MAJOR EMPIRICAL CONTRIBUTION

Relative Importance of Incivility and Loneliness in Occupational Health Outcomes

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Abstract

Researchers have studied loneliness as a modern health epidemic which is associated with myriad negative health effects, yet the literature lacks evidence of loneliness' correlates, including incivility, in the workplace. This paper not only replicates previous work on incivility, a pervasive interpersonal workplace stressor, it also contributes novel findings on the relative importance of loneliness in explaining variance in occupational health outcomes. We tested hypotheses using two cross-sectional datasets containing data from the general working population (Sample 1) and state corrections supervisors (Sample 2). Through relative importance analyses, including relative weights analysis, we found that both general and workplace loneliness explain substantial variance in several outcomes (e.g., emotional exhaustion, depression symptoms, and turnover intentions) relative to the variance explained by workplace incivility. When controlling for perceived work stress, general loneliness appears to be more important than incivility in explaining variance in emotional exhaustion, job satisfaction, and depression symptoms.

Meaningful social connections are basic to our relationships and our sense of well-being. However, public health professionals have recognized loneliness, or "unpleasant experiences resulting from perceived social deficiencies" (Perlman & Peplau, 1981; Wright & Silard, 2020), as a growing epidemic (e.g., Scheimer & Chakrabarti,

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2020). National survey data from October 2020 show that 36% of all participants and 61% of participants age 18–25 experienced loneliness on a regular basis (Weissbourd et al., 2021). The COVID-19 pandemic has worsened loneliness for some, and reports from health insurer Cigna showed a 13% increase in loneliness between 2018 and 2020 (Demarinis, 2020). As a social institution, the workplace provides a practical setting in which loneliness-reducing interventions (e.g., job redesign) may be implemented. Work may provide one of the few, if not the only, opportunities for some working adults to experience meaningful and positive social connection. Conversely, it is possible for work events to damage existing social ties or prevent future ties from forming, potentially contributing to the experience of loneliness.

Loneliness can have harmful effects on health (e.g., Luo et al., 2012; Ong et al., 2016). In addition, isolation at work (e.g., during COVID-19: Gao & Sai, 2020) and, specifically, workplace loneliness (e.g., Ozcelik & Barsade, 2018) have been associated with adverse organizational outcomes (Ozcelik & Barsade, 2018). Organizational leaders may have an important role to play in preventing workplace loneliness and its harmful effects. However, before prevention efforts can begin, it is important for scholars and practitioners to understand loneliness and its associated constructs, including workplace mistreatment.

Researchers have linked workplace mistreatment, one potential precursor to workplace loneliness, to mental health symptoms such as anxiety and depression (e.g., Cortina et al., 2001). In addition, workplace mistreatment has been associated with organizational outcomes such as decreased job satisfaction (Ahsan et al., 2009), increased turnover intentions (Grunfeld et al., 2000), increased absenteeism, and decreased performance, often via depression and/or anxiety (Cooper & Dewe, 2008; Motowidlo et al., 1986). Incivility is one type of workplace mistreatment which does not reach the severity of overt discrimination or physical altercations. Incivility remains an important component of workplace mistreatment (Cortina, 2008) and can include acts such as exclusion, put-downs, and condescending remarks. Being a victim of workplace incivility also may be associated with the affective experience of loneliness. Incivility is an antisocial behavior that can result in social disconnection in the workplace. Furthermore, incivility in the form of exclusionary behavior can make employees feel lonely (Martin & Hine, 2005), and lonely individuals may be more likely to be targets of bullying (Dussault & Frenette, 2014).

Based on data from two samples, this study aims to replicate previous findings on incivility and outcomes. Beyond merely replicating previous work, we present a unique contribution to the literature by exploring the role of loneliness in tandem with workplace incivility. First, we review the literature on workplace incivility as a social stressor, and then we examine potential individual and organizational outcomes of incivility. We then provide background information regarding general loneliness and its correlates, as well as the construct of workplace loneliness. We propose that general and workplace loneliness often occur in tandem with incivility. It is possible that loneliness acts as a "secondary stressor" (defined as stressors which can "develop as a consequence of primary stressors;" Moran, 2014) when a social stressor, such as incivility, is present.

Workplace Incivility

Workplace mistreatment is a stressor which can occur in several forms ranging from subtle to overt. When mistreatment is subtle, it is often called incivility. Incivility is conceptually distinct from other types of workplace mistreatment such as bullying/mobbing, sexual harassment, and workplace violence (Yao et al., 2021) based on its low severity, ambiguous intent, and ability to affect targets regardless of status or social identity. Workplace incivility has been associated with a wide range of individual (Nielsen et al., 2008) and organizationally relevant outcomes (Laschinger, 2014), as described below.

Individual Outcomes: Mental Health In general, workplace stress has been associated with general psychological distress (Cortina et al., 2001), stress-related medication use (Dahl, 2011), depression and anxiety symptoms (e.g., Geldart et al., 2018), and burnout (Han et al., 2016; Rahim & Cosby, 2016). Further supporting assertions about the associations between workplace stress and mental health, a recent meta-analysis (Han et al., 2022) found sizeable average correlations between workplace incivility and depression ($\rho = 0.32$), anxiety ($\rho = 0.34$), and emotional exhaustion ($\rho = 0.44$). Considering the documented associations between workplace stressors (including incivility) and mental health outcomes, we propose the following:

Hypothesis 1a. Incivility will be positively related to depression symptoms (Sample 2).
Hypothesis 1b. Incivility will be positively related to anxiety symptoms (Sample 2).
Hypothesis 1c. Incivility will be positively related to burnout-emotional exhaustion (Samples 1 and 2).

Organizational Outcomes: Job Satisfaction, Turnover Intentions, and Absenteeism Workplace incivility is associated with several organizational outcomes, including increased turnover intentions, decreased job satisfaction, and increased absenteeism (Cortina et al., 2001; Oyeleye et al., 2013; Rahim & Cosby, 2016). Employees who are treated uncivilly may have more negative affective responses to their work, thus potentially decreasing job satisfaction and increasing the desire to withdraw from work. This withdrawal can be conceptualized in multiple ways, including absenteeism (e.g., Kivimäki et al., 2000; Sliter et al., 2012), turnover intentions (e.g., Sguera et al., 2011; Volpone & Avery, 2013), and actual turnover. Affective Events Theory states that workplace events—along with personal dispositions—can evoke affective responses at work (Weiss & Cropanzano, 1996), and incivility may be one such event which can trigger these responses (Lim et al., 2008). Indeed, research has established that incivility can be a resource drain (Porath et al., 2015) and can decrease employee performance (e.g., Nicholson & Griffin, 2015; Sliter et al., 2012). Accordingly, we propose the following:

Hypothesis 2a. Incivility will be positively related to health-related work absence (physical or mental, Sample 2).
Hypothesis 2b. Incivility will be positively related to turnover intentions (Sample 2).

Hypothesis 2c. Incivility will be negatively related to job satisfaction (Samples 1 and 2).

Overall, workplace incivility is associated with numerous harmful mental health and organizational outcomes; however, these relationships do not exist in a vacuum. We propose that the constructs of general and workplace loneliness may be associated with similar outcomes as incivility, and may explain variance in outcomes above and beyond that of incivility.

The Role of Loneliness

Loneliness is a negative, complex, and subjective experience which contains both affective and cognitive components. It has been described in the literature as an "aversive psychological state" (Ozcelik & Barsade, 2018) and the "heart of a constellation of socio-emotional states" (Erdil & Ertosun, 2011) which results from deficiency in quantity or quality of social contacts (Perlman & Peplau, 1981; Wright & Silard, 2020). Importantly, the experience of loneliness is distinct from experiences of solitude and physical isolation, which are not necessarily aversive experiences. In addition to the unpleasant experience of loneliness itself, stereotypes about lonely individuals abound. Others may perceive lonely individuals as not only lacking in social skills, but perhaps even deserving of their plight (Perlman & Peplau, 1981). Whereas workplace mistreatment is characterized by negative acts perpetrated by an external actor, loneliness is an internal experience. The lack of an external actor to blame may increase the likelihood of self-blame among lonely individuals. Indeed, researchers have conceptualized loneliness as a regulatory loop that can be difficult for individuals to eliminate, in that once one is lonely for long enough, negative thought patterns can develop which can make it difficult to socially connect (Ozcelik & Barsade, 2018).

Researchers also have framed loneliness as a stressor that is associated with negative psychological and physiological outcomes. For instance, there is evidence that loneliness is related to decreased physical and mental well-being (Cacioppo et al., 2002; Erdil & Ertosun, 2011), and individuals with high (versus low) levels of loneliness show consistently higher salivary cortisol levels, a humoral stress marker, across workdays and weekends (Okamura et al., 2011). Research also suggests that loneliness may be one cause of depression. A five-year longitudinal study used cross-lagged panel modeling to test for reciprocal relationships between loneliness and depression, finding that loneliness predicted depression one year later, but depression did not predict loneliness (Cacioppo et al., 2010). Experimental work supports a relationship between loneliness and anxiety symptoms: in one study, anxiety levels were significantly higher in research participants who received a loneliness manipulation compared to participants in a control condition (Cacioppo et al., 2006). Finally, there is empirical support for a link between workplace loneliness and emotional exhaustion (i.e., job stress linked to burnout via loneliness; Fernet et al., 2016). Generally, loneliness researchers have long thought that perceived threats to social connection may give rise to psychological distress (Cacioppo et al.,

2006); however, it should be noted that a portion of the empirical work on loneliness is cross-sectional.

Loneliness may also be directly related to workplace outcomes. Compared to general loneliness, Wright and colleagues describe workplace loneliness as a discrepancy between the existence and quality of "actual and desired relationships at work" (Wright et al., 2006) and more recently as the "psychological pain of perceived relational deficiencies in the workplace" (Wright & Silard, 2020). The experience of loneliness, whether at or outside of work, is unpleasant and can be detrimental to well-being. However, workplace loneliness (as opposed to general loneliness) may be particularly important to understand in terms of its effects on organizational outcomes. Work organizations can be thought of as "social institutions" (Wright, 2015, p. 124) which meet human social needs, and work is often interdependent. Therefore, perceived social connections at work (including those allowing for information exchange and trust) are likely critical for job satisfaction, absenteeism, and turnover intentions. Compared to general loneliness, workplace loneliness may also provide a more feasible and targeted starting point for intervention development.

One experience that may be associated with loneliness is workplace mistreatment, including incivility. Incivility is characterized by ambiguous intent to harm (Andersson & Pearson, 1999), potentially making it difficult for the target to know how to proceed in future interactions with the perpetrator and creating a feeling of disconnection or isolation. Indeed, in a recent paper, Wright and Silard (2020) propose that workplace mistreatment is a psychosocial hazard that may be associated with loneliness. As an emotional form of coping, individuals may essentially choose to experience loneliness rather than continue to spend time with coworkers who may mistreat them. The Japanese phenomenon of hikikomori, in which adults withdraw from all social life outside their immediate household for a period of at least six months, is a prime example of chosen, yet aversive, loneliness. Hikikomori is often the result of having experienced bullying, betrayal, or other mistreatment (including at work; Yong & Kaneko, 2016) and is "thought to be distinguishable from mental illness" (Yong & Nomura, 2019).

In addition to the conceptualization of loneliness as a secondary stressor, Weiss and Cropanzano's (1996) Affective Events Theory (AET) proposes that, generally, employees experience affective processes in response to work events. Pertinently, Glasø and colleagues empirically tested the assumptions of AET with bullying as the triggering work event, finding that negative affective responses (using the Positive and Negative Affect Schedule [PANAS]) partially mediated the relationship between bullying and outcomes (i.e., job satisfaction and turnover intentions; Glasø et al., 2010). Indeed, negative affective responses can have downstream effects, including changes in job attitudes. Research shows that loneliness is negatively correlated with job satisfaction among employees in a variety of occupations, including teachers (Tabancali, 2016), dentists (Puriene et al., 2008), and pediatric residents (Karaoglu et al., 2015). Clearly for some, the workplace is an important outlet for meeting social needs. However, it should be noted that the workplace is merely one life domain in which social needs can potentially be met, and even the friendliest work environment may not fully satisfy the social needs of an employee who has unrealistic expectations.

Loneliness is primarily an affective experience which appears to be perpetuated by cognitive factors (e.g., perception of lack of control over one's situation, negative view of self and others, etc.; Ozcelik & Barsade, 2018). Experiencing and attempting to manage loneliness can deplete individuals' limited cognitive resources (Cacioppo et al., 2016) that could otherwise be directed toward job tasks. Specifically, loneliness can negatively affect executive functioning (Baumeister & DeWall, 2005; Campbell et al., 2006) and attentional control (Cacioppo & Hawkley, 2009). Lonely employees may become stuck in the cycle of loneliness, making it difficult for them to experience the benefits of having strong working relationships with coworkers (Lam & Lau, 2012), including the exchange of information needed to complete work. In fact, according to Lawler's (2001) affect theory of social exchange, experiencing more negative than positive social interactions can cause individuals to withdraw from future interactions, potentially perpetuating loneliness and contributing to negative organizational outcomes (Ozcelik & Barsade, 2018).

The experience of loneliness may be associated with a range of avoidant or withdrawal behaviors (Lam & Lau, 2012), including increased workplace absence or turnover intentions (Ertosun & Erdil, 2012). Longitudinal research supports the idea that loneliness predicts increased health-related school absence among children (Harris et al., 2013), and recent cross-sectional survey data shows that workplace loneliness is significantly correlated with stress-related workplace absence (Bowers et al., 2022). These data indicated that, on average, lonely employees miss 5.7 more days of work than non-lonely employees, and this avoidable absenteeism is estimated to cost U.S. employers $154 billion annually (Bowers et al., 2022). With regard to turnover intentions, job embeddedness (referring to the robustness and extent to which employees are linked socially, psychologically, and financially to their organizations; Mitchell et al., 2001) theory posits that employees who are less embedded in an organization may be less likely to stay (Mitchell et al., 2001), especially if they are lonely. Practically, organizations may be more likely to lose employees when the social environment is alienating. Indeed, recent survey data suggests that there is an association between workplace loneliness and turnover intentions (Bowers et al., 2022).

Arguably, meeting social needs is a critical role that "healthy" work should support. Wright (2015) argues that although loneliness is an individual experience, it should be thought of and treated as an organizational problem that affects individuals. Loneliness has received little empirical attention as an organizational problem, although there is some evidence that workplace social climate can affect loneliness (Erdil & Ertosun, 2011; Wright, 2005). For example, Erdil and Ertosun (2011) found that emotion-based and relation-based social climates helped employees fulfill social needs at work, thus reducing experiences of workplace loneliness.

Because loneliness has been linked to the following work and nonwork outcomes, and because loneliness may act as a secondary stressor which can occur alongside incivility, we propose the following:

Hypothesis 3a. Workplace loneliness will be positively associated with emotional exhaustion (Samples 1 and 2).

Hypothesis 3b. General loneliness will be positively associated with depression symptoms (Sample 2).

Hypothesis 3c. General loneliness will be positively associated with anxiety symptoms (Sample 2).

Hypothesis 4a. Workplace loneliness will be positively associated with turnover intentions (Sample 1).

Hypothesis 4b. Workplace loneliness will be negatively associated with job satisfaction (Samples 1 and 2).

Hypothesis 4c. General loneliness will be positively associated with health-related work absence (Sample 2).

Incivility and loneliness share outcomes in a similarly framed nomological network. Although incivility and loneliness may occur in tandem, research has not simultaneously examined the associations of these variables with outcomes. It may be the case that one variable (e.g., loneliness) contributes more explained variance over the other in some instances. Thus, we propose the following:

Research Question 1: What are the relative contributions of incivility and loneliness (general and workplace) to explained variance in individual and organizational outcomes?

Research Question 2: What are the relative contributions of incivility and general loneliness to explained variance in individual and organizational outcomes when perceived work stress is added to the model?

Method

Utilizing two samples of cross-sectional survey data, we examine relationships among workplace incivility, loneliness (workplace loneliness: Sample 1; general loneliness: Sample 2), and several outcome variables. Specifically, we test for associations of incivility and loneliness with outcomes, paying particular attention to the relative importance of incivility and loneliness in explaining variance in outcomes. In Sample 2, we examine associations between predictors and depression and anxiety symptoms, and also control for general perceived work stress.

Participants

Sample 1 Sample 1 consisted of usable data from 681 U.S. working adults invited via Qualtrics Online Sample Service and snowball sampling to complete an online survey. This study was approved by the Institutional Review Board (IRB) prior to data collection, protocol #X18-125. All participants were over the age of 18, worked at a full-time paying job (at least 30 h per week), and interacted with at least one coworker. At the beginning of the survey, participants had to answer a question asking them to commit to thoughtfully providing their best answers to survey items. If they did not commit to doing so, their

responses were removed from the dataset. Additionally, we deleted data from participants who completed the survey in less than one-third of the median response time, or who had missing data for more than half of the survey items. Once these responses were deleted, we conducted a manual review of the data to assess for careless responding and to delete these data. Participants were 46.5% male, 52.9% female, and 0.6% "other" (e.g., transgender, non-binary). Racially, participants were 72.2% White, 13.0% Black/African-American, 5.4% Asian, 5.7% Hispanic/Latino, 1.0% Native American, 2.2% multiracial, 0.4% "other" ("German"; "Pacific Islander"). Participants had an average age of 40.3 years (SD = 12.3) and an average organizational tenure of 8.45 years (SD = 7.59).

Sample 2 Sample 2 consisted of 165 state corrections supervisors from several corrections facilities within the northeastern United States. Research staff recruited participants via a local union-led effort to complete a paper-and-pencil survey as part of a larger study. Prior to data collection, this study was approved by the IRB, protocol #18-021S-2. In total, about 450 supervisors, counselor supervisors, lieutenants, captains, deputy wardens, and parole managers were invited, and about one-third of invited employees volunteered to attend. Participants were assured that survey responses were anonymous and participation was voluntary. Because we used a paper-and-pencil survey, we conducted computerized data entry using a double data entry protocol for accuracy. Data were entered and managed using REDCap electronic data capture tools (Harris et al., 2019; Harris et al., 2009). REDCap (Research Electronic Data Capture) is a secure, web-based software platform designed to support data capture for research studies, providing 1) an intuitive interface for validated data capture; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for data integration and interoperability with external sources. Two separate research assistants entered data, blinded to the other's data entry. Then, we utilized REDCap's double data entry features to flag any discrepancies in data entry. Discrepancies were resolved by checking paper-and-pencil survey responses. When computerized data entry was complete, we gathered frequencies, minimum and maximum values, means, and standard deviations to ensure that responses fell within reasonable values for the scales used.

Participants were 74.4% male and 25.6% female; we provided an "other" option when assessing sex, but no participants selected it. Thus, we did not collect data on transgender or non-binary identities. When answering survey items about race, participants were able to mark all options that applied to them. The participant breakdown by race was 78.0% White/European Descent, 40.0% Black/African-American/African, 9.6% American Indian/Alaska Native, 4.2% Asian/Asian-American, and 4.2% Middle Eastern/Arab/Arab-American. About one-quarter of participants (22.6%) considered themselves Latino or of Hispanic origin or descent. Participants had an average age of 42.5 years (SD = 6.36) and an average organizational tenure of 15.33 years (SD = 4.85).

Measures

All measures utilized were based on sufficiently reliable and previously validated measures. Cronbach's alpha values are listed in Tables 1 and 2. Because both samples utilize archival survey data, workplace incivility, emotional exhaustion, and job satisfaction were measured using different scales.

Incivility In Sample 1, the 11-item Workplace Incivility Scale (WIS; Cortina et al., 2001) was used to measure workplace incivility. Specifically, participants were asked to rate how often they experienced acts of incivility from their coworkers over the past six months (e.g., "Gave you hostile looks, stares, or sneers") from "Never" (1) to "Many Times" (5).

In Sample 2, the Negative Acts Questionnaire-Revised (NAQ-R; Einarsen et al., 2009) was used to measure workplace incivility. We took the required steps to receive permission to use a shortened form of the NAQ-R in this study. The scale contained 6 items regarding person-related bullying which were rated on a 5-point frequency scale from "Never" (1) to "Daily" (5) (e.g., "Being humiliated or ridiculed in connection with your work"). Responses were provided in terms of experiences in the past six months.

Loneliness In Sample 1, workplace loneliness was measured using Ozcelik and Barsade's (2018) 20-item loneliness scale (e.g., "I feel isolated from my coworkers"). The items are scored on a 5-point Likert scale from "Strongly disagree" (1) to "Strongly agree" (5).

In Sample 2, general loneliness was measured using three items from the UCLA Loneliness scale (Russell et al., 1980). The UCLA Loneliness scale is rated on a 5-point frequency scale from "Never" (1) to "Always" (5) (e.g., "I lack companionship").

Perceived Work Stress In Sample 2, we measured perceived work stress using a single item developed by the larger study team: "In the PAST 30 DAYS, how would

Table 1 Sample 1 Means, Standard Deviations, and Correlations

Variable	n	M	SD	1	2	3	4	5
1. Incivility [a]	678	1.95	0.96	0.96				
2. Workplace loneliness [b]	670	2.23	0.68	0.57**	0.93			
3. Emotional exhaustion [b]	676	3.73	1.68	0.52**	0.51**	0.94		
4. Job satisfaction [c]	675	5.37	1.57	-0.32**	-0.52**	-0.48**	-	
5. Turnover intentions [c]	672	3.53	1.83	0.47**	0.47**	0.68**	-0.52**	0.87

Note. Cronbach's α on diagonal

[a] 1 = Never, 5 = Many times

[b] 1 = Strongly disagree, 5 = Strongly agree

[c] 1 = Strongly disagree, 7 = Strongly agree

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Table 2 Sample 2 Means, Standard Deviations, and Correlations

Variable	n	M	SD	1	2	3	4	5	6	7	8
1. Incivility [a]	165	1.75	0.73	0.84							
2. General loneliness [b]	165	2.06	0.99	0.45**	0.86						
3. Emotional exhaustion [c]	165	3.09	1.14	0.38**	0.33**	-					
4. Job satisfaction [c]	165	3.59	0.94	-0.19*	-0.25**	-0.58**	-				
5. Absenteeism (days in past month)	164	0.87	1.99	0.13	0.25**	0.21**	-0.11	-			
6. Perceived work stress [d]	165	3.38	0.89	0.42**	0.29**	0.53**	-0.30**	0.20*	-		
7. Depression symptoms [e]	164	1.71	0.89	0.53**	0.68**	0.44**	-0.37**	0.27**	0.45**	0.84	
8. Anxiety symptoms [e]	165	1.97	0.88	0.34**	0.38**	0.48**	-0.32**	0.21**	0.40**	0.66**	0.80

Note. Cronbach's α on diagonal

[a] 1 = Never, 5 = Daily

[b] 1 = Never, 5 = Always

[c] 1 = Strongly disagree, 5 = Strongly agree

[d] 1 = No stress, 5 = Extreme stress

[e] 1 = Not at all, 5 = Extremely

$*p < 0.05$, $**p < 0.01$, $***p < 0.001$

you rate the average amount of stress at work?" Response options were on a 5-point scale ranging from "No stress" (1) to "Extreme stress" (5).

Mental Health Outcomes In Sample 1, emotional exhaustion was measured using Wharton's (1993) 6-item scale, which is a shortened version of the emotional exhaustion component of the original Maslach Burnout Inventory (Maslach & Jackson, 1979). Items (e.g., "I feel emotionally drained from my work") were scored on a 7-point scale ranging from "Strongly disagree" (1) to "Strongly agree" (7).

In Sample 2, emotional exhaustion was measured using a single item developed by the larger study's research team: "At work, I often feel emotionally drained," and was scored on a 5-point scale ranging from "Strongly disagree" (1) to "Strongly agree" (5). Depression and anxiety symptoms were measured using six items from the nine-item Brief Symptom Inventory (BSI; Derogatis & Spencer, 1983). Participants reported symptom severity during a typical week (e.g., Anxiety: "Nervousness or shakiness inside"; Depression: "Feeling blue") with response options on a five-point scale ranging from "Not at all" (1) to "Extremely" (5).

Organizational Outcomes In Sample 1, turnover intentions were measured using Kelloway and colleagues' (1999) 3-item scale. Items (e.g., "I think about quitting my job") were scored from "Strongly disagree" (1) to "Strongly agree" (7). Job satisfaction was measured using a single item: "All in all, I am satisfied with my job." (Cammann et al., 1983) scored on a 7-point Likert scale from "Strongly disagree" (1) to "Strongly agree" (7).

In Sample 2, health-related absence was measured using two items from the World Health Organization Health and Work Performance Questionnaire: "In the PAST MONTH, how many days did you…miss AN ENTIRE (PART OF A) WORK DAY because of problems with your physical or mental health? (Please include only days missed for your own health, not someone else's health)" (Kessler et al., 2003). Job satisfaction was measured using a single item, "All in all, I am satisfied with my job," (Gowing & Lancaster, 1996) and was scored on a 5-point scale from "Strongly disagree" (1) to "Strongly agree" (5).

Results

Hypothesis Testing

Descriptive results for Samples 1 and 2 are reported in Tables 1 and 2, respectively. Measures from both samples have a sufficiently high internal consistency, see Tables 1 and 2. All hypothesized correlations were in the expected direction and were statistically significant ($p < 0.05$), with the exception of the correlation between incivility and health-related absenteeism, which was not significant. These results support H1a-c, H2a-c, H3a-c, and H4a-c. The correlations between incivility and loneliness were also high (Sample 1, workplace loneliness: $r = 0.57$; Sample 2,

general loneliness: $r = 0.45$), suggesting that these experiences may occur in tandem. In addition, correlations were strong among several variables in both samples ($r > 0.5$). Perceived work stress was significantly and at least moderately associated with all focal variables, see Table 2.

Research Questions

We examined our research questions using several measures of relative importance in SPSS 27, see Tables 3–5. In datasets where multicollinearity is present, it is helpful to examine multiple relative importance metrics to better understand associations between variables (Kraha et al., 2012). Specifically, we used linear regression, with incivility and loneliness as predictors, to yield zero-order correlations (r) and standardized beta weights (β) for the associations between predictors and each outcome, as well as overall variance explained by the model (R^2). We also calculated structure coefficients (r_s) for predictors by identifying the correlation between predictor variables and predicted outcome values, without considering the influence of other predictor variables in the model. The squared structure coefficient (r_s^2) shows the amount of variance explained by a given predictor out of the total variance explained by the model, and can be helpful for identifying multicollinearity. Indeed, across both of our samples, we found evidence for shared variance for all outcome variables, as the summed r_s^2 across predictors was greater than 1.00 for all outcomes (Kraha et al., 2012). Finally, we conducted relative weights (RW) analysis (Johnson, 2000) to understand the weighted variance explained by incivility and loneliness for each outcome, see Tables 3 and 4. Relative weights analysis allows for the parsing of shared variance identified with structure coefficients, yielding a more succinct understanding of each variable's predictive weight.

First, we present results for outcome variables which were measured in both Samples 1 and 2: emotional exhaustion and job satisfaction. Predictors explained substantially more variance in emotional exhaustion in Sample 1 data ($R^2 = 0.338$) compared to that of Sample 2 ($R^2 = 0.177$). Across both samples, incivility appeared to carry more weight (Sample 1: 56.8%; Sample 2: 60.2%) in explaining variance in emotional exhaustion, although loneliness still appeared to play a significant role (Sample 1: 43.2%; Sample 2: 39.8%). As for job satisfaction, predictors explained vastly more variance in Sample 1 ($R^2 = 0.273$) compared to Sample 2 ($R^2 = 0.067$). Of the variance explained, incivility carried the majority of the weight in both samples, and indicators of relative importance were similar across samples. Thus, the patterns of relative importance were mirrored across Samples 1 and 2. Finally, in Sample 1, we found that incivility and workplace loneliness accounted for 27.7% of the variance in turnover intentions. Although both predictors appeared to be similarly important to turnover intentions, relative weights analysis showed that incivility carried more weight than loneliness.

In Sample 2, we examined the variance explained by predictors for three additional outcomes: health-related absenteeism and depression and anxiety symptoms. Incivility carried the majority of the weight in explaining variance in absenteeism (95.7%), although the total variance explained by the model was low. For the

Table 3 Relative Importance of Incivility and Workplace Loneliness on Outcomes (Sample 1)

	Emotional exhaustion					Job satisfaction					Turnover intentions				
	r	β	r_s	r_s^2	RW	r	β	r_s	r_s^2	RW	r	β	r_s	r_s^2	RW
Incivility	0.518	0.332	0.89	0.792	56.80%	-0.316	-0.044	-0.628	0.394	84.70%	0.467	0.294	0.885	0.783	63.50%
Workplace loneliness	0.514	0.322	0.884	0.781	43.20%	-0.522	-0.497	-0.998	0.996	15.30%	0.468	0.298	0.888	0.789	36.50%
	$R^2=0.338$					$R^2=0.273$					$R^2=0.277$				

Note. R^2 refers to the total variance explained by the two predictors in the outcome variable. RW refers to the percentage of R^2 that is explained by each predictor, derived from relative weights analysis

Table 4 Relative Importance of Incivility and General Loneliness on Outcomes (Sample 2)

	Emotional exhaustion					Job satisfaction					Absenteeism				
	r	β	r_s	r_s^2	RW	r	β	r_s	r_s^2	RW	r	β	r_s	r_s^2	RW
Incivility	0.381	0.293	0.906	0.821	60.20%	-0.187	-0.098	-0.721	0.520	89.80%	0.129	0.026	0.526	0.277	95.70%
General loneliness	0.329	0.198	0.782	0.612	39.80%	-0.245	-0.201	-0.941	0.885	10.20%	0.245	0.233	0.996	0.992	4.30%
	$R^2 = 0.177$					$R^2 = 0.067$					$R^2 = 0.060$				

	Depression symptoms					Anxiety symptoms				
	r	β	r_s	r_s^2	RW	r	β	r_s	r_s^2	RW
Incivility	0.531	0.284	0.73	0.533	35.80%	0.336	0.208	0.793	0.629	68.40%
General loneliness	0.681	0.555	0.937	0.878	64.20%	0.381	0.288	0.898	0.806	31.60%
	$R^2 = 0.528$					$R^2 = 0.180$				

Note. R^2 refers to the total variance explained by the two predictors in the outcome variable. RW refers to the percentage of R^2 that is explained by each predictor, derived from relative weights analysis

Table 5 Relative Importance of Perceived Work Stress on Outcomes (Sample 2)

	Emotional exhaustion	Job satisfaction	Absenteeism	Depression symptoms	Anxiety symptoms
	RW	RW	RW	RW	RW
Perceived work stress	30.00%	55.60%	45.40%	38.00%	38.70%
Incivility	10.00%	17.00%	38.60%	30.40%	34.30%
General loneliness	60.00%	27.30%	15.90%	31.60%	27.00%
	$R^2 = 0.335$	$R^2 = 0.236$	$R^2 = 0.286$	$R^2 = 0.275$	$R^2 = 0.293$

Note. RW refers to the percentage of R^2 that is explained by each predictor, derived from relative weights analysis

outcomes of depression and anxiety symptoms, total variance explained was higher, and loneliness appeared to play a more important role. For depression symptoms, the total variance explained was high, and loneliness carried more importance (64.2%) than incivility (35.8%). When examining anxiety symptoms, we found that incivility carried more weight than loneliness.

Because incivility and loneliness are both stressors which may occur together, we examined their relative importance in understanding outcomes compared to general perceived work stress (Sample 2). Thus, we added perceived work stress to the model and ran relative weights analysis once more, see Table 5. Unsurprisingly, perceived work stress explained a significant portion of the total variance explained in all outcomes, especially in the work-related outcomes of job satisfaction (55.6%) and health-related absenteeism (45.4%). Loneliness appeared to be less important, compared to incivility and perceived work stress, in explaining variance in absenteeism. Comparing the relative importance of loneliness over incivility in a model with and without perceived work stress, it appears that loneliness (60%) is vastly more important than incivility (10%) when examining emotional exhaustion, is moderately more important for job satisfaction (loneliness: 27.3% vs. incivility: 17%), and has nearly the same level of importance for depression symptoms (loneliness: 31.6%; incivility: 30.4%).

Discussion

Utilizing both between- and within-organization samples (Samples 1 and 2, respectively), we found evidence indicating that both workplace (Sample 1) and general (Sample 2) loneliness may occur in tandem with incivility and are significantly associated with various mental health and organizational outcomes. First, we found that incivility and loneliness were significantly associated with all outcomes in the expected direction, with the exception of health-related absenteeism, with which incivility had a non-significant association. Through relative importance analyses, we found that loneliness explained a substantial portion of the variance in several outcomes, and was even more important than incivility in explaining variance in depression symptoms. When perceived work stress was added to the model, we found that general loneliness was most important in explaining variance in emotional exhaustion, and was more important than incivility in explaining variance in job satisfaction and depression symptoms. Overall, work-related loneliness was a stronger predictor than general loneliness.

Theoretical Implications

The relationships among mistreatment, loneliness, and negative outcomes have been explored among children and adolescents (Cao et al., 2020) and older adults (Lee & Bierman, 2019), but have received little attention in organizational literature. Notably, the present research expands the limited research on workplace loneliness, which may have myriad harmful effects on mental health and organizational

outcomes. Loneliness appears to be particularly associated with emotional exhaustion, job satisfaction, and depression symptoms, even when considering the impact of perceived work stress (see Table 5). As workplace mistreatment research expands, it is crucial to identify the unique impact of the many interpersonal workplace stressors on worker health and well-being.

As previously stated, loneliness may occur in tandem with other interpersonal stressors (e.g., incivility), may be associated with similar negative outcomes, and may share some of the same cognitive and affective processes. One possibility is that loneliness plays the role of a "secondary stressor," in which a chain of stressors may emanate from an initial stressor, leading to negative mental health outcomes (e.g., Lock et al., 2012). Relatedly, Lee and Bierman (2019) analyzed data from the Health and Retirement Survey (2006, 2010, and 2014) and found evidence that loneliness acted as a secondary stressor to everyday discrimination, which led to increased depression symptoms among older adults. In a workplace context, employees who are treated uncivilly may be socially ostracized (Cortina et al., 2017) or may choose to isolate themselves (Vickers, 2006), perhaps resulting in loneliness (Lee & Bierman, 2019). Although the current research focuses on cross-sectional associations between incivility, loneliness, and outcomes, future research could examine the potential explanatory role of loneliness and other interpersonal constructs on the relationship between incivility and outcomes. It is likely that individual differences (e.g., introversion) are not the sole cause of loneliness. Rather, loneliness may also occur via an affective process associated with experienced workplace mistreatment, social withdrawal, and unmet social needs.

Practical Implications

This work has numerous practical implications, as incivility and loneliness are aversive experiences which can affect any employee. Since the COVID-19 pandemic, loneliness has gained even greater recognition (a Google Scholar search from 2019 to 2022 for "COVID-19 loneliness" turns up over 23,000 results), with national lockdowns and many employees being forced to work remotely for an extended period of time. Critically, this project showcases data which were collected prior to the COVID-19 pandemic. These data provide perspective on the pre-pandemic era, which could be useful in developing interventions as the COVID-19 pandemic wanes.

Organizations excel at designing jobs which maximize efficiency, but which do not necessarily meet the relatedness needs (Deci & Ryan, 2012) of their employees. Job redesign efforts which increase meaningful social interaction and, subsequently, feelings of relatedness, would decrease the experience of loneliness and likely improve organizational outcomes via motivational processes. For example, a recent Cigna study of about 5,000 adults nationwide notes that improving employees' perceptions of work-life balance and smart use of technology may be key in reducing loneliness (Bowers et al., 2022; Cigna, 2020). Noting which employees are most likely to be lonely may also give clues about why loneliness occurs and how jobs can be redesigned to mitigate it. For instance, the Cigna study found that

entry-level employees and those in upper-level leadership positions were more likely to be lonely than mid-level employees (Bowers et al., 2022), perhaps because of limited opportunities for social connection or lack of meaning in their work.

The finding that loneliness explains significant variance in outcomes, beyond that explained by incivility, provides evidence that loneliness interventions could mitigate negative outcomes. Whereas some amount of incivility is likely unavoidable in one's career, preventing employees from reaching a state of loneliness may be controllable, which encourages the use of interventions. Unfortunately, existing loneliness interventions have been found to be largely ineffective (Masi et al., 2011), perhaps in part because interventions are not tailored to individual needs (Akhter-Khan & Au, 2020). Loneliness interventions have especially been concentrated on reducing loneliness in elderly adults (e.g., robot-facilitated communication for increasing perceptions of interpersonal closeness; Okubo et al., 2018); however, adjacent literatures on interpersonal closeness (Aron et al., 1997), workplace mentoring (Eby & Robertson, 2020), and belonging interventions (Allen et al., 2021) provide additional ideas which could help working adults. It is our hope that this study aids in solidifying workplace loneliness as an occupational health concern deserving of further investigation and intervention development.

Fortunately, members and leaders in some organizations are already recognizing that loneliness is a significant problem. In fact, the decision to collect loneliness data in Sample 2 was union-driven, as part of an effort to identify the most important issues related to correctional staff mental health and to design actionable solutions. The findings from this study have direct relevance for enhancing current mental health initiatives in the corrections context, where mental health discussions and interventions can be met with resistance. In addition to civility trainings, interventions such as mentor programs, structured and unstructured work social events, employee resource groups (ERGs) for individuals from marginalized groups, and online social support via social networks may hold promise in mitigating the negative effects of incivility and loneliness. In the meantime, organizational leaders would be prudent to assess mistreatment (including incivility) and loneliness. As for an individual approach, employees suffering from loneliness may benefit from examining and working to change maladaptive cognitions (e.g., using cognitive behavioral therapy) which impede social connection; merely increasing social interaction is not necessarily effective at reducing loneliness (Masi et al., 2011).

Limitations and Future Research

This project is not without its limitations. First, we utilized convenience-based sampling (e.g., snowball sampling), which is a potential source of bias. Sample 1 was made up of Qualtrics Online Sample Service data, which is presumably representative of U.S. working adults, although the nature of such online surveys precludes the identification of participants. Sample 2 participants were part of a larger study on corrections officer health and all worked in a corrections environment. This unique work context could present weaker or stronger relationships

between focal variables than exist in other work contexts, but there is no evidence that the nature of these relationships differs from that of other occupational contexts.

Second, both data sets utilized a cross-sectional design, which does not allow for causal inferences. Although we found associations between focal variables (incivility, loneliness, and outcomes), the temporal nature of these relationships is unclear. There is evidence that some of the associations between incivility and outcomes, including depression symptoms, emotional exhaustion, job satisfaction, and turnover intentions, do not vary as a function of cross-sectional versus time-lagged designs (Han et al., 2022). Additionally, loneliness appears to predict negative mental health outcomes in the future (e.g., depression symptoms; Cacioppo et al., 2010), but it has also been theorized as a cycle. That is, loneliness itself has been associated with future mistreatment (e.g., in a three-year longitudinal study of Finnish adolescents; Acquah et al., 2016). Studying loneliness over time also presents challenges, as participants may leave workplaces because of loneliness. Overall, this study meets several of the conditions under which a cross-sectional design is recommended, including exploratory research, an unknown timeframe during which changes in measured variables occur, and a naturally occurring predictor variable (i.e., workplace incivility; Spector, 2019). As is often the case, longitudinal work would be of value in continued efforts to understand the role of loneliness, mistreatment, and other interpersonal stressors in predicting individual and organizational outcomes.

We note that the strong correlations among several measured variables (e.g., among incivility, loneliness, and depression symptoms; incivility, loneliness, and emotional exhaustion) give rise to multicollinearity concerns. To give a clearer picture of associations among variables, we presented several relative importance metrics, as recommended by Kraha and colleagues (2012) when facing potential multicollinearity, suppression, or other concerns that may arise in multiple regression. Further, despite strong correlations among some measured constructs, previous work has established that these constructs are distinct (e.g., loneliness and depression; Cacioppo et al., 2010). In support of the direct relationships between incivility and outcomes, there is longitudinal work indicating that incivility can cause detrimental outcomes (e.g., depression; Cacioppo et al., 2010; anxiety and depression; Cortina et al., 2001; decreased patient safety outcomes; Riskin et al., 2019). Other strong correlations (e.g., emotional exhaustion and turnover intentions) reflect relationships that have been reported in extant organizational literature (e.g., Kraemer & Gouthier, 2014).

Future work should explore the relationships between workplace incivility, loneliness, and outcomes using a longitudinal design, including investigating the multicollinearity concerns surrounding the relationship between incivility and workplace loneliness. Similar to the participatory action research framework used in Sample 2, qualitative work involving employees with lived experiences of loneliness may prove useful to identify root causes of workplace loneliness. Because our use of archival datasets did not allow for it, future studies should ideally measure both general and workplace loneliness. As the role of workplace loneliness is established, interventions may be developed and utilized in organizations to reduce the negative effects of loneliness.

Conclusion

This study provides several important findings for the literature on workplace mistreatment and loneliness. In addition to replicating previous findings regarding the harmful effects of workplace incivility on mental health and organizational outcomes, we found that the relative contribution of loneliness to such outcomes is deserving of scholarly attention, especially when it comes to emotional exhaustion, job satisfaction, and depression symptoms. Practically, this work can serve to inform organizational leaders of the deleterious effects of loneliness, especially when it occurs in tandem with workplace incivility, and aid in loneliness intervention development.

Data Availability The datasets generated and analyzed during the current study are available from the corresponding author upon request.

Declarations

Ethics Approval Prior to data collection, this study was approved by the Institutional Review Board, protocols #X18-125 (Sample 1) and #18-021S-2 (Sample 2).

Consent to Participate Informed consent was obtained from all individual participants included in the study.

Competing interests We declare no relevant financial or non-financial conflicts of interest.

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