Journal of Business Ethics (2023) 186:347–367
https://doi.org/10.1007/s10551-022-05184-0

ORIGINAL PAPER

Leadership and Workplace Aggression: A Meta-analysis

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Received: 22 October 2021 / Accepted: 15 June 2022 / Published online: 15 July 2022

Abstract
Workplace aggression (bullying, incivility, and similar forms of interpersonal mistreatment) has been established as a prevalent and detrimental issue in organizations. While numerous studies have documented the important role of leaders in inhibiting or accelerating workplace aggression, a systematic overview of the associations between different leadership styles and workplace aggression as well as its boundary conditions is still lacking. This study reports a meta-analysis investigating the associations between leadership and workplace aggression. Drawing on data from 165 samples ($N = 115{,}190$), our results revealed that change-oriented, relational-oriented, and values-based and moral leadership (but not task-oriented leadership) were associated with reduced workplace aggression. In contrast, passive and destructive leadership (i.e., abusive, narcissistic, uncivil, and authoritarian) were associated with increased workplace aggression. Importantly, relative weights analyses revealed that ethical leadership was most strongly negatively associated with workplace aggression. Additionally, moderation analyses revealed that the associations between leadership and workplace aggression were, in some cases, moderated by power distance (for transactional leadership) and rating sources (for transformational and abusive supervision), but independent of measurement time lag. Overall, the findings of this meta-analysis highlight the important associations between leadership and workplace aggression. Implications for future research and policy recommendations aiming to reduce workplace aggression are discussed.

Keywords Leadership · Workplace aggression · Meta-analysis

Introduction

Workplace aggression is a widespread and disruptive problem. The prevalence rate of workplace aggression has been estimated as 30% in the USA (Namie, 2021), 15% in Japan (Giorgi et al., 2013), and ranged from 3.5 to 10% in Europe (Einarsen et al., 2011). Workplace aggression harms individuals' mental health and work performance (for reviews, see Bowling & Beehr, 2006; Hershcovis, 2011; Hershcovis & Barling, 2010), which, in turn, inevitably affects organizations by means of increased absenteeism and increased turnover (Dhanani & LaPalme, 2019; Moayed et al., 2006).

Given the prevalence and detrimental consequences of workplace aggression for individuals and organizations, it is important to understand why workplace aggression takes place as well as how to reduce it. Prior empirical studies and meta-analyses provided important insights into how individual characteristics (e.g., age, gender, and personality traits) and organizational culture/climate (e.g., justice variables) relate to workplace aggression (e.g., Berry et al., 2007; Hershcovis et al., 2007; Mackey et al., 2021). Although these studies provided valuable knowledge on the associations between these factors and workplace aggression, researchers have suggested that leadership, as a key part of the organizational system that influences both employees behaviors and organization effectiveness (Zhao & Li, 2019), might play an even more critical role in shaping workplace aggression. For instance, abusive supervision has been shown to retain stronger meta-analytic correlations with experienced

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incivility than job characteristics do (i.e., job control and job demands; Yao et al., 2021). Hershcovis and Barling (2010) revealed that leader aggression maintains a stronger association with employee interpersonal deviance than co-worker and outsider aggression do. These findings suggest that leadership should receive more attention when investigating workplace aggression.

Organizational leadership can prevent workplace aggression from taking place, or at least reduce its occurrence (e.g., Howard et al., 2020; Samnani & Singh, 2012). For example, ethical leadership has been found to be effective in reducing workplace aggression (Hauge et al., 2011; Stouten et al., 2010; Walsh et al., 2018). In sharp contrast, leaders themselves can also be perpetrators (Einarsen et al., 2007; Tepper, 2007). When experiencing destructive leadership, employees might retaliate toward their leaders, imitate their destructive behavior or displace aggression toward others, which may bring about more workplace aggression (Skogstad et al., 2007). Thus, leadership is strongly connected to workplace aggression, both in a negative and positive manner.

Unfortunately, the extant literature lacks a comprehensive understanding of the association between leadership and workplace aggression. Most past meta-analytic reviews on leadership and workplace aggression focused on a limited number of leadership types (e.g., ethical leadership and LMX; Mackey et al., 2021) and included only a small number of aggressive behaviors (e.g., bullying, Mackey et al., 2020; deviance behaviors, Park et al., 2019; ostracism, Howard et al., 2020), and few studies (if any) provided evidence on the correlations between other types of leadership and workplace aggression (e.g., workplace harassment, incivility). In addition, the number of samples included in these meta-analyses was relatively small (e.g., Mackey et al., 2020, $k = 8$ for the correlations of destructive leadership with bullying; Howard et al., 2020, $k = 9$ for the associations between LMX and ostracism).

Moreover, in spite of the burgeoning research regarding the association between leadership and workplace aggression, the literature is plagued by varying effect sizes and occasional conflicting results. For instance, previous research suggests that transactional leadership is negatively related to workplace bullying (Dussault & Frenette, 2015), while other studies found non-significant associations (e.g., Kaiser, 2017; Yağci & Uluöz, 2018). Conflicting findings also exist for the associations between laissez-faire leadership and workplace aggression, which is positive in most research (e.g., Hoel et al., 2010), but negative in other studies (e.g., Kaiser, 2017). Thus, despite the important information provided by existing meta-analyses and empirical studies, at present our understanding of the associations between leadership and workplace aggression is not fully adequate (we do not see the whole picture, in that some of its pieces are missing), and neither have the mixed findings for various leadership types and workplace aggression been reconciled and accounted for. Therefore, a more comprehensive meta-analysis by incorporating multiple types of leadership and various forms of workplace aggression is needed. This allows us to understand the precise valence and magnitude of the correlations between different leadership types and workplace aggression, to test the relative importance of different leadership types associated with workplace aggression (i.e., relative weight analysis), and to conduct moderation analyses explaining the high heterogeneity reported in previous meta-analyses.

This research aims to advance and refine the knowledge concerning the correlations between leadership and workplace aggression. First, in addition to ethical leadership, LMX, and destructive leadership examined in previous meta-analyses (e.g., Mackey et al., 2021), we include various other leadership types that have rarely been considered in previous meta-analyses. In particular, we adopted the meta-categories of leadership (i.e., change-, task-, relational-oriented, values-based and moral leadership, passive, and destructive leadership) to gain a comprehensive understanding of the effects of different leadership categories on workplace aggression. Moreover, in response to the call for reconciling constructs within workplace aggression research in previous studies (e.g., Hershcovis, 2011), we conceptualized workplace aggression as including terms sharing the common core of interpersonal mistreatment (e.g., workplace bullying, incivility, mobbing, and harassment). In doing so, we aimed to clarify the true effect size of the association between leadership and workplace aggression. Moreover, through relative weight analyses, we provided a test of the relative contribution of different leadership types in relation to workplace aggression. In addition, we investigated whether national culture (i.e., power distance) affects the associations between leadership and workplace aggression. Since all sorts of variations exist in the designs of the studies, we further examined the moderating effects of methodological factors (i.e., rating source and measurement time lag). Thus, the present research advances the conversation in both literatures on leadership and workplace aggression, especially contributing to estimating up-to-date and accurate associations between leadership and workplace aggression.

Theoretical Background and Hypothesis Development

Conceptualizing Workplace Aggression

Workplace aggression refers to "behavior by an individual or individuals within or outside an organization that is

intended to physically or psychologically harm a worker or workers and occurs in a work-related context" (Schat & Kelloway, 2005, p. 191). It is an umbrella term, including a broad and varied range of exposure to or enacted interpersonal workplace negative behaviors (i.e., bullying, mobbing, incivility, exclusion/ostracism, discrimination, harassment, psychological aggression, undermining, interpersonal deviance, victimization, violence; see Table 1 for definitions of these terms). These different terms are in fact used to describe similar concepts and often overlap in terms of the behaviors that are referred to. Numerous reviews of the literature (e.g., Barling et al., 2009; Ferris et al., 2016; Hershcovis, 2011) have criticized this proliferation of conceptual and operational definitions of workplace aggression and have therefore recommended integration of these constructs. As this research is aimed at investigating the role of different leadership types with regard to *general interpersonal* workplace aggression (rather than a narrow range of concepts or even a single concept), in line with previous research (e.g., Cortina, 2017; Hershcovis, 2011; Martin, 2014) we integrated and synthesized these similar constructs, referring to the overall concept of *workplace aggression* (WA).

Leadership and Workplace Aggression

Leadership can be defined as "a process of social influence in which a person can enlist the aid and support of others in the accomplishment of a common task" (Chemers, 1997). The past decades have witnessed a rapid growth of leadership research in management and organizational psychology, as well as a steady increase of leadership theories involving new behavioral constructs (e.g., ethical, servant, and authentic leadership). However, the potential for construct redundancy in the leadership literature has become a concern (e.g., Banks et al., 2016; Bormann & Rowold, 2018; Hoch et al., 2018). As a result, leadership researchers have tried to provide a full-range model of leadership behaviors (Avolio et al., 1999; Bass, 1985), and use different theories to categorize different leadership types (Michel et al., 2011; Yukl et al., 2019). Among the various leadership classification frameworks, the three meta-categories of change-oriented, task-oriented and relational-oriented leadership are widely studied (e.g., Bormann & Rowold, 2018; Derue et al., 2011; Yukl et al., 2002). More recently, leadership scholars have developed an additional meta-category labeled as "values-based and moral leadership" (Banks et al., 2018), which is

Table 1 Definitions for each construct included in workplace aggression

Construct	Definition	Citation
Bullying	"Situations where a person repeatedly and over a period of time is exposed to negative acts (i.e., constant abuse, offensive remarks or teasing, ridicule or social exclusion) on the part of co-workers, supervisors or subordinates"	Einarsen (2000, pp. 383–384)
Discrimination	"When persons in a 'social category' … are put at a disadvantage in the workplace relative to other groups with comparable potential or proven success"	Dipboye and Halverson (2004, p. 131)
Exclusion/ostracism	"The perception that one is being ignored or excluded"	Ferris et al., (2008, p. 1348)
General harassment	"Such interpersonally hostile interactions as being yelled at, sworn at, or subjected to humiliating or demeaning behavior without explicit reference to gender or other legally protected social status characteristics	Rospenda (2002, p. 141)
Incivility	"Low intensity deviant acts, such as rude and discourteous verbal and nonverbal behaviors enacted towards another organizational member with ambiguous intent to harm (Andersson & Pearson, 1999)"	Andersson and Pearson (1999, p. 457)
Interpersonal deviance	Deviant behaviors in which employees engage that are targeted toward individuals (e.g., violence, gossip, theft from coworkers)	Berry et al., (2007, p. 414)
Mobbing	"Severe form of harassing people in organizations."	Zapf et al., (1996, p. 215)
Psychological aggression	"Behavior that is characterized by a verbal or symbolic act, the typical immediate effect of which is psychological harm"	Schat and Frone (2011, p. 24)
Undermining	"Behavior intended to hinder, over time, a worker's ability to establish and maintain positive interpersonal relationships, work- related success, and favorable reputation"	Duffy et al., (2006, p. 105)
Violence	"Instances of aggression that involve direct physical harm or threat of physical harm"	Barclay and Aquino (2011, p. 616)
Victimization	"Individual's perception of having been exposed, either momentarily or repeatedly, to the aggressive acts of one or more other persons."	Aquino et al., (1999, p. 260)
Work harassment	"Repeated activities, with the aim of bringing mental (but sometimes also physical) pain, and directed towards one or more individuals who, for one reason or another, are not able to defend themselves."	Björkqvist et al., (1994, pp. 173–174)

also referred to as "ethical-oriented leadership" (Michel et al., 2011), "moral leadership" (Lee et al., 2020a, 2020b), or "ethical/moral values-based leadership" (Hoch et al., 2018). In addition to these effective leadership types, many leader behavior taxonomies include categories that refer to passive or destructive leadership (Kaluza et al., 2020; Matthews et al., 2021; Schyns & Schilling, 2013; Skogstad et al., 2007).

Accordingly, our review is organized around six leadership meta-categories: (1) change-oriented (e.g., transformational), (2) task-oriented (e.g., transactional), (3) relational-oriented (e.g., supportive), (4) values-based and moral (e.g., ethical), (5) passive (e.g., laissez-faire), and (6) destructive (e.g., abusive supervision) leader behaviors, which is also consistent with more recent meta-analyses on leadership (e.g., Lee & Carpenter, 2018; Montano et al., 2017). We use this categorization approach of leadership instead of directly investigating specific leadership styles because of the high likelihood that constructs within the same meta-category overlap (Bormann & Rowold, 2018; Hoch et al., 2018). In addition, providing hypotheses for the associations between workplace aggression and different leadership meta-categories provides a parsimonious structure that greatly facilitates conducting a meaningful meta-analysis. Below, we discuss why and how each leadership category is associated with workplace aggression.

Change-Oriented Leadership and Workplace Aggression

Change-oriented leader behaviors (also called inspirational leader behaviors, Derue et al., 2011) refer to leader behaviors oriented toward facilitating change in groups and organizations (Yukl, 2012). This category of leader behaviors encompasses actions such as external monitoring, explaining the need for change, envisioning change, encouraging innovative thinking, and taking personal risks to promote change (Michel et al., 2011). A representative of change-oriented leadership is transformational leadership, particularly its dimensions of intellectual stimulation and inspirational motivation (Derue et al., 2011). Employees having change-oriented leaders are more likely to accept changes and are willing to adapt and learn, which might reduce the possibility of workplace conflict. Moreover, change-oriented leadership emphasizes the importance of collective action, which evokes employees' higher-order needs (e.g., a sense of belonging to a larger entity) (Sosik & Godshalk, 2000). In this vein, employees transcend their self-interest for the good of the collective, leading to less workplace aggression originating from individual self-interest. Additionally, change-oriented leadership encourages followers to think divergently, question assumptions, and take risks (Bass, 1985). Such actions tend to promote an open and explorative mindset (Keller, 2006) and empower followers to experiment with ideas and undertake active problem solving (Jung et al., 2003). Appropriate and rational coping approaches to problems could reduce the possibility of workplace aggression (Tsuno & Kawakami, 2015). Therefore, we hypothesize that:

Hypothesis 1: Change-oriented leadership is negatively associated with workplace aggression.

Task-Oriented Leadership and Workplace Aggression

Task-oriented leader behaviors are defined as behaviors that contribute to the completion of tasks by organizing and directing the work of others (Lee & Carpenter, 2018), including short-term planning, clarifying responsibilities and monitoring operations (Yukl et al., 2002). Transactional leadership is a typical leadership in this category, focusing on an exchange process in which the leader motivates the follower to comply with his or her requests and rules (Bass, 1985). Stress research suggests that transactional leadership, especially contingent reward behaviors, reduces job-related stress by setting clear targets and clarifying desired performance criteria, thereby decreasing uncertainty in the work environment (Sosik & Godshalk, 2000). Since role stressors (e.g., role conflict and ambiguity) predict workplace aggression (Bowling & Beehr, 2006; Samnani & Singh, 2012), task-oriented leadership should decrease job-related stress and lead to less workplace aggression. Moreover, through clearly structuring work and clarifying desired targets and performance criteria, task-oriented leaders reduce uncertainty, one of the risk factors for aggression in the work environment (Moayed et al., 2006). Therefore, we hypothesize that:

Hypothesis 2: Task-oriented leadership is negatively associated with workplace aggression.

Relational-Oriented Leadership and Workplace Aggression

Relational-oriented leadership refers to leader behaviors that strive to maintain positive interpersonal interactions among group members (Lee & Carpenter, 2018), including behaviors such as supporting, developing, recognizing, consulting and empowering employees (Michel et al., 2011; Yukl et al., 2002). Relational-oriented behaviors help to build and maintain effective interpersonal relationships that increase mutual trust, cooperation, and teamwork, which leave less space for the occurrence of workplace aggression. Moreover, relational-oriented leader behaviors also help to fulfill employee needs for relatedness, growth, competence and self-determination in the workplace (Deci and Ryan, 2000), and previous

studies have demonstrated that relational-oriented behavior is important for influencing favorable subordinate attitudes, such as improved job satisfaction and prosocial behaviors (e.g., Rockstuhl et al., 2012; Yukl et al., 2019). Accordingly, unfavorable attitudes and behaviors (e.g., workplace aggression) are reduced. Leader-member exchange (LMX) is also included in this category, since LMX is inherently relational and defined as the quality of exchange between a leader and an employee (Graen & Cashman, 1975). Based on social exchange theory (Blau, 1964), followers feel obliged to reciprocate the positive exchanges with their leader by engaging in discretionary processes such as citizenship behavior. Accordingly, employees are less likely to engage in behaviors that harm other coworkers or the leader (i.e., workplace aggression) (e.g., Ilies et al., 2007; Zhang et al., 2019). We therefore expect that:

Hypothesis 3: Relational-oriented leadership is negatively associated with workplace aggression.

Values-Based and Moral Leadership and Workplace Aggression

Values-based and moral leadership reflects the domain of leader behaviors that are tied together via an underlying common core in morality, values, or a sense of empathy for others and their positions (Banks et al., 2018), encapsulating authentic, ethical, and servant leader behaviors. Leaders showing moral behaviors are attractive and often serve as legitimate role models (Banks et al., 2021; Brown & Treviño, 2006). In line with Social Learning Theory (SLT; Bandura, 1977), employees identify with these moral leaders and emulate their moral behavior. For example, opposing behaviors that likely to have negative consequences for the well-being of others and for which there is broad social consensus that such behaviors are morally "wrong" (i.e., workplace aggression) (Tangney et al., 2007). Through promoting moral behaviors (such as honesty, care for others, trustworthiness, and fair treatment), leaders signal to their followers that these types of actions are encouraged and rewarded, resulting in a moral and ethical environment (e.g., ethical culture, reasonable workloads, identification, etc.; Astrauskaite et al., 2015; Peng & Kim, 2020) where aggression is less tolerated. In addition, leaders who operate at higher levels of moral reasoning are more likely to make principled decisions, demonstrate concern for the rights of others, and value fairness as the foundation upon which relationships are built. This signals to employees that they are respected and valued by the organization (Ahmad, 2018). Therefore, we hypothesize that:

Hypothesis 4: Values-based and moral leadership is negatively associated with workplace aggression.

Passive Leadership and Workplace Aggression

Passive leadership, also termed "laissez-faire", "poor", "weak", "indistinct" or "inadequate" leadership, refers to non-leadership or the absence of leadership (Salin, 2003). It involves an inactive process of organizing employees, but does not necessarily involve treating employees in a bad manner such as abusive leadership (Tepper, 2000). Compared to other forms of leadership, laissez-faire leadership is the earliest and most-researched behavior that affects the occurrence of workplace aggression (Rai & Agarwal, 2018). Already in the 1990s, inadequacies in leadership practices have been revealed as possible causes of workplace aggression (Leymann, 1996). Previous research suggested that laissez-faire leadership leads to higher levels of role conflict and role ambiguity as well as increased conflicts with coworkers (Skogstad et al., 2007). Consequently, feelings of being disregarded may lead the employee to feel demotivated and to take part in behaviors that negatively affect organizational performance (Lievens et al., 1997). Moreover, laissez-faire leadership provides a fertile ground for workplace aggression by creating a social climate characterized by poor job characteristics and interpersonal conflict (Skogstad et al., 2007). Because laissez-faire leaders seldom intervene in situations characterized by aggression, perpetrators experience low costs for enacting aggression (Samnani & Singh, 2012). Furthermore, laissez-faire leadership fails in actively promoting positive social norms and taking necessary preventative action to control negative behavior, meaning that such behaviors may potentially spiral into increasingly intense aggressive behaviors (Andersson & Pearson, 1999).

Hypothesis 5: Passive leadership is positively associated with workplace aggression.

Destructive Leadership and Workplace Aggression

Unlike passive leadership, (active) destructive leadership might be more problematic when it comes to workplace aggression. Destructive leadership is a broad construct comprising many forms of volitional leader behaviors that have the intent or potential to encourage followers to violate their organizations' interests (Mackey et al., 2019). It involves voluntary acts committed toward followers that most people would perceive as harmful, such as mocking, belittlement, rudeness, and breaking promises. This category of leadership includes types like abusive leadership, authoritarian leadership, toxic leadership, petty tyranny, leader narcissism, leader undermining, etc. (e.g., Mackey et al., 2019). According to social exchange theory (Blau, 1964), destructive behaviors from leaders may spiral into increasingly negative interactions with the leader, suggesting an increase in retaliation or leader-targeted aggression

(Greenberg & Barling, 1999; Hershcovis et al., 2007). In other cases, employees are unwilling or do not dare to retaliate directly toward destructive leaders; instead, they displace aggression toward innocent others, which also suggests an increase in workplace aggression. Moreover, as per social learning theory (SLT; Bandura, 1977), followers mimic the behavior of their leaders. Therefore, under destructive leadership, employees are likely to adopt negative behavior by imitating their leaders, such that workplace aggression might increase. For these reasons, we expect that:

Hypothesis 6: Destructive leadership is positively associated with workplace aggression.

The Relative Importance of Different Leaderships

Leadership behaviors in different categories are distinct from each other but can still overlap conceptually (Bormann & Rowold, 2018; Derue et al., 2011). For example, ethical leaders use both transformational and transactional leadership behaviors to influence their followers (Brown et al., 2005); components of authentic leadership share similarities with other leadership types, such as transformational leadership (Avolio & Gardner, 2005). It is important to understand the relative strength of the association that each leadership style has with workplace aggression.

Different leadership components are differentially associated with various outcomes, such that certain leader behaviors might be more effective in influencing some outcomes than others. First, values-based and moral leadership seem to play the most important roles when it comes to predicting workplace aggression. Hoch and colleagues (2018) revealed that ethical leadership was most strongly associated with employee deviance as compared to other leadership types. Similarly, Ng and Feldman (2015) found that ethical leadership significantly predicted employee deviance behavior (although weakly in some cases), even after taking into account transformational and destructive leadership. Relational-oriented leadership might be the next major player in influencing workplace aggression. It influences employees' ratings of contextual performance, job satisfaction, and organizational commitment (Michel et al., 2011). Relational-oriented behaviors also have a greater influence on employee-rated job attitudes and leader-rated managerial effectiveness than change-oriented behaviors (Michel et al., 2011). Finally, change-oriented leadership seems more important for workplace aggression than task-oriented leadership. Change-oriented leadership encourages innovative behaviors and takes the initiative to identify problems and solve problems such as workplace aggression (Yukl, 2012), while task-oriented leadership mainly impacts in ratings of task performance, involving little empathic behavior that is sensitive to the needs of followers (Derue et al., 2011) and therefore less likely to affect workplace aggression. We therefore hypothesize that:

Hypothesis 7: The associations between different leadership behaviors and workplace aggression will differ across leadership types. The relative contribution of values-based and moral leadership to (the negative association of) workplace aggression will be strongest, with the contributions of relational-oriented, change-oriented, and task-related leadership coming second, third, and fourth, respectively.

Leadership and Workplace Aggression: Potential moderators

Considering the possible boundary conditions of the associations between leadership and workplace aggression, we further examined national culture (i.e., power distance), and methodological factors (i.e., rating source and measurement time lag) as potential moderators.

Power distance The culturally endorsed implicit leadership theory (CLT; Den Hartog et al. 1999) suggests that cultural background may affect followers' responses to leadership. Employees have their own beliefs, convictions, and assumptions in terms of effective leadership behaviors, such that individuals in different cultural groups may have different conceptions of what leadership entails (Offermann et al., 1994). A good example of this is power distance. Power distance captures the extent to which people tolerate power differences in interpersonal relationships (Hofstede et al., 2010). Given the difference in power between supervisors and employees, power distance especially plays a role when considering the effects of leadership on employee attitudes and behaviors. Indeed, numerous (meta-analytic) studies found that associations between leadership and employee outcomes depend on power distance (e.g., Li et al., 2021; Rockstuhl et al., 2012; Zhang et al., 2019). For example, in a meta-analytic study by Peng and Kim (2020), the negative association between ethical leadership and counterproductive behaviors was stronger in high power distance cultures (i.e., where power is strongly tolerated) than in low power distance cultures (i.e., where power is weakly tolerated). Given that workplace aggression is an interpersonal process and normally involves a power imbalance between victims and perpetrators (Hershcovis, 2011; Salin, 2003), it is likely that power distance also influences associations between leadership and workplace aggression.

Employees in high power distance countries hold greater respect for authority, thus their behaviors are regulated by rewards and punishments from leaders, and are consistent with their leaders' expectations, suggesting a stronger connection between leadership and workplace

aggression. Moreover, in high power distance cultures, leaders have a higher social status (House et al., 2004), and are more often seen as attractive role models by followers (Peng & Kim, 2020). Thus, the association between leadership and workplace aggression might be stronger in high power distance cultures than in low power distance cultures. Therefore, we hypothesize that:

Hypothesis 8: The associations between leadership and workplace aggression are stronger in samples from higher power distance cultures than in samples from lower power distance cultures.

Methodological Factors Given that meta-analyses estimate overall effect sizes, it is important to estimate/evaluate the heterogeneity in the underlying effect sizes. Research may differ from each other regarding study characteristics, such as whether it concerns cross-sectional or longitudinal research, self-report or other-report data, etc. Methodological factors are therefore often taken as moderators when examining bivariate relationships (e.g., Howard et al., 2020; Nielsen et al., 2010). Previous research revealed that methodological factors may account for variation in the prevalence rates of workplace aggression (Neall & Tuckey, 2014; Nielsen et al., 2010). An over-reliance on self-report, single-time studies within the leadership and aggression field thus limits the ability to interpret the findings. To test the robustness of the main effects found in our analysis, we examine the moderating effects of rating source and measurement time lag to reduce common method bias (CMBs, see Podsakoff et al., 2012). That is, we examine whether using single source data (e.g., self-rated measures) versus multiple sources data (e.g., self-rated, other-rated and/or objective measures) and adopting a cross-sectional (i.e., leadership and workplace aggression are measured concurrently) versus a longitudinal research design (i.e., workplace aggression is measured for a different time point than leadership) affects the correlations between leadership and workplace aggression.

Research Question Do the associations between leadership and workplace aggression differ depending on (a) rating source and (b) measurement time lag?

Method

Literature Search

We conducted a systematic literature search to identify relevant papers. First, we conducted a computerized bibliographic search in Web of Science (SSCI), EBSCO, PsycINFO, Scopus, ProQuest, and Google Scholar (until December 31st, 2020). The systematic searches were performed by combining every possible combination of three groups of keywords: (1) keywords related to work (e.g., "job", "occupational", "employee"); (2) workplace aggression (e.g., "bullying", "mobbing", "harassment", "ostracism", "exclusion", "social undermining", "victimization", "mistreatment", "aggression", "incivility"), which is consistent with previous meta-analyses (e.g., Greco et al., 2019; Hershcovis, 2011); and (3) a general term of leadership and all kinds of specific leadership styles (i.e., "transformational leadership", "authentic leadership", "ethical leadership", "spiritual leadership", "servant leadership", "shared leadership", "transactional leadership", "paternalistic leadership", "laissez-faire leadership", "passive leadership", "abusive supervision", "narcissistic leadership", "toxic leadership", "destructive leadership", "autocratic leadership", and "tyrannical leadership"). To minimize the threat of publication bias, we also included unpublished papers such as conference papers and dissertations in the databases mentioned above.

Second, we conducted a manual search in relevant journals in management, organizational behavior, and applied psychology (i.e., *Academy of Management Journal, Journal of Applied Psychology, Journal of Business Ethics, Journal of Organizational Behavior, Journal of Management, Journal of Occupational Health Psychology, Journal of Occupational and Organizational Psychology, Personnel Psychology, The Leadership Quarterly* and *Work and Stress*). Third, we checked the reference lists of relevant articles included in important qualitative and quantitative reviews of the past decade (i.e., Aquino & Thau, 2009; Bartlett & Bartlett, 2011; Bowling & Beehr, 2006; Cortina, 2017; Dhanani et al., 2020, 2021; Feijó et al., 2019; Gupta et al., 2020; Hershcovis, 2011; Hershcovis & Barling, 2010; Hershcovis et al., 2007; Howard et al., 2020; Mackey et al., 2021; Nielsen et al., 2019; Yao et al., 2021).

Inclusion Criteria

Papers included in the systematic review had to meet the following inclusion criteria: (a) they should explore the relationship between leadership and workplace aggression; (b) the reported results were sufficient to calculate an effect size for the leadership-workplace aggression association (e.g., sample size and correlations). Studies (1) focusing on other subjects, such as children or adolescents (< 18 years old) or LGBTIQ + people specifically, or (2) that were conducted in other contexts, such as schools, families (domestic violence), or (3) that were qualitative interview studies, case studies and theoretical articles, were excluded. After considering all the criteria and omitting non-English papers, 3113 studies were selected for

screening. Three authors were involved in the screening process, and they carefully assessed each identified article to see if it was eligible for the current meta-analysis. The inter-rater agreement was calculated using Cohen's kappa, which was sufficiently high (Cohen's kappa = 0.85). After discussing and resolving discrepancies, we finally identified a total of 140 empirical articles, which together contained 165 independent samples (overall $N = 115{,}190$). The detailed information of the included studies is presented in online Appendix A. Moreover, the PRISMA flow diagram was employed to show the research and selection process (Moher et al., 2009) (see Fig. 1).

Coding Process

Two authors were involved in the coding process. Based on a coding scheme developed by the first author, two authors coded 70 studies to ensure and improve the accuracy and utility of the coding scheme, with the percentage of agreement on key variables (e.g., effect size, sample size) exceeding 96%. After discussing and resolving discrepancies, the remaining articles were divided in half and coded independently. We coded the sample size, effect size and reliabilities of the measures, nationality of a sample, rating source (i.e., single source versus multiple sources), and measurement time lag (i.e., cross-sectional versus longitudinal). In line with prior studies using Hofstede et al.'s (2010) cultural values as moderators in meta-analyses (Jiang et al., 2012; Park et al., 2019), we obtained the power distance scores from Hofstede and colleagues (2010, pp. 57–59).

Finally, we included 11 leadership styles (i.e., ethical, transformational, supportive, authentic, transactional leadership, LMX, and laissez-faire leadership, and four in the destructive leadership category: abusive, narcissistic, uncivil and authoritarian leadership). The definitions of each leadership style are provided in Table 2.

Meta-Analysis Procedure

A meta-analysis was conducted using Hunter and Schmidt's (2015) procedures for random effects meta-analysis. Formulas were computed in Microsoft Excel and in R using the "psychmeta" package (Dahlke & Wiernik, 2019). If more than one correlation was available from an independent sample for a specific analysis, the composite of those correlations was used (Ghiselli et al., 1981). We first calculated sample size-weighted meta-analytic correlations (r) to correct for sampling error and then calculated true population correlations (ρ) that corrected for both sampling error and measurement error. Measurement error in two correlated variables was corrected using their respective reliability coefficient (Cronbach's alpha). When reliabilities for leadership or workplace aggression were not reported in the original studies, we used the average alpha from studies that reported reliability to correct for measurement error. For all

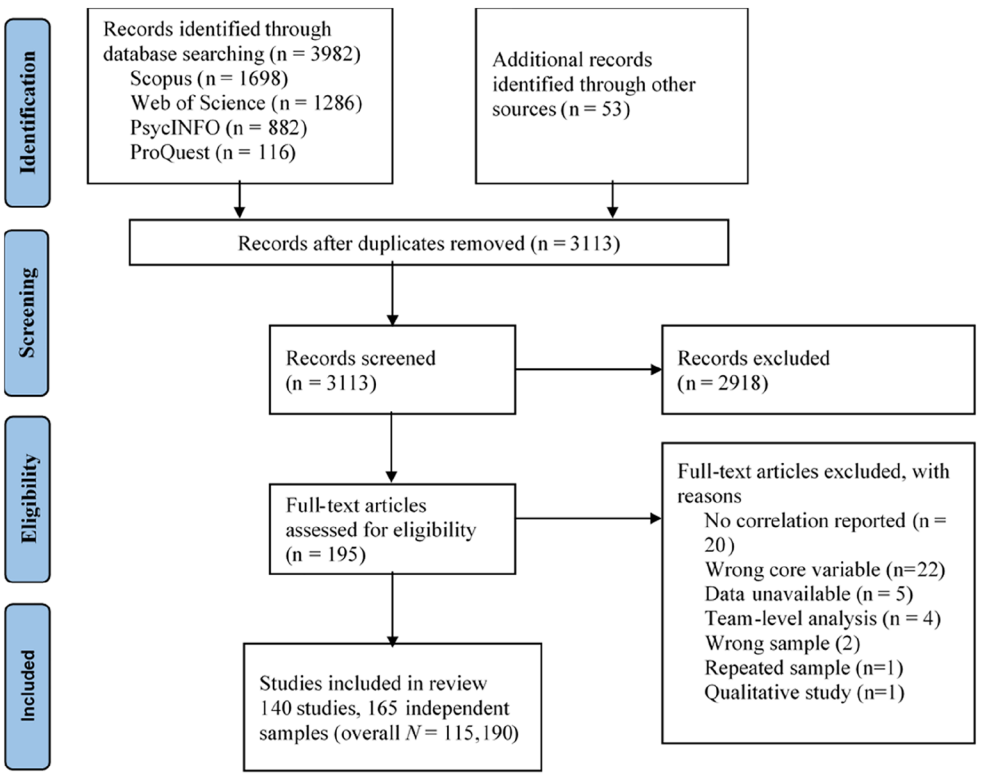

Fig. 1 PRISMA flow diagram of included studies

Table 2 Definitions for each construct included in leadership

Category	Leadership	Definition	Citation
Change-oriented	Transformational	A transformational leader is one who motivates followers to do more than they originally expected to do	Bass (1985)
Task-oriented	Transactional	Transactional leadership occurs when one person connects with others for the intention of an exchange of valued things that could be economic or political or psychological in nature	Burns (1978)
Relational-oriented	Supportive	Supportive leadership describes a cluster of leader behaviors that aim to provide access to resources, assistance, and encouragement in the face of difficulties	House (1971)
	LMX	Leader-member exchange is defined as the quality of exchange between leader and employee	Graen and Cashman (1975)
Values-based and Moral	Ethical	Ethical leaders engage in "normatively appropriate conduct through personal actions and interpersonal relationships, and the promotion of such conduct to followers through two-way communication, reinforcement, and decision-making"	Brown et al., (2005, p. 120)
	Authentic	"Authentic leadership in organizations is a process that draws from both positive psychological capacities and a highly developed organizational context, which results in both greater self-awareness and self- regulated positive behaviors on the part of leaders and associates, fostering positive self-development"	Luthans and Avolio (2003, p. 243)
Passive	Laissez-faire	Laissez-faire leadership is "a non-leadership component- leaders avoid accepting their responsibilities, are absent when needed, fail to follow up requests for assistance, and resist expressing their views on important issues"	Bass (1997, p. 134)
Destructive	Abusive	Supervisors engage in "the sustained display of hostile verbal and non-verbal behaviors, excluding physical contact"	Tepper (2000, p. 178)
	Narcissistic	"Narcissistic leadership occurs when leaders' actions are principally motivated by their own egomaniacal needs and beliefs, superseding the needs and interests of the constituents and institutions they lead"	Rosenthal and Pittinsky (2006, p. 629)
	Uncivil/Uncivil Supervisors	Leaders' use of "low-intensity deviant behavior with ambiguous intent to harm the target, in violation of workplace norms for mutual respect. Uncivil behaviors are characteristically rude and discourteous, displaying a lack of regard for others"	Andersson and Pearson (1999, p. 457)
	Authoritarian	Authoritarian leadership "asserts absolute authority and control over subordinates and demands unquestionable obedience"	Cheng et al., (2004, p. 91)

single-item measures, we assumed a reliability of 1 (McKee-Ryan et al., 2005).

As Hunter and Schmidt (2015) suggested, for each meta-analytic relationship we estimated the total number of independent studies associated with the reported relationship (k), the total sample size across all studies (N), the sample-weighted correlation (r), the corrected correlation (ρ), and 95% confidence intervals and 80% credibility intervals for ρs. CIs reflect the possible amount of sampling error in ρs, while CVs indicate the possible range of ρs after the sampling error is corrected. We also computed the proportion of observed variance in the observed correlation due to statistical artifacts (%Var), the chi-square value of heterogeneity testing (Q statistics), and

the percentage of variance due to artifacts (I^2) and the variance of the distribution of true effect sizes (τ^2). A Var% lower than 75%, or an I^2 higher than 75%, or a significant Q statistic indicates that the meta-analyzed relationship has potential moderators.

Next, we conducted relative weights analyses to further understand the unique predictive role of different leadership types on workplace aggression (Tonidandel & LeBreton, 2015). Relative weights deliver meaningful and interpretable estimates of predictor strength even given high multicollinearity (Tonidandel & LeBreton, 2011, 2015). To conduct relative weights analyses, we first constructed a meta-analytic correlation matrix that included all types of leadership and workplace aggression as input. Then relative weights analyses calculated both raw and rescaled relative weights. The former reflects the proportion of variance in the outcome (i.e., performance ratings) that is attributed to each of the predictor variables, while the latter reflects the percentage of predicted variance that is accounted for by each predictor variable (calculated by dividing the relative weights by the model R^2; LeBreton et al., 2007).

Finally, we conducted meta-regression and subgroup analyses to examine the moderating roles of power distance and methodological factors (Dahlke & Wiernik, 2019). In addition, since meta-analyses can be heavily influenced by outliers and large samples, sensitivity checks were conducted to identify studies that might have an undue influence on the overall effect. Specifically, leave-one-out-analyses were conducted to identify outliers and/or influential studies (Viechtbauer & Cheung, 2010). Furthermore, non-significant studies are likely to stay unpublished and hidden in file drawers, presenting a threat to the robustness of meta-analytic results (R. Rosenthal, 1979). We therefore examined publication biases using multiple approaches, such as funnel plots, Egger's test (Egger et al., 1997), the trim-and fill approach (Duval & Tweedie, 2000) as well as comparing the effect sizes of published versus unpublished studies (Hunter & Schmidt, 2015). Accordingly, we reported ΔK to indicate the number of potentially missing studies for a meta-analyzed correlation, and adj-r, which represents the adjusted correlation after filling these studies. Finally, we explored associations between leadership and different forms of workplace aggression. Analyses and results are reported in the supplementing information.

Results

Test of bivariate correlations

Bivariate correlations between leadership styles and workplace aggression are presented in Table 3. Overall, 10 of the 11 leadership styles examined here were significantly related to workplace aggression, and the simple average of the absolute magnitudes of all the relationships examined was $\rho = 0.33$. Thus, at an omnibus level, it is clear that substantial correlations (i.e., moderate to strong) exist between leadership and workplace aggression.

The results showed that the correlation between change-oriented (i.e., transformational) leadership and workplace aggression was $\rho = -0.24$ (95%CI [−0.33, −0.15], supporting Hypothesis 1). However, task-oriented (i.e., transactional) leadership had a nonsignificant correlation with workplace aggression ($\rho = -0.16$, 95%CI [−0.36, 0.05]), thus Hypothesis 2 was not supported.

In line with Hypothesis 3, there was a significant and negative correlation between overall relational – oriented leadership and workplace aggression ($\rho = -0.26$, 95%CI [−0.34, −0.25]). Specifically, supportive leadership and LMX were both negatively associated with workplace aggression ($\rho = -0.30$, 95%CI [−0.36, −0.25] and $\rho = -0.29$, 95%CI [−0.36, −0.23], separately), supporting Hypothesis 3. We also found support for Hypothesis 4: values-based and moral leadership were negatively associated with workplace aggression ($\rho = -0.29$, 95%CI [−0.38, −0.27]). Specifically, both authentic leadership and ethical leadership were negatively associated with workplace aggression ($\rho = -0.26$, 95%CI [−0.32, −0.19] and $\rho = -0.36$, 95%CI [−0.44, −0.28], separately).

Consistent with Hypothesis 5, we found the expected positive association between passive (i.e., laissez-faire) leadership and workplace aggression ($\rho = 0.37$, 95%CI [0.28, 0.45]). Thus, Hypothesis 5 was supported.

The magnitude of the correlations between overall destructive leadership and workplace aggression was $\rho = 0.47$ (95%CI [0.42, 0.52]), suggesting a strong accelerating influence of destructive leadership on workplace aggression. Thus, Hypothesis 6 was supported. Four specific leadership styles (i.e., abusive, narcissistic, uncivil and authoritarian leadership) were identified in the category of destructive leadership. The results showed the strongest negative associations between workplace aggression and abusive leadership ($\rho = 0.51$, 95%CI [0.44, 0.57]), followed by uncivil leadership ($\rho = 0.46$, 95%CI [0.38, 0.54]), narcissistic leadership ($\rho = 0.44$, 95%CI [0.12, 0.75]), and authoritarian leadership ($\rho = 0.37$, 95%CI [0.26, 0.47]).

Relative Weights Analysis

We then probed the relative strength of each type of leadership on workplace aggression. Table 4 summarizes the meta-analytic correlation matrix for variables used to conduct relative weights analyses. These intercorrelations were from the present study and other recent relevant meta-analyses (for associations not included here. e.g., Hoch et al., 2018; see

Table 3 Meta-Analysis of the correlations between leadership and workplace aggression

Leadership variable	*k*	*N*	*r*	*SDr*	*ρ*	*SDρ*	CI_{LL}	CI_{UL}	CV_{LL}	CV_{UL}	Var%	*Q*	I^2	τ^2	Δ*K*	adj-*r*
Change-oriented																
Transformational	22	8134	−0.22	0.17	−0.24	0.19	−0.33	−0.15	−0.49	0.01	8.08	259.87**	91.92	0.03	0	−0.22
Task-oriented																
Transactional	10	2526	−0.15	0.24	−0.16	0.28	−0.36	0.05	−0.54	0.22	5.96	151.08**	94.04	0.08	0	−0.15
Relational-oriented	41	39,103	−0.26	0.11	−0.29	0.13	−0.34	−0.25	−0.46	−0.13	6.48	617.08**	93.52	0.02		
Supportive	14	19,626	−0.28	0.09	−0.30	0.10	−0.36	−0.25	−0.44	−0.17	6.91	188.15**	93.09	0.01	6	−0.17
LMX	25	18,107	−0.25	0.13	−0.29	0.16	−0.36	−0.23	−0.50	−0.09	6.24	384.36**	93.76	0.02	2	−0.24
Values-based and Moral	34	14,478	−0.29	0.14	−0.33	0.14	−0.38	−0.27	−0.51	−0.14	10.60	311.42**	89.40	0.02		
Authentic	12	6156	−0.22	0.09	−0.26	0.09	−0.32	−0.19	−0.38	−0.14	21.80	50.46**	78.20	0.01	2	−0.21
Ethical	18	6849	−0.32	0.13	−0.36	0.15	−0.44	−0.28	−0.55	−0.16	10.57	160.76**	89.43	0.02	1	−0.33
Passive																
Laissez-faire	17	14,758	0.31	0.14	0.37	0.16	0.28	0.45	0.15	0.58	4.65	344**	95.35	0.03	1	0.31
Destructive	83	36,191	0.42	0.19	0.47	0.21	0.42	0.52	0.20	0.74	4.39	1869.64**	95.61	0.04		
Abusive	53	19,933	0.45	0.22	0.51	0.24	0.44	0.57	0.20	0.81	3.73	1392.56**	96.27	0.06	21	0.30
Narcissistic	4	1498	0.38	0.15	0.44	0.19	0.12	0.75	0.12	0.75	6.80	44.11**	93.20	0.04	1	0.37
Uncivil	14	5526	0.41	0.13	0.46	0.13	0.38	0.54	0.28	0.63	11.41	113.97**	88.59	0.02	7	0.33
Authoritarian	9	7917	0.33	0.12	0.37	0.14	0.26	0.47	0.18	0.56	5.68	140.8**	94.32	0.02	3	0.32

k number of studies contributing to meta-analysis, *N* total sample size, *r* mean sample-size-weighted observed correlations, *SDr* mean sample-size weighted observed standard deviation, ρ mean sample-size-weighted corrected correlation, *SD*ρ estimated true standard deviation of corrected correlations, CI_{LL} and CI_{UL} lower and upper bounds, respectively, of the 95% confidence interval, CV_{LL} and CV_{UL} lower and upper bounds, respectively, of the 80% credibility interval around the mean true-score correlations, *Var*% percentage of variance attributable to statistical artifacts, *Q* Chi-square test of heterogeneity, I^2 proportion of observed variance in the observed correlation attributable to statistical artifacts, τ^2 the variance of the distribution of true effect sizes, Δ*K* number of filled studies in trim-and-fill analysis, *adj-r* adjusted *r* after adding filled studies

*$p < .05$

**$p < .01$

Table 4 for specific sources). However, for some correlations (e.g., between destructive leadership and other categories of leadership), we did not have enough information within our sample and could not find previous meta-analytic estimates. We therefore conducted relative weights analysis based on five leadership types (i.e., ethical, transformational, authentic, transactional leadership and LMX). The results revealed that ethical leadership had greater relative importance when it came to explaining workplace aggression (39.13%), and followed by LMX (23.72%), over transactional, authentic, and transformational leadership (see Table 5). Hypothesis 7 was therefore partly supported.

Table 5 The relative importance of different leadership behaviors in predicting workplace aggression

Variables	RW	% R^2
Transformational leadership	0.03	12.28
Transactional leadership	0.04	15.08
LMX	0.06	23.72
Authentic leadership	0.03	13.15
Ethical leadership	0.10	39.13
Total R^2	0.25	

RW raw relative weights and % R^2 rescaled relative weights, which represent the amount of explained variance and the percentage of explained variance in the outcome, respectively, that are attributable to each predictor

Tests of Moderator Factors

As shown in Table 3, the Q tests of heterogeneity are significant for all meta-correlations, and all I^2 values are above 75%. Therefore, the correlations were not homogenous, and moderators could be present. As hypothesized, we further examined possible boundary conditions of national culture (i.e., power distance) and methodological factors (i.e., rating source and measurement time lag) for the associations between leadership and workplace aggression.

Meta-regression analyses revealed no significant moderation effect of power distance on the associations between most of the leadership and workplace aggression, except for transactional leadership (Table 6). More specifically, the negative association between transactional leadership and workplace aggression was stronger with increasing country power distance levels (QM = 5.49, $z = -2.34$, $p < 0.05$). The results of subgroup analyses showed that transactional leadership was more strongly associated with workplace aggression in samples from higher power distance cultures ($k = 2$, $\rho = -0.41$) than in samples from lower power distance cultures ($k = 6$, $\rho = -0.16$). Hypothesis 8 was therefore partly supported. Research question explored whether methodological factors (a) rating source and (b) measurement time lag moderated the correlations between leadership and workplace aggression. First, for different rating sources (single

Table 4 Meta-analytic correction matrix used for the relative weights analysis

	Transformational	Transactional	LMX	Authentic	Ethical	Workplace aggression
Transformational						
Transactional	0.65[d]					
k/*N*	(152 /56789)					
LMX	0.73[c]	0.63[e]				
k/*N*	(20 /5451)	(17 /5274)				
Authentic	0.72[b]	0.55[b]	0.65[b]			
k/*N*	(23 /5414)	(10 /1812)	(6 /2083)			
Ethical	0.71[a]	0.69[a]	0.71[a]	0.85[c]		
k/*N*	(20 /3717)	(13 /2232)	(18 /4052)	(3 /462)		
Workplace aggression	−0.24	−0.16	−0.29	−0.26	−0.36	
k/*N*	(22 /8134)	(10 /2526)	(25 /18107)	(12 /6156)	(18 /6849)	

All values are from our meta-analysis unless otherwise noted

k the number of independent samples, *N* cumulative sample sizes, *LMX* leader-member exchange

[a]FromHoch et al. (2018)

[b]FromBanks et al. (2016)

[c]From Lee et al., (2020a, 2020b)

[d]FromRowold et al. (2015)

[e]FromBorgmann et al. (2016)

Table 6 Meta-analysis results for leadership and workplace aggression: the role of power distance

Leadership	*k*	*N*	*QE*	*QM*	*QMp*	*z*	*zp*	R^2
Transformational	17	6315	206.91	0.70	0.41	−0.82	0.41	0.00
Transactional	8	1976	77.48	5.49*	0.02	−2.34	0.02	0.41
Supportive	12	19,187	138.90	2.61	0.11	−1.62	0.11	0.14
LMX	23	17,521	310.84	0.03	0.87	−0.17	0.87	0.00
Authentic	10	4798	25.89	0.00	0.96	−0.05	0.96	0.00
Ethical	18	6849	136.82	2.94	0.09	1.71	0.09	0.12
Laissez-faire	14	13,163	261.31	0.01	0.93	0.09	0.93	0.00
Abusive	44	17,732	1184.53	0.85	0.36	−0.92	0.36	0.00
Narcissistic	4	1498	11.46	0.45	0.51	−0.67	0.51	0.00
Uncivil	14	5526	94.00	0.08	0.78	−0.27	0.78	0.00
Authoritarian	8	7680	135.03	0.04	0.85	−0.19	0.85	0.00

k number of studies contributing to meta-analysis, *N* total sample size, *QE* test statistic for the test of (residual) heterogeneity, *QM* test statistic for the omnibus test of coefficient, *QMp* p-value for the omnibus test of coefficient, *z* test statistics of the coefficient, *zp* p-values for the test statistics, R^2 amount of heterogeneity accounted for by the moderators included in the model. *$p < .05$

source versus multiple sources), the results in Table 7 indicated that most correlations between leadership and workplace aggression did not differ significantly. Exceptions were found for transformational leadership and abusive leadership, which were significantly stronger associated with workplace aggression in the single source (i.e., self-rated) samples than in the multiple sources rating samples (respectively, $t = 3.0$ and $t = 3.1$, $ps < 0.05$). Second, the results in Table 8 showed that there was no significant moderating effect of measurement time lag (i.e., cross-sectional vs. longitudinal) on the correlation between leadership and workplace aggression.

Tests of Sensitivity and Publication Bias

For examining potential publication bias, Egger regression tests were statistically not significant for all leadership-aggression correlations (Table SI1). The trim-and-fill procedure showed that our initial results were underestimated due to publication bias (as seen in Table 3), and the "true" effect when controlling for selective publication might be higher than the original pooled effect sizes. Further, when comparing the effect sizes of published versus unpublished studies, the results showed no significant differences between published and unpublished studies. Supplementary information (Table

Table 7 Meta-analysis results for leadership and workplace aggression: the role of rating sources

Leadership	Subgroup	*k*	*N*	*r*	*ρ*	*SDρ*	CI_{LL}	CI_{UL}	*t*	*p*
Transformational	Single source	16	6668	−0.25	−0.28	0.17	−0.38	−0.19	−3.0	0.02
	Multiple sources	6	1466	−0.05	−0.05	0.16	−0.24	0.13		
Transactional	Single source	7	1955	−0.2	−0.22	0.29	−0.49	0.05	−1.6	0.16
	Multiple sources	3	571	0.03	0.03	0.19	−0.49	0.56		
LMX	Single source	20	15,708	−0.25	−0.29	0.15	−0.37	−0.22	−0.1	0.92
	Multiple sources	5	2399	−0.23	−0.28	0.21	−0.54	−0.02		
Ethical	Single source	17	6736	−0.33	−0.36	0.14	−0.44	−0.29	NA	NA
	Multiple sources	1	113	0.01	0.01	NA	−0.19	0.21		
Laissez-faire	Single source	12	13,832	0.30	0.36	0.16	0.25	0.46	−1.8	0.12
	Multiple sources	5	926	0.45	0.51	0.16	0.30	0.73		
Abusive	Single source	43	15,481	0.50	0.56	0.20	0.50	0.63	3.1	0.01
	Multiple sources	10	4452	0.25	0.30	0.25	0.12	0.48		
Narcissistic	Single source	2	445	0.58	0.72	0.00	0.70	0.74	NA	NA
	Multiple sources	2	1053	0.30	0.33	0.00	0.05	0.62		
Authoritarian	Single source	7	7583	0.33	0.36	0.13	0.23	0.48	−2.8	0.0729
	Multiple sources	2	334	0.48	0.57	0.08	−0.38	1.51		

k number of studies contributing to meta-analysis, *N* total sample size, ρ mean sample-size-weighted corrected correlation, *SD*ρ estimated true standard deviation of corrected correlations, CI_{LL} and CI_{UL} lower and upper bounds, respectively, of the 95% confidence interval

Table 8 Meta-analysis results for leadership and workplace aggression: the role of measurement time lag

Leadership Style	subgroup	*k*	*N*	*r*	*ρ*	*SDρ*	CI_{LL}	CI_{UL}	*t*	*p*
Transformational	Cross-sectional	19	7412	−0.22	−0.24	0.19	−0.34	−0.14	−0.16	0.88
	Longitudinal	3	722	−0.22	−0.23	0.08	−0.50	0.03		
Transactional	Cross-sectional	9	2209	−0.15	−0.16	0.30	−0.40	0.08	NA	NA
	Longitudinal	1	317	−0.13	−0.14	NA	−0.25	−0.02		
Supportive	Cross-sectional	12	19,090	−0.28	−0.30	0.10	−0.37	−0.24	0.00	1.00
	Longitudinal	2	536	−0.28	−0.30	0.08	−1.21	0.61		
LMX	Cross-sectional	23	17,869	−0.25	−0.30	0.16	−0.36	−0.23	−1.51	0.36
	Longitudinal	2	238	−0.06	−0.07	0.21	−2.14	2.00		
Authentic	Cross-sectional	11	5951	−0.23	−0.26	0.09	−0.33	−0.19	NA	NA
	Longitudinal	1	205	−0.19	−0.21	NA	−0.36	−0.06		
Ethical	Cross-sectional	14	5233	−0.33	−0.37	0.15	−0.46	−0.27	−0.5	0.64
	Longitudinal	4	1616	−0.30	−0.33	0.14	−0.57	−0.09		
Laissez-faire	Cross-sectional	14	13,639	0.32	0.37	0.16	0.27	0.47	0.37	0.74
	Longitudinal	3	1119	0.28	0.33	0.17	−0.10	0.77		
Abusive	Cross-sectional	22	9899	0.41	0.48	0.24	0.37	0.58	−0.91	0.37
	Longitudinal	31	10,034	0.48	0.54	0.23	0.45	0.62		
Uncivil	Cross-sectional	9	2693	0.45	0.51	0.01	0.47	0.55	1.24	0.28
	Longitudinal	5	2833	0.37	0.41	0.18	0.18	0.64		
Authoritarian	Cross-sectional	6	6783	0.36	0.40	0.06	0.33	0.47	1.52	0.26
	Longitudinal	3	1134	0.15	0.16	0.27	−0.53	0.84		

k number of studies contributing to meta-analysis, *N* total sample size, ρ mean sample-size-weighted corrected correlation, *SD*ρ estimated true standard deviation of corrected correlations, CI_{LL} and CI_{UL} lower and upper bounds, respectively, of the 95% confidence interval

SI2) presents the results of sensitivity analyses for outliers. Because we had no substantive theoretical reason to exclude outliers, these were retained (Wilmot & Ones, 2019).

Additional Analysis

We further explored whether our findings depend on the type of workplace aggression. The results showed only few significant differences for associations between leadership and workplace aggression when looking at incivility versus bullying. Exceptions are supportive leadership and abusive leadership, which were more strongly associated with workplace incivility than workplace bullying (respectively, $t = 3.15$ and $t = -3.92$, $ps < 0.01$) (see Table SI3).

Discussion

The current study took a meta-analytic approach to better understand the associations between leadership and workplace aggression. Through integrating similar constructs for the same or very similar underlying behaviors into one umbrella term, workplace aggression, we systematically synthesized empirical work ($k = 165$, $N = 120{,}986$) to produce robust estimates of the correlations between leadership and workplace aggression. The findings showed a clear main trend, namely, that change-oriented, relational-oriented, and values-based and moral leadership were negatively associated with workplace aggression (an exception was task-oriented leadership, which was not associated with workplace aggression), while laissez-faire and all destructive leadership types were positively associated with workplace aggression. Moreover, ethical leadership showed the strongest negative association with workplace aggression.

Theoretical Implications

The findings of this meta-analysis have several implications for future research on leadership and workplace aggression. First, this study underscores the crucial role of leadership related to workplace aggression. Previous research exploring the predictors of workplace aggression has largely relied on victims' personality traits and demographic characteristics (victim precipitation theory, e.g., Cortina et al., 2018; Dhanani et al., 2020; Henle & Gross, 2014), or contextual factors (e.g., job demands). Our study provides the first systematic meta-analysis investigating the role of different leaderships in associating with workplace aggression. Whereas only small to moderate correlations were found between individual characteristics and workplace aggression in previous meta-analyses (e.g., Bowling & Beehr, 2006; Hershcovis et al., 2007), the association between leadership

and workplace aggression was found moderate in magnitude in our meta-analysis, suggesting a more important role of leadership. Our study thus extends the literature on the antecedents of workplace aggression by considering the different associations between leadership and workplace aggression. This further supports the notion that contextual factors (e.g., job demands and social factors) seem to be stronger predictors of workplace aggression than individual antecedents (e.g., gender, self-esteem, negative affectivity) (e.g., Bowling & Beehr, 2006; Dhanani et al., 2020; Hershcovis et al., 2007; Yao et al., 2021).

Second, our meta-analysis contributes to leadership research by providing a comprehensive review of the associations between leadership and workplace aggression as well as providing evidence on the relative weight of specific leaderships. Among various meta-categories of leadership (i.e., change, task, relations, values-based and moral, passive and destructive leadership), destructive leadership established the strongest absolute association with workplace aggression. More specifically, abusive leadership showed to be much more deleterious than narcissistic, uncivil, or authoritarian leadership in accelerating workplace aggression. Although not as strongly as destructive leadership, laissez-faire leadership was also positively associated with workplace aggression. When it comes to negative associations between leadership and workplace aggression, our results revealed that ethical leadership showed the strongest association as compared to other leaderships. This is consistent with previous meta-analyses (Hoch et al., 2018; Lee et al., 2020a, 2020b) revealing that ethical leadership has a unique and predominant role in inhibiting workplace aggression (Bedi et al., 2016; Brown & Treviño, 2006). However, inconsistent with our expectation, authentic leadership (as another type of values-based and moral leadership) was less important than LMX (relational-oriented) for workplace aggression. An explanation could be that authentic leadership focuses explicitly on leaders' authenticity, such as self-awareness and self-regulated positive behavior, which may be less effective and direct in dealing with workplace aggression than the quality of leader-member relationships. Further research including more information on other types of values-based and moral leadership (e.g., servant leadership; Lee et al., 2020a, 2020b) may help to better understand whether the meta-category of values-based and moral leadership is more important than other leadership meta-categories (e.g., relational-oriented leadership). The present study also contributes to the leadership literature by showing that emerging leadership styles (e.g., ethical leadership) demonstrate incremental validity in predicting workplace aggression. Although the leadership literature has been concerned about the redundancy and relative validity of different leadership styles, our study suggests that at least in relation to workplace aggression, the emerging leadership types (i.e., ethical leadership) have considerable added value.

Third, this study contributes to the workplace aggression literature by integrating various overlapping constructs within workplace aggression research and examining to what extent leadership is associated with this overarching construct. Without ignoring the unique characteristics of various forms of workplace aggression, we argued that for a specific type of leadership, it might be similarly related to any specific form of workplace aggression. This is because the processes through which leadership affects these different types of workplace aggression are similar, and they also draw upon the same theories (e.g., social exchange theory and social learning theory). The results presented in the supplemental information (Table SI2) support our reasoning and show that our findings are robust across various types of workplace aggression. That is, leadership is both positively as well as negatively associated with workplace aggression, regardless of the type of workplace aggression (in particular, incivility or bullying). Thus, and in line with previous research (Yao et al., 2021), our findings suggest that it is meaningful to integrate various constructs of workplace aggression, at least when addressing its associations with leadership.

Finally, inspired by culturally endorsed implicit leadership theory (CLT; Den Hartog et al. 1999), our study contributes to the leadership and workplace aggression literature by investigating the boundary conditions of the association between leadership and workplace aggression. In particular, we tested whether and how power distance as a national cultural factor and methodological factors (rating source and measurement time lag) moderated the association between leadership and workplace aggression. The results revealed that only the association between transactional leadership and workplace aggression was moderated by power distance. That is, transactional leadership was more strongly associated with workplace aggression when the level of power distance in the culture was relatively high. An explanation might be that leaders in higher power distance countries are more often seen as formal authorities carrying out their duties. Indeed, transactional leaders easily regulate employees by contingent rewards and disciplinary actions (e.g., Avolio et al., 1999). This may lead to a stronger association between transactional leadership and employee's behavior, in this case workplace aggression. Previous meta-analyses focusing on the association between leadership and employee outcomes found similar insignificant moderating effects of power distance (e.g., work engagement; Li et al., 2021). This might be explained by the variations in policies and protections adopted by individual organizations at other levels (e.g., team-level, organization-level). For example, Hon and Lu (2016) revealed that team-level power distance values mitigate the negative effects of abusive leadership in the leader–follower relationship. Moreover, instead of

directly measuring power distance, we used scores from Hofstede (2010) to code power distance in the included studies. Although this method is in line with previous meta-analyses (e.g., Jiang et al., 2012; Rockstuhl et al., 2012, 2020), future empirical research should take into account more detailed measurements of power distance. Measuring cultural factors at a national level may not adequately reflect individual-level variation in the degree to which these cultural factors are endorsed. In addition, our study reveals that for some leadership behaviors (i.e., transformational leadership and abusive leadership), their associations with workplace aggression were moderated by methodological factors. That is, data collected from a single source (i.e., self-rated) displayed larger effect sizes than those from multiple sources (e.g., from subordinates and leaders). This supports the notion that studies using self-reported research designs might bias results as they generally report larger effect sizes (e.g., Henderson and Horan 2021). Thus, future research should be cautious when interpreting findings that rely on single-source only (i.e., self-reported) and should try to employ more robust methods (e.g., multiple sources) to avoid common-method bias.

Practical Implications

Several practical lessons can be learned from this study. Our synthesis overall shows that leadership has a substantial association with workplace aggression.

Previous research on reducing workplace aggression mainly drew on victim precipitation theory and recommended educational programs for victims, such as increasing awareness of and recognition of negative behaviors, or coaching "better" responses to negative behaviors (e.g., Escartín, 2016; Gillen et al., 2017). This research extends previous implications by providing directions for organizations to employ constructive leadership, as well as reduce laissez-faire and destructive leadership. Indeed, our research reveals that ethical leadership is the most efficient positive style, and hence organizations would benefit by developing their current leaders into ethical leaders. That is, training leaders to emphasize ethical standards, create awareness about preventing aggression, reward morally sound behavior in the workplace and investigate and punish aggression where it does occur.

Moreover, leaders should recognize that their way of dealing with employees may influence the occurrence or even escalation of aggression behaviors. Employing constructive leadership and improving LMX might not be sufficient; leaders should actively *regulate* their behaviors, avoiding turning a blind eye on (or even engaging in) aggressive behaviors. Therefore, organizations should raise their leaders' awareness of the leadership-workplace aggression link, for example through leadership development programs. Another approach organizations can conduct is to initiate certain programs to minimize leaders' destructive behaviors. For example, leaders may be urged to participate in specialized training with a focus on anger management and interpersonal skills development.

Limitations and Further Research

Despite the contribution, there are several limitations in our research that should be acknowledged. First, as with any meta-analysis, the results are bound by the quality of the data available in the primary studies. Existing research primarily relied on cross-sectional studies (73.12%), which are unable to provide robust estimates of causal effects due to endogeneity biases (Antonakis et al., 2014). For example, leadership may causally predict workplace aggression, but also vice versa. Additionally, most included research mainly used data from common sources (84.95%), which might be influenced by common method bias (Podsakoff et al., 2012) as well as perceptual biases (e.g. social desirability, personality disposition of the respondent) (McCormack et al., 2018). Thus, the significant associations cannot be interpreted causally. To better address these issues, future research should use intervention or longitudinal designs (especially panel studies).

Second, although we included as much empirical research as possible on all types of leadership and workplace aggression, we were only able to test the relative importance of five rather than all specific leaderships. This was because only few primary studies examined the associations between destructive leadership and the five other leadership categories. Future research should test the relative importance of all six leadership meta-categories when more data become available. Moreover, we did not include individual factors, job characteristics (e.g., job demands and job control), and other social factors (e.g., coworkers and outsiders such as customers or patients) in our study. As a result, we cannot directly compare the relative importance of different antecedents of workplace aggression. Even for specific leadership styles, we were only able to examine our hypothesized relationships in a limited number of samples. For instance, we were not able to aggregate the association between servant leadership and workplace aggression because only one study investigated this (Peng et al., 2016). Considering that the field of leadership and workplace aggression is still growing, we hope that our work may be extended and replicated by future meta-analyses as more empirical studies appear.

Finally, we were also limited in our ability to explore the mechanisms through which leaderships are associated with workplace aggression, which is largely due to the lack of existing empirical data on potential mediators. Future research could take into account more complicated

processes, such as the spiral model (Greco et al., 2019) and trickle effects (Wo et al., 2018), when investigating the associations between leadership and workplace aggression.

Conclusion

Workplace aggression has become a predominant and increasing concern that damages both organizations and individuals. The body of research dedicated to approaches in addressing workplace aggression is increasing. The current meta-analysis confirmed the substantial role of leadership regarding workplace aggression. We found negative associations between change-oriented, relational-oriented and values-based and moral leadership with workplace aggression, as well as positive associations between laissez-faire, and destructive leadership and workplace aggression. Additionally, ethical leadership had the strongest association with reduced workplace aggression compared to other types of leadership. With this, we hope to contribute to unraveling the complex, but not to be underestimated, link between leadership and workplace aggression.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s10551-022-05184-0.

Acknowledgements The authors would like to express their gratitude to the China Scholarship Council for the support of the first author's study at Utrecht University.

Declarations

Conflict of interest All authors declare that they have no conflict of interest.

Research Involving Human and Animals Rights Not applicable.

Informed Consent Not applicable.

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