makes three contributions to the existing literature. First, we expand the literature on identity threat (Steele and Aronson, 1995; 2004) to consider the effects of the specific stigmatization or marginalization that arises from being undervalued as a professional group. We find strong evidence that feeling understood and valued is correlated with burnout in both field and online laboratory environments.

Second, we contribute directly to the literature on burnout and provide *causal* evidence for the Job Demands-Resources (JD-R) model. We document that facilitating social connectedness can have persistent effects, and these benefits translate into improved organizational performance in the medium-term. While the reported rise in burnout has received significant attention in both academic journals and practitioner press, almost all studies of burnout interventions are correlational (Maslach & Schaufeli, 2017) and previous RCTs show mixed evidence (Westermann, Kozak, Harling, & Nienhaus, 2014), often with limited statistical power (Awa, Plaumann, & Walter, 2010). This study provides both methodological and substantive contributions to the existing literature by using a much larger sample, testing a virtual light-touch social belonging intervention, and measuring both self-reported well-being and actual employee behavior for a relatively longer period.

Third, this study contributes to the broader literature on affirmation exercises facilitating greater social belonging. Previous evidence shows that written reflections aiming to affirm values often naturally turn to

affirming social connections, and these exercises in turn improve performance. This study builds on the existing work by explicitly testing the relationship between belong-affirmation exercises and burnout without concerns of selection bias in who has social connections to affirm.

The paper also leaves some questions to future research. We find reductions in burnout increase over time and the effect of our intervention on resignations is clearest in the medium-term, post-intervention period. There are several explanations for this finding. First, as employees are required to give at least two weeks advance notice on resignations, it is likely that the resignations that occurred in the first weeks of the intervention reflect decisions that happened pre-intervention, and so we expect to not observe a treatment effect in early weeks. However, it is also possible that multiple emails (a more intensive intervention) are required for the treatment to alter perceived self-worth and belonging, and therefore, resignations. If there is path dependence in developing a sense of belonging, it is logical that effects should appear over time and not immediately after an intervention ends (Yeager & Walton, 2011). Another limitation of the study is that we do not capture spillovers to control group members. If improving the work environment for half of a dispatch center benefits non-treated employees in the center as well, our estimates understate the full effect of introducing such a social-belonging intervention organization-wide. Last, to maintain anonymity, we do not know whether active participation (e.g., sharing stories) provides larger benefits than passive participation (e.g., receiving emails). These open questions leave substantial room for future work.

The study has clear implications for policymakers and practitioners. First, in the ongoing debate about whether burnout is best addressed at the individual- or systems-level (see, for example, Wallace et al., 2009), we examine an effective behaviorally-informed intermediary solution where systems are set up for individuals to support each other. Second, the study shows meaningful cost savings for organizations due to reductions in turnover: in our setting, scaling this nearly zero-cost intervention to all employees could save a city with 100 workers more than \$170,000, or approximately three full-time equivalent staff, per year. More broadly, given that workplace stress is associated with more than 120,000 deaths per year and more than 5 percent of annual health care costs in the U.S., encouraging a greater sense of social belonging may provide additional savings that are not captured in this calculation (Goh et al., 2016). Ultimately, this study demonstrates the power and feasibility of running behaviorally-informed field experiments in real organizations on real organizational outcomes (Hauser, Linos, & Rogers, 2017; Pfeffer & Sutton, 2000). Our results suggest that even low-cost approaches to improving employees' work experience can meaningfully benefit both employees and their organizations.

Declaration of Conflicting Interests

The author(s) declared that there were no conflicts of interest with respect to the authorship or the publication of this article.

Open Practices

Study 1 is a baseline survey conducted as part of a QA/QI project for a city government. Study 2 is registered on the Open Science Framework portal at [removed for anonymity purposes]. Data for both studies belongs to government agencies and because of the nature of employee data and the data sharing agreement that allowed for this project, any requests for the data should be directed to the relevant government agencies. Study 3 is from an online field experiment, pre-registered at [removed for anonymity purposes]. The materials used are available in the appendix and any requests for the scripts used for the analysis can be sent via email to the lead author at [removed for anonymity purposes].

Ethical Considerations

The study was reviewed and received IRB approval at [removed for anonymity purposes] but was designed as a quality improvement study for the cities involved.

REFERENCES

- Anderson, M. L. (2008). Multiple inference and gender differences in the effects of early intervention: A reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects. *Journal of the American Statistical Association*, 103(484), 1481-1495
- Awa, W. L., Plaumann, M., & Walter, U. (2010). Burnout prevention: A review of intervention programs. *Patient education and counseling*, 78(2), 184-190.
- Bakker, A. B., Demerouti, E., & Euwema, M. C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology*, 10(2), 170–180.
- Baruch-Feldman, C., Brondolo, E., Ben-Dayana, D., & Schwartz, J. (2002). Sources of social support and burnout, job satisfaction, and productivity. *Journal of occupational health psychology*, 7(1), 84.
- Bellé, N. (2014). Leading to make a difference: A field experiment on the performance effects of transformational leadership, perceived social impact, and public service motivation. *Journal of Public Administration Research and Theory*, 24(1), 109-136.
- Borritz, M., Rugulies, R., Christensen, K. B., Villadsen, E., & Kristensen, T. S. (2006). Burnout as a predictor of self-reported sickness absence among human service workers: prospective findings from three year follow up of the PUMA study. *Occupational and Environmental Medicine*, 63(2), 98–106.
- Broadhead, W. E., Kaplan, B. H., James, S. A., Wagner, E. H., Schoenbach, V. J., Grimson, R., ... Gehlbach, S. H. (1983). The epidemiologic evidence for a relationship between social support and health. *American Journal of Epidemiology*, 117(5), 521–537.
- Carpenter A, Greene K. (2015) *Social Penetration Theory*. *The International Encyclopedia of Interpersonal Communication*, 1–4.
- Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a New General Self-Efficacy Scale. *Organizational Research Methods*, 4(1), 62–83.
- Cohen, G. L., & Garcia, J. (2005). “I Am Us”: Negative Stereotypes as Collective Threats. *Journal of Personality and Social Psychology*, 89(4), 566–582.
- Cohen, G. L., Garcia, J., Purdie-Vaughns, V., Apfel, N., & Brzustoski, P. (2009). Recursive Processes in Self-Affirmation: Intervening to Close the Minority Achievement Gap. *Science*, Vol. 324, pp. 400–403. <https://doi.org/10.1126/science.1170769>
- Creswell, J. D., Lam, S., Stanton, A. L., Taylor, S. E., Bower, J. E., & Sherman, D. K. (2007). Does self-affirmation, cognitive processing, or discovery of meaning explain cancer-related health benefits of expressive writing? *Personality & Social Psychology Bulletin*, 33(2), 238–250.
- Creswell, J. D., Welch, W. T., Taylor, S. E., Sherman, D. K., Gruenewald, T. L., & Mann, T. (2005). Affirmation of personal values buffers neuroendocrine and psychological stress responses. *Psychological Science*, 16(11), 846–851.

- Dai, H., Milkman, K. L., Hofmann, D. A., & Staats, B. R. (2015). The impact of time at work and time off from work on rule compliance: the case of hand hygiene in health care. *The Journal of Applied Psychology*, 100(3), 846–862.
- Demerouti, E., & Bakker, A. B. (2011). The job demands-resources model: Challenges for future research. *SA Journal of Industrial Psychology*, 37(2), 01-09.
- Embriaco, N., Papazian, L., Kentish-Barnes, N., Pochard, F., & Azoulay, E. (2007). Burnout syndrome among critical care healthcare workers. *Current Opinion in Critical Care*, 13(5), 482–488.
- Eskreis-Winkler, L., Milkman, K. L., Gromet, D. M., & Duckworth, A. L. (2019). A large-scale field experiment shows giving advice improves academic outcomes for the advisor. *Proceedings of the National Academy of Sciences*, 116(30), 14808-14810.
- Garman, A. N., Corrigan, P. W., & Morris, S. (2002). Staff burnout and patient satisfaction: evidence of relationships at the care unit level. *Journal of Occupational Health Psychology*, 7(3), 235–241.
- Goh, J., Pfeffer, J., & Zenios, S. A. (2016). The Relationship Between Workplace Stressors and Mortality and Health Costs in the United States. *Management Science*, 62(2), 608–628.
- Greenglass, E. R., Burke, R. J., & Fiksenbaum, L. (2001). Workload and burnout in nurses. *Journal of Community & Applied Social Psychology*, Vol. 11, pp. 211–215. <https://doi.org/10.1002/casp.614>
- Hakanen, J. J., Bakker, A. B., & Demerouti, E. (2005). How dentists cope with their job demands and stay engaged: the moderating role of job resources. *European Journal of Oral Sciences*, 113(6), 479–487.
- Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology*, 43(6), 495–513.
- Hauser, O. P., Linos, E., & Rogers, T. (2017). Innovation with field experiments: Studying organizational behaviors in actual organizations. *Research in Organizational Behavior*, 37, 185-198.
- Howell, J. L., & Shepperd, J. A. (2012). Reducing information avoidance through affirmation. *Psychological Science*, 23(2), 141–145.
- Katz, L. F., Kling, J. R., & Liebman, J. B. (2001). Moving to opportunity in Boston: Early results of a randomized mobility experiment. *The Quarterly Journal of Economics*, 116(2), 607-654.
- Kim, B., Jee, S., Lee, J., An, S., & Lee, S. M. (2018). Relationships between social support and student burnout: A meta-analytic approach. *Stress and Health*, 34(1), 127-134.
- Kristensen, T. S., Borritz, M., Villadsen, E., & Christensen, K. B. (2005). The Copenhagen Burnout Inventory: A new tool for the assessment of burnout. *Work & Stress*, 19(3), 192–207.
- Lilly, M. M., London, M. J., & Mercer, M. C. (2016). Predictors of Obesity and Physical Health Complaints Among 911 Telecommunicators. *Safety and Health at Work*, 7(1), 55–62.
- Lloyd, C., King, R., & Chenoweth, L. (2002). Social work, stress and burnout: A review. *Journal of Mental Health*, 11(3), 255–265.

- Maslach, C., & Schaufeli, W. B. (2017). Historical and conceptual development of burnout. In *Professional burnout* (pp. 1-16). Routledge.
- Mead, G. H. (1934). *Mind, self and society* (Vol. 111). University of Chicago Press.: Chicago.
- Poncet, M. C., Toullic, P., Papazian, L., Kentish-Barnes, N., Timsit, J.-F., Pochard, F., ... Azoulay, E. (2007). Burnout syndrome in critical care nursing staff. *American Journal of Respiratory and Critical Care Medicine*, 175(7), 698–704.
- Pfeffer, J., & Sutton, R. I. (2000). *The knowing-doing gap: How smart companies turn knowledge into action*. Harvard business press.
- Richer, S., & Vallerand, R. (1998). Construction and validation of the ESAS (The Relatedness Feelings Scale). *European Review of Applied Psychology = Revue Européenne de Psychologie Appliquée*, 48, 138–138.
- Richman, L. S., & Leary, M. R. (2009). Reactions to discrimination, stigmatization, ostracism, and other forms of interpersonal rejection: A multimotive model. *Psychological Review*, Vol. 116, pp. 365–383. <https://doi.org/10.1037/a0015250>
- Russell, D. W., Altmaier, E., & Van Velzen, D. (1987). Job-related stress, social support, and burnout among classroom teachers. *Journal of applied psychology*, 72(2), 269.
- Salvagioni, D. A. J., Melanda, F. N., Mesas, A. E., González, A. D., Gabani, F. L., & Andrade, S. M. de. (2017). Physical, psychological and occupational consequences of job burnout: A systematic review of prospective studies. *PloS One*, 12(10), e0185781.
- Sewell, J. D., & Crew, L. (1984). The forgotten victim: Stress and the police dispatcher. *FBI L. Enforcement Bull.*, 53, 7.
- Shanafelt, T. D., Balch, C. M., Bechamps, G., Russell, T., Dyrbye, L., Satele, D., ... Freischlag, J. (2010). Burnout and medical errors among American surgeons. *Annals of Surgery*, 251(6), 995–1000.
- Shnabel, N., Purdie-Vaughns, V., Cook, J. E., Garcia, J., & Cohen, G. L. (2013). Demystifying values-affirmation interventions: writing about social belonging is a key to buffering against identity threat. *Personality & Social Psychology Bulletin*, 39(5), 663–676.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of personality and social psychology*, 69(5), 797.
- Steele, C. M., & Aronson, J. A. (2004). Stereotype threat does not live by Steele and Aronson (1995) alone.
- Steele, C. M. (1988). The Psychology of Self-Affirmation: Sustaining the Integrity of the Self. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 21, pp. 261–302). Academic Press.
- Van den Broeck, A., Vansteenkiste, M., De Witte, H., & Lens, W. (2008). Explaining the relationships between job characteristics, burnout, and engagement: The role of basic psychological need

- satisfaction. *Work & stress*, 22(3), 277-294.
- Wallace, J. E., Lemaire, J. B., & Ghali, W. A. (2009). Physician wellness: a missing quality indicator. *The Lancet*, 374(9702), 1714–1721.
- Walton, G. M., & Cohen, G. L. (2007). A question of belonging: race, social fit, and achievement. *Journal of Personality and Social Psychology*, 92(1), 82–96.
- Walton, G. M., Logel, C., Peach, J. M., Spencer, S. J., & Zanna, M. P. (2015). Two brief interventions to mitigate a “chilly climate” transform women’s experience, relationships, and achievement in engineering. *Journal of Educational Psychology*, 107(2), 468.
- Westermann, C., Kozak, A., Harling, M., & Nienhaus, A. (2014). Burnout intervention studies for inpatient elderly care nursing staff: Systematic literature review. *International journal of nursing studies*, 51(1), 63-71.
- Winwood, P. C., & Winefield, A. H. (2004). Comparing Two Measures of Burnout Among Dentists in Australia. *International Journal of Stress Management*, 11(3), 282–289.
- Wright, S. L., Burt, C. D. B., & Strongman, K. T. (2006). *Loneliness in the workplace: Construct definition and scale development*. Retrieved from <http://ir.canterbury.ac.nz/handle/10092/2751>
- Wigert, B., Agrawal, S. (2018). Employee Burnout, Part 1: The 5 Main Causes. Retrieved from Gallup: <https://www.gallup.com/workplace/237059/employee-burnout-part-main-causes.aspx>
- Yeager, D. S., & Walton, G. M. (2011). Social-psychological interventions in education: They’re not magic. *Review of Educational Research*, 81(2), 267–301.