



Authentic leadership and employee health: A conditional process model

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3 **Title: Authentic leadership and employee health: A conditional process model**
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6 **Abstract**
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9 **Purpose** – The purpose of this paper is to examine the effect of authentic leadership on
10 employees' health via employees' perception of climate of authenticity across two studies. In
11 Study 2, we additionally explore the moderating role of employees' neuroticism.
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15 **Design/methodology/approach** – The hypotheses were tested across two studies using two-
16 wave survey data. In Study 1 ($n = 104$), the mediation hypothesis was tested. Study 2 ($n =$
17 146) extended Study 1 and examined the moderated mediation model.
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23 **Findings** – Across both studies, authentic leadership is positively related to employee health,
24 and employees' perceived climate of authenticity mediates this relationship. Study 2
25 additionally shows that employees' neuroticism moderates this indirect effect such that
26 perceived climate of authenticity instigated by authentic leadership is particularly conducive
27 for employees high in neuroticism as opposed to those low in neuroticism.
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35 **Practical implications** – Findings emphasize the health-promoting effect of authentic
36 leadership. It is recommended that organizations cascade, through their leaders, emotional
37 display rules that encourage genuine emotional expression.
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44 **Originality/value** – This paper addresses gaps in the leadership literature through
45 investigating perceived climate of authenticity, a mediating variable that lies at the heart of
46 authentic leadership, and integrating the role of employees' personality in the leadership
47 process.
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54 **Keywords** – leadership, authentic leadership, climate of authenticity, health, conservation of
55 resources theory
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59 **Paper type** – Research paper
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Introduction

Poor health carries high costs for individuals and organizations. Individuals who are physically and mentally unwell are less likely to live long and fulfilled lives (Foreman et al., 2018), while the financial burden of ill-health due to sickness absence, short-term disability and presenteeism weighs heavily on organizations (Goetzel et al., 2004). Leaders are in a crucial position to positively affect employees' health given that they can be regarded as the 'linking pin' between organizational policies and employees (Hammer & Zimmerman, 2011).

However, despite its considerable practical significance, leadership research has long not paid sufficient attention to health. Initially, researchers gave precedence to performance, only regarding health and well-being as means to achieving performance (Guest, 2017). When finally studied as primary outcomes, research overwhelmingly focused on transformational leadership (Inceoglu, Thomas, Chu, Plans, & Gerbasi, 2018; Skakon, Nielsen, Borg, & Guzman, 2010), a leadership style developed around the premise that it yields performance 'beyond expectations' and not health (Bass, 1985). In light of recent calls for research to focus on exploring specific outcomes that have been theoretically linked to the respective leadership style to advance theory (Hoch, Bommer, Dulebohn, & Wu, 2018), we focus on authentic leadership (AL; Walumbwa, Avolio, Gardner, Wernsing, & Peterson, 2008) which has, from the outset, been proposed as a 'pathway to positive health' (Ilies, Morgeson, & Nahrgang, 2005; Macik-Frey, Quick, & Cooper, 2009).

A few studies have tested this premise, showing that AL is positively related to employees' job satisfaction and negatively related to stress and burnout (Braun & Peus, 2018; Laschinger & Fida, 2014; Rahimnia & Sharifirad, 2015; Walumbwa et al., 2008). However, this research suffers from a number of limitations that impede our understanding of how and when AL predicts employees' health. First, research on AL has, as is the case for the wider

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2
3 leadership field (Inceoglu et al., 2018), focused on hedonic, psychological forms of well-
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5 being. This focus is narrow and provides limited insights because health is comprised of both
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7 psychological and physical dimensions (Grant, Christianson, & Price, 2007) that are
8
9 intrinsically linked (Ganster & Rosen, 2013). Given the significant costs associated with, for
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11 example, chronic physical illnesses (Buttorff, Ruder, & Bauman, 2017), research is needed
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13 that explores whether AL affects employees' overall health encompassing both physical and
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15 mental (psychological) health. Second, the process through which AL contributes to
16
17 employees' health is not well understood. Although research has revealed mediators (i.e.,
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19 attachment insecurity and work-life balance; Braun & Peus, 2018; Rahimnia & Sharifirad,
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21 2015), important underlying processes risk being overlooked. Specifically, the theoretical
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23 rationale for their inclusion can be considered shaky given that their choice was not always
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25 informed by AL theory and well-being specific theories (Inceoglu et al., 2018). Last, little is
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27 known about the boundary conditions that shape the relationship between AL and health.
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29 This is problematic as the effects of leadership have been discussed to vary between
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31 individuals (Gooty, Gavin, Gavin, Frazier, & Snow, 2009), with recent research showing that
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33 the health-enhancing effect of transformational leadership is dependent on employees'
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35 openness to experience (Hildenbrand, Sacramento, & Binnewies, 2018). In order to provide
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37 meaningful recommendations as to how line managers can promote employee health, it is
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39 thus paramount to establish whether this effect applies to all employees or whether AL
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41 particularly benefits the health of certain employees.
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50 To contribute towards a better understanding of the AL – health link, we follow
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52 Inceoglu et al.'s (2018) call and leverage conservation of resources theory (COR; Hobfoll,
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54 2001), a resource-focused framework. COR posits that individuals have an evolutionary need
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56 to acquire and conserve resources because resources are essential for maintaining health and
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58 well-being (Hobfoll, Halbesleben, Neveu, & Westman, 2018). Integrating this framework
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3 with social information processing theory (SIP; Salancik & Pfeffer, 1978), we propose that
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5 authentic leaders contribute to employees' health through shaping employees' perception of a
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7 climate of authenticity (PCA; Grandey, Foo, Groth, & Goodwin, 2013). While climate of
8
9 authenticity reflects the extent to which a work group values the expression of authentic
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11 emotions (Grandey et al., 2013), we conceptualize it as a psychological climate that reflects
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13 employees' perception of their work environment (Kuenzi & Schminke, 2009), mirroring the
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15 conceptualization of resources as per COR according to which their value for individuals'
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17 health is subjective (Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014). We thus
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19 propose that AL shapes the emotional display rules among the employees they supervise such
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21 that the expression of authentic and genuine emotions becomes the norm, which should, as a
22
23 valuable resource, facilitate employees' health. In doing so, we contribute to AL theory
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25 through exploring a process, authenticity, which lies at the heart of the AL construct (Avolio
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27 & Gardner, 2005; Lemoine, Hartnell, & Leroy, 2019), addressing recent concerns regarding
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29 the conceptual overlap of positive forms of leadership (Hoch et al., 2018; Lemoine et al.,
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31 2019). This also contributes to leadership theory because we explore an emotional pathway
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33 that represents an important, but largely neglected, route through which leaders affect
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35 employee health (Inceoglu et al., 2018).
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43 Second, we consider employees' personality, specifically neuroticism (Costa &
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45 McCrae, 1992), as a boundary condition of the mediated relationship between AL and health
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47 (second-stage moderation). Individuals high in neuroticism have poorer overall health
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49 (Charles, Gatz, Kato, & Pedersen, 2008) and experience more negative emotions which
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51 require emotional regulation (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Brotheridge
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53 & Lee, 2002) than emotionally stable individuals (Schimmack *et al.*, 2002). Regulating
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55 negative emotions is, however, resource-draining and, in line with COR, neurotic individuals
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57 should thus benefit from PCA more in regards to their health than emotionally stable
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3 individuals (Halbesleben et al., 2014) because PCA should constitute a more valuable self-
4 regulatory break for them (Grandey et al., 2013). In proposing neuroticism as a moderator,
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6 we contribute to the AL and wider leadership literatures through highlighting that the effects
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8 of leadership for employee health are in the ‘eyes of the beholder’ (Gooty et al., 2009),
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10 requiring leaders to consider employees’ personality in the way they lead.
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15 Last, we focus on health, comprised of both mental (psychological) and physical
16 health, as an outcome of AL. In doing so, we consider physical health, a largely understudied
17 dimension of health (Inceoglu et al., 2018) which, like psychological health, is influenced by
18 authenticity (Knoll, Meyer, Kroemer, & Schröder-Abé, 2015) and emotional regulation
19 (Appleton, Buka, Loucks, Gilman, & Kubzansky, 2013). Accordingly, we advance AL theory
20 through testing whether AL constitutes indeed a pathway to positive health (Macik-Frey et
21 al., 2009) through shaping employees’ PCA.
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32 **Theory and hypotheses**

33 *COR*

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38 COR is a resource-based theory that proposes that humans are motivated to acquire and
39 protect resources because resource loss or threatened resource loss results in health issues
40 (Hobfoll, 2002; Hobfoll & Freedy, 1993). Initially, resources were defined as encompassing
41 objects, conditions, personal characteristics and energies (Hobfoll, 2002). More recently, the
42 definition has been broadened such that anything that is perceived by individuals as helping
43 them attain their goals constitutes a resource (Halbesleben et al., 2014). As such, the work
44 environment offers various resources (Hobfoll et al., 2018), while their value for individuals
45 and ultimately the extent to which they constitute resources varies between individuals
46 (Halbesleben et al., 2014). A further principle of COR relevant for this study is that
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48 individuals who possess resources are in a better position to acquire additional resources
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3 through investing resources, which results in positive gain spirals. Using COR as an
4
5 overarching framework, we propose that AL positively affects employees' health through
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7 enabling the formation of PCA among the employees they supervise; a resource that
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9 contributes to employees' health through reducing employees' need to regulate their
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11 emotions.
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14 15 *AL and PCA* 16

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18 Throughout its theoretical development, several definitions of AL have been put forward (see
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20 Gardner *et al.*, 2011), the most widely-adopted defining it as “a pattern of leader behaviour
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22 that draws upon and promotes both positive psychological capacities and a positive ethical
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24 climate, to foster greater self-awareness, an internalized moral perspective, balanced
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26 processing of information, and relational transparency on the part of leaders working with
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28 followers, fostering positive self-development” (Walumbwa *et al.*, 2008; p. 94). While
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30 research has accumulated an impressive evidence base regarding the positive individual and
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32 organizational outcomes of AL (e.g., Banks, McCauley, Gardner, & Guler, 2016; Hoch,
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34 Bommer, Dulebohn, & Wu, 2018), recent calls have been made for research to devise
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36 hypothesized models around the core essence of the respective leadership construct to
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38 meaningfully contribute to theory (Hoch *et al.*, 2018; Lemoine *et al.*, 2019).
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44 AL is grounded in theories of authenticity (Avolio & Gardner, 2005; Ilies *et al.*, 2005;
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46 Kernis & Goldman, 2006), the alignment between individuals' internal sense of self and their
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48 outward-facing behaviours (Cha *et al.*, 2019). Given that authenticity has long been regarded
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50 as critical for good health (Erickson, 1995) and lies at the heart of AL (Lemoine *et al.*, 2019),
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52 we regard authenticity, specifically PCA, as the key mechanism through which AL affects
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54 employees' health.
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3 According to COR, good leadership can be considered a valuable resource for
4 employees that also contributes to their resource repertoire through sending social cues that
5 influence their ability to acquire further resources (Hobfoll, 2002; Inceoglu et al., 2018). The
6 notion of leaders shaping employees' beliefs about their work environment is supported by
7 SIP (Salancik & Pfeffer, 1978), according to which individuals' perceptions, attitudes and
8 behaviours are influenced by cues from their social context (Zalesny & Ford, 1990). Due to
9 their position power, leaders hold a central role in this influencing process and signal, through
10 their behavior and overt statements, what constitutes acceptable and desirable behavior
11 (Hogg, Rast, & van Knippenberg, 2012).

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25 Integrating COR with SIP, we posit that authentic leaders shape employees' beliefs
26 about their work environment, enabling the formation of a PCA among the employees they
27 supervise. Central to AL is the expression of authentic feelings, thoughts and emotions
28 (Lehman *et al.*, 2019; Lemoine *et al.*, 2019). Authentic leaders' behaviour and their
29 transparent display of genuine felt emotions (Gardner *et al.*, 2009) should thus signal to
30 employees that such authentic expression is the norm (Cha et al., 2019). In doing so, they set
31 the tone for followers' genuine emotional expression during their daily interpersonal
32 interactions not only with their leader, but also with their work group (Avolio & Gardner,
33 2005; Gardner, Avolio, Luthans, May, & Walumbwa, 2005). As a result, employees should
34 perceive their group members as accepting of the expression of emotions and feelings,
35 including negative ones (Grandey et al., 2013), as reflected by PCA (Grandey et al., 2013).
36 Given that the value of resources is subjective and varies between individuals (Halbesleben et
37 al., 2014), we conceptualize PCA as a psychological climate reflecting employees' perception
38 of their work group (Kuenzi & Schminke, 2009). We therefore hypothesize:

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57 *H1.* AL is positively related to PCA.
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PCA and employee health

Research has moved away from the dualism that considers the mind and body as distinct entities, acknowledging that psychological and physical health are intrinsically linked (Song et al., 2015). Emotions and emotional regulation have been discussed as a common thread that connects both (Adler & Matthews, 1994). Research offers evidence that supports this claim insofar that authenticity and displaying authentic emotions is beneficial for both psychological and physical health, while suppressing felt emotions is harmful (Appleton et al., 2013; Cloitre et al., 2019; Grandey, 2003; Ménard & Brunet, 2011). Consequently, we regard PCA as positively related to employees' health.

This proposition is in line with COR (Hobfoll, 2002). Specifically, expressing felt emotions, such as sadness, frustration and joy, enables employees to conserve and replenish the attentional and energy resources they would normally invest into monitoring and regulating said emotions (Baumeister et al., 1998; Baumeister, Vohs, & Tice, 2007; Muraven, Shmueli, & Burkley, 2006) and thus represents a self-regulatory break (Grandey et al., 2013). Additionally, employees who feel able to exhibit their true emotions and whose outward expression is thus aligned with their true self should also benefit from establishing meaningful connections with their coworkers, giving them access to the resources the group offers (Emmerich, Knoll, & Rigotti, 2020). For example, employees who share their struggles concerning a specific work task with their coworkers should receive help from them, constituting additional resources that protect their health (Hobfoll, 2002). We thus hypothesize:

H2. PCA is positively related to employee health.

The mediating role of PCA

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3 Combining the previous hypotheses, we propose that through expressing authentic emotions,
4 authentic leaders set the contextual standard for the expression of genuine emotions in the
5 group of employees they supervise (Cha et al., 2019; Salancik & Pfeffer, 1978), influencing
6 emotional display rules in a top-down fashion (Grandey et al., 2013). Employees who
7 perceive their workgroup as enabling them to express their true emotions (PCA) need to
8 invest less attentional and energy resources into regulating their emotions (Baumeister et al.,
9 1998), while also benefitting from social resources from their work group brought about by
10 sharing their true needs and concerns (Emmerich et al., 2020). Such employees should thus
11 benefit from an increased pool of resources that positively contributes to their health
12 (Baumeister et al., 1998; Hobfoll, 2002). We thus hypothesize:

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27 *H3. PCA mediates the relationship between AL and employee health.*

30 **Study 1**

31 **Method**

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33 A total of 104 employees from two German companies (72.1% female, $M_{\text{age}} = 42.63$, $SD =$
34 9.62 , $M_{\text{tenure}} = 10.62$, $SD = 8.32$) completed online (pharmaceutical company; $n = 72$) or
35 paper surveys (geriatric care company; $n = 32$) at two time points (Time 1 and Time 2), four
36 weeks apart. The response rate was 74%. All participants worked in teams ($M_{\text{team-tenure}} = 6.6$,
37 $SD = 6.3$).

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39 The surveys were administered in German. Official translations were used where
40 available. We translated the items for PCA using standard procedures of back-translation
41 (Brislin, 1980). Apart from health, all items were scored on a 5-point Likert scale (1 =
42 strongly disagree to 5 = strongly agree).

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AL ($\alpha = .94$) was measured at Time 1 with the official German translation
(Mindgarden, Inc.) of Walumbwa *et al.*'s (2008) 16-item scale (e.g., "My leader is eager to
receive feedback to improve interactions with others"). Previous research has concluded that

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3 regarding AL as a higher-order factor encompassing the four AL dimensions of self-
4 awareness, relational transparency, balanced processing, and internalized moral/ethical
5 perspective is justified (Avolio, Wernsing, & Gardner, 2018). CFAs also supported the use of
6 a composite score over a dimensional approach.¹ In line with our conceptualization of PCA
7 along COR as a resource whose value is subjective (Halbesleben et al., 2014) and research
8 that assesses perceived team/organizational climate at the individual level (e.g., Baker, 2016;
9 Zhou, Liu, Chen, & Zhao, 2018), we measured employees' perceptions of climate of
10 authenticity at Time 1 ($\alpha = .82$) with Grandey *et al.*'s (2013) 7-item measure (e.g., "Working
11 with members of this team, expressions of feelings are respected"). We measured *health* over
12 the past four weeks at Time 2 using the German version of the SF-12-item Health Survey
13 (Ware, Kosinski, & Keller, 1996), a measure extensively used in research, particularly in
14 medical sciences (Brazier & Roberts, 2004). The scale covers physical (e.g., "Have you
15 accomplished less than you would like as a result of your physical health?") and mental
16 health (e.g., "Have you felt peaceful and calm?"). We used the official scoring software²
17 (Health Outcomes Scoring Software 4.0 by QualityMetric) to compute an overall health
18 score; a high score reflects good health. In line with past research (Frone *et al.*, 1996; Little *et*
19 *al.*, 2007; Brown *et al.*, 2016), we controlled for *positive* (e.g., "inspired", $\alpha = .86$) and
20 *negative affect* (e.g., "upset", $\alpha = .75$) over the past four weeks, which we measured at Time 2
21 with the shortened 10-item PANAS scale (Thompson, 2007); participant age, gender (1 =

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¹ The CFA for the second-order model for AL fit the data equally well ($\chi^2(98) = 267.44$, $p < .01$, CFI = .88, TLI = .85, RMSEA = .11, SRMR = .07) as the 4-factor model ($\chi^2(100) = 170.53$, $p < .01$, CFI = .88, TLI = .85, RMSEA = .11, SRMR = .07). To compare the two models, we used the Bayesian information criterion (BIC) where a better fit is indicated by a smaller BIC (Schreiber, Stage, King, Nora, & Barlow, 2006). The BIC of 5484.64 of the second-order model supports its use over the four-factor model (BIC = 5491.64).

² Response options for the SF-12 differ per item and include, for example, (1) 'yes, limited a lot' to (3) 'no, not limited at all'. Under Optuminsight Life Sciences's (Qualitymetric) terms, any changes, including formatting changes, are required to be stated. Accordingly, we independently introduced a minor change to the response format of item number 12 (During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities?) from a 6-point to a 5-point scale, in line with other response items in the SF-12. Given this slightly deviates from the original survey, it is possible that validity and reliability indices are affected. However, this deviation did not undermine the psychometric properties of our measure ($\alpha = .70$ for Study 1; $\alpha = .76$ for Study 2).

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3 *male, 2 = female*) and company (1 = *pharmaceutical company*; 2 = *geriatric care company*)
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5 given that employees in the geriatric care company worked part-time and employees in the
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7 pharmaceutical company full-time. CFAs showed that the hypothesized 3-factor model
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9 ($\chi^2(554) = 649.55, p < .01, CFI = .92, TLI = .92, RMSEA = .03, SRMR = .09$) fit the data
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11 better than a 2-factor ($\chi^2(560) = 881.92, p < .01, CFI = .73, TLI = .72, RMSEA = .06, SRMR$
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13 = .13) or 1-factor solution ($\chi^2(560) = 1384.45, p < .01, CFI = .33, TLI = .28, RMSEA = .1,$
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15 SRMR = .21).
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19 Results

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21 Table I displays descriptives and correlations and Table II the findings. We used the
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23 Process macro for SPSS (Hayes, 2017) to test the hypotheses and 10,000 bootstrapping
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25 samples with 95% confidence intervals (CI) to test the indirect effects.
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31 Insert Table I about here
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35 The results showed that AL was significantly and positively related to PCA ($B = .23, SE$
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37 = .06, $p < .01$), as was PCA to health ($B = 2.94, SE = .86, p < .01$). AL had an indirect
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39 positive effect on health through PCA (*indirect effect* = .64, $SE = .34$; 95% CI [.08; 1.41]),
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41 providing support for *H1-H3*.
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52 Study 2

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54 This study aimed to provide a constructive replication of the findings of Study 1 (Hüffmeier
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56 *et al.*, 2016) by extending the model to test the moderating role of neuroticism.
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3 A tenet of COR that has recently been emphasized is that the value of resources is
4 subjective and their effect thus depends on their interplay with individual differences
5 (Halbesleben et al., 2014). Neuroticism, individuals' tendency to experience negative
6 emotions, such as anxiety and self-doubt (Costa & McCrae, 1992), seems particularly
7 relevant in this regard as it is a strong negative predictor of health (Charles et al., 2008; Costa
8 & McCrae, 1980). Negative emotions are rarely desirable within organizations (Schaubroeck
9 & Jones, 2000), and employees high in neuroticism often engage in resource-draining
10 emotional regulation, particularly in the form of suppressing felt emotions (Diefendorff,
11 Croyle, & Gosserand, 2005), which is particularly detrimental for health, both physically and
12 psychologically (Appleton et al., 2013; Baumeister et al., 2007). Individuals high in
13 neuroticism should thus benefit more from PCA as a resource than emotionally stable
14 employees because being able to express authentic emotions represents more of a valued self-
15 regulatory break for them (Grandey et al., 2013), affecting their health to a greater extent. We
16 therefore hypothesize:

35 *H4.* Employee neuroticism moderates the positive effect of PCA on employee health,
36 such that the effect is stronger when neuroticism is high rather than low.
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40 Integrating *H1-H4* that relied on COR (Hobfoll, 2002) and SIP (Salancik & Pfeffer,
41 1978), we argue that the positive effect of AL on employee health via PCA is dependent on
42 employees' neuroticism. Specifically, we propose that authentic leaders' signals to express
43 true and genuine emotions result in employees' perception of PCA, which should positively
44 affect the health of employees high as opposed to low in neuroticism. This is because we
45 contend that PCA constitutes a more valuable resource for these employees (Halbesleben et
46 al., 2014) as it reduces their need to regulate their surplus of negative emotions in
47 interpersonal interactions (Schimmack et al., 2002), which is predictive of health (Appleton
48 et al., 2013; Baumeister et al., 2007). We therefore hypothesize:
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H5. The indirect effect of AL on employee health through PCA is moderated by employee neuroticism in the second stage such that the positive relationship between PCA and employee health will be stronger when neuroticism is high rather than low.

Study 2

Method

A total of 146 working adults (62.3% male, $M_{\text{age}} = 30.34$, $SD = 8.00$, $M_{\text{tenure}} = 5.00$, $SD = 4.80$), recruited via the German crowdsourcing website workhub.de (now www.crowdworker.com), completed an online survey at two time points (Time 1 and 2), four weeks apart. The response rate was 63.2% and participants were reimbursed €2 (\$2.25) per survey. All participants included in the sample had passed Instructional Manipulation Checks (Oppenheimer *et al.*, 2009), worked full-time in a group-based work setting and were fluent in German. They worked in a variety of jobs, such as clerical, military officer and paralegal.

The same measures and controls as in Study 1 were used in Study 2 at Time 1 (*AL* ($\alpha = .95^3$), *PCA* ($\alpha = .77$), positive ($\alpha = .86$), and negative affect ($\alpha = .81$), gender, age) and Time 2 (*health*). *Neuroticism* ($\alpha = .70$) was measured at Time 1 with three items taken from Judge *et al.*'s (2003) core self-evaluations scale (e.g., "Sometimes I feel depressed"; 1 = strongly disagree to 5 = strongly agree). CFAs showed that the proposed 4-factor model⁴ ($\chi^2(659) = 1361.25$, $p < .01$, CFI = .88, TLI = .87, RMSEA = .08, SRMR = .08) fit the data better than a 3-factor ($\chi^2(662) = 1945.75$, $p < .01$, CFI = .77, TLI = .75, RMSEA = .11,

³ The CFA for the second-order model for AL showed a superior fit ($\chi^2(98) = 180.47$, $p < .01$, CFI = .95, TLI = .93, RMSEA = .07, SRMR = .04, BIC = 6130.781) than the 4-factor model ($\chi^2(100) = 183.100$, $p < .01$, CFI = .95, TLI = .93, RMSEA = .07, SRMR = .04, BIC = 6138.118) when the BIC was considered (Schreiber *et al.*, 2006).

⁴ Although some of our fit indices (CFI, TLI) are slightly below the recommended cut-off scores, this is likely due to our small sample size ($n < 250$; Hu & Bentler, 1999; Marsh *et al.*, 2004). In line with the recommendation of Marsh *et al.*, (2004), we thus assessed the adequacy of our model in comparison to alternative models.

SRMR = .1) and 1-factor model ($\chi^2(665) = 3276.92, p < .01, CFI = .53, TLI = .51, RMSEA = .16, SRMR = .14$).

Results

Table I displays descriptives and correlations and Table II the findings. We followed the same analytical procedures as in Study 1. *H4* and *H5* were tested using the Process macro for SPSS for Model 4 and 14 (Hayes, 2017). Simple slope tests were used to probe for the direction of the interaction (Dawson, 2014) and the moderated mediation effects were tested using 10,000 bootstrapping samples with 95% CI.

Consistent with Study 1, AL was significantly and positively related to PCA ($B = .16, SE = .05, p < .01$), as was PCA to health ($B = 1.79, SE = .68, p < .01$). Again, AL had an indirect positive effect on health through PCA (*indirect effect* = .28, $SE = .17$; 95% CI [.01; .69]), supporting *H1-H3*. The interaction between PCA and neuroticism on health was significant (Figure 1; $B = 2.07, SE = .75, p < .01$). Simple slope tests showed that this effect was not significant for low (-1SD; $b = -.02, SE = .89, p = .98$), but positive and significant for high levels of neuroticism (+1SD; $b = 3.43, SE = .93, p < .01$), supporting *H4*.

Insert Figure 1 about here

The index of moderated mediation was significant (index: .36, 95% CI [.06; .80]). The results showed non-significant effects under -1SD of neuroticism (conditional indirect effect: -.05, 95% CI [-.36; .21]), but significant moderated mediation under +1SD (conditional indirect effect: .55, 95% CI [.11; 1.21]), supporting *H5*.

General discussion

This research aimed to explore how and for whom AL is positively related to health. The findings of both studies showed that PCA transmitted the positive influence of AL onto

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3 employee health, while Study 2 additionally showed that this indirect effect was moderated
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5 by employees' neuroticism (second-stage mediated moderation).
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8 *Theoretical implications* 9

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11 We believe that our research contributes to the existing AL and wider leadership literatures in
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13 three ways. First, while prior research has explored the ins and outs of the effect of AL on
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15 health and well-being to some extent (Braun & Peus, 2018; Rahimnia & Sharifirad, 2015),
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17 the studied underlying processes (i.e. work-life balance and attachment insecurity) do not
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19 reflect what lies at the core of AL and do thus not test AL theory. This point reflects criticism
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21 the leadership field has recently faced regarding conceptual overlap of positive leadership
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23 constructs and lack of conceptual differentiation (Hoch et al., 2018; Lemoine et al., 2019),
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25 and the use of theories primarily devised for job performance to explain effects on health
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27 (Inceoglu et al., 2018). We address these limitations through using COR (Halbesleben et al.,
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29 2014; Hobfoll, 2002) as a framework, which we supplement with SIP (Salancik & Pfeffer,
30
31 1978) to identify PCA (Grandey et al., 2013), employees' perception that their work group
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33 values the expression of authentic emotions, as a mediator of the relationship between AL
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35 and employee health. In doing so, we highlight that authenticity, driven by leaders' ability to
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37 shape norms linked to authentic emotional display, constitutes a core pathway that explains
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39 the health-promoting effect of AL.
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47 Second, we explored employees' neuroticism, their tendency to experience negative
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49 emotions (Costa & McCrae, 1992), as a boundary condition that shapes the effect of AL on
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51 employees' health via PCA. While prior research has shown that the effects of AL on
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53 performance are dependent on followers' individual differences (i.e. psychological capital;
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55 Wang, Sui, Luthans, Wang, & Wu, 2014), it is not known whether this is also true for the
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57 effect of AL on employee health. Leveraging COR (Halbesleben et al., 2014; Hobfoll, 2002),
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3 we show that PCA, a resource enabled by AL, is particularly beneficial for employees high in
4 neuroticism, with those low in neuroticism not exhibiting increased health. These findings
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6 reflect leadership as a relational process (Uhl-Bien, 2006) that involves both leaders and
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8 followers as active participants. As such, we contribute to the AL and wider leadership
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10 literatures through highlighting that leaders' effect on employees' health is contingent on
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12 followers' characteristics (Gooty et al., 2009), specifically their neuroticism, and thus varies
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14 between employees depending on the purpose it serves.
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20 Finally, through focusing on health as comprised of both mental (psychological) and
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22 physical health, we contribute to the AL literature, which has, mirroring the wider leadership
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24 literature, narrowly operationalized health through hedonic, psychological health (e.g., job
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26 satisfaction and burnout; Inceoglu et al., 2018). This is problematic insofar that it is widely
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28 acknowledged that psychological and physical health are intrinsically linked (Song et al.,
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30 2015) and both facets need to be captured to provide a full picture. We thus contribute to AL
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32 theory through showing that AL does represent a pathway to overall, positive health (Macik-
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34 Frey et al., 2009) and not a tradeoff between either psychological or physical health as is the
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36 case for other managerial practices (Grant et al., 2007).
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41 *Limitations and future research directions*

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43 Our contributions need to be interpreted in light of the following limitations. First, we
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45 collected data solely from employees as their perceptions, as opposed to others' perceptions,
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47 should determine whether AL and PCA constitute resources that can affect well-being
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49 (Halbesleben et al., 2014); potentially a reason why the majority of research on leadership
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51 and well-being relies on employees' perspective (Inceoglu et al., 2018). However, our
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53 research thus bears the risk of common method bias (Podsakoff, MacKenzie, Lee, &
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55 Podsakoff, 2003). While we tried to minimize this risk through replicating our findings across
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57 two studies, temporarily separating predictor and outcome variables and conducting
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3 Harman's single factor tests (CFAs), we cannot fully exclude the effect of common method
4 bias on our findings. Additionally, because we did not employ a cross-lagged design to test
5 for mediation, we cannot exclude reverse causality.
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10 Second, data for both studies was collected in Germany and, in Study 2, via
11 crowdsourcing; two factors that might affect the generalizability of our findings. While
12 previous research has shown that the effect of AL transcends national cultures (Gardner et al.,
13 2011), emotion regulation and the extent to which authentic emotional expression are valued
14 and can thus affect health have been discussed as depending on national culture, specifically
15 the cultural dimension of independence (Ford & Mauss, 2015). Additionally, crowdsourcing
16 samples have been shown to differ from the general population, specifically regarding their
17 average age and level of education (Paoslacci, Chandler, & Ipeirotis, 2010). However,
18 crowdsourced testing is beneficial because it can help to reveal the true consistency of
19 empirical support for a model (Landy et al., 2020) and therefore represents an adequate
20 replication and extension of Study 1.
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35 Third, in line with COR and the notion that the value and thus usefulness of resources
36 for health varies between individuals (Halbesleben et al., 2014), we regarded PCA as a
37 psychological climate that reflects employees' perception of their work environment (Kuenzi
38 & Schminke, 2009). While this approach is not uncommon (e.g., Baker, 2016; Zhou, Liu,
39 Chen, & Zhao, 2018), climate of authenticity has been conceptualized as a group-level
40 construct (Grandey et al., 2013) and our research can, as such, not providing insights
41 regarding groups' shared climate of authenticity.
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51 Given these limitations, we encourage future research to replicate our findings.
52 Specifically, to further reduce common method and common source bias, future studies might
53 want to adopt cross-lagged designs, nested multilevel designs and consider alternative
54 measures for physical health, such as wearable technology (Inceoglu et al., 2018).
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3 Conducting such research in a considerably different cultural context to our study (e.g.,
4 interdependent context, such as East Asia; Ford & Mauss, 2015) seems also a worthwhile
5 endeavor. We believe that future research has the potential to expand our understanding of
6 the relationship between leadership and health further if, as exemplified in our study, health
7 and well-being specific theories are leveraged (Inceoglu et al., 2018). Specifically, self-
8 determination theory (Deci et al., 2001) or the work-home resource model (ten Brummelhuis
9 & Bakker, 2012) might offer insights into the resources leaders provide employees with and
10 into employee characteristics that determine the value of these resources for their health
11 (Halbesleben et al., 2014). Research along these lines might, for example, explore how leader
12 behaviors specific to AL, such as sharing genuine emotions, affect employees' health through
13 satisfying employees' needs, which are determined by their individual differences, such as
14 their need for relatedness. Furthermore, the development of our hypothesized model was
15 guided by an effort to capture what lies at the core of AL (Lemoine et al., 2019), which we
16 regarded to be authenticity and the expression of genuine emotions (Gardner et al., 2005),
17 leading us to explore PCA as an emotional pathway. We recommend that, in order to
18 contribute to AL theory, future research on AL and health also adopts such an approach and
19 explores, for example, the behavioral pathways of role modeling or behavioral integrity. Last,
20 while we focused on PCA as a psychological climate (Kuenzi & Schminke, 2009), we have
21 reason to assume that climate of authenticity represents an important contextual, team-level
22 resource that shapes employees' health and well-being (Grandey et al., 2013). We thus
23 encourage future research to employ a multilevel design to test this proposition.

24 *Practical implications*

25 Our findings have several implications for practice. First, AL represents a useful tool
26 organizations can leverage to maintain a healthy workforce. Importantly, given the positive
27 indirect effect of AL on health comprised of both mental (psychological) and physical health,
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3 it does not represent a trade-off between different forms of health either, as is the case for
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5 other managerial practices, such as work redesign (Grant et al., 2007). Organizations can reap
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7 these benefits of AL through selecting/recruiting authentic leaders for key positions, using
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9 AL assessments (Neider & Schriesheim, 2011; Walumbwa et al., 2008), or through
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11 developing authentic leaders through AL training (Baron, 2016), which is particularly
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13 relevant when employees' work is highly demanding and staff suffer from poor health.
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18 Second, line managers should encourage work groups to express and be accepting of
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20 the expression of authentic emotions, facilitating a PCA through encouraging authentic
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22 emotional display norms. This seems particularly relevant in contexts where employees'
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24 work involves frequent, emotionally draining interpersonal interactions and where employees
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26 are subjected to negative emotions that require emotional labor, such as in customer-facing or
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28 caring roles (Grandey et al., 2013). Additionally, team-building interventions may contribute
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30 to team members forming meaningful relationships that provide them with the space to be
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32 their true selves without facing repercussions and enable them to share their true emotions
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34 regularly, for example, during shared work breaks. On an organizational level, sharing and
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36 valuing others' emotions can be supported through, for example, Schwartz Rounds, a
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38 relatively low-cost intervention mainly used in healthcare organizations (*Schwartz Rounds*,
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40 2020).
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47 Last, given that AL and PCA seem to be particularly beneficial for the health of
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49 neurotic employees, facilitating PCA in work groups with neurotic members through the
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51 discussed means is specifically important. This is of relevance if organizations and line
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53 managers aim to facilitate inclusive workplaces that accommodate individuals with mental
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55 health issues, such as depression, which individuals high in neuroticism are more susceptible
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57 to (Hirschfeld, Cole, Bernerth, & Rizzuto, 2013). Fostering PCA through AL would ensure
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59 that employees have a fundamental support system in place that they can reach out to.
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Variable	Study 1		Study 2		1	2	3	4	5	6	7	8	9
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>									
1. Company ^a	1.28	.45	--	--	--	--	--	--	--	--	--	--	--
2. Gender ^b	1.72	.45	1.38	.48	.41**	--	.02	.03	.01	.03	.12	-.09	.14
3. Age	42.85	9.46	30.34	8	.26**	.12	--	.03	-.17*	.04	-.08	.12	-.01
4. Positive affect	3.35	.73	3.35	.75	.14	.07	-.07	--	-.46**	.34**	.35**	.61**	-.3**
5. Negative affect	1.73	.66	1.79	.73	-.09	.01	.07	-.33**	--	-.21*	-.12	-.49*	.36**
6. AL	3.75	.75	3.44	.9	.32**	.04	.13	.1	-.02	--	.35**	.3**	-.16
7. Perceived climate of authenticity	3.77	.63	3.86	.56	.27**	-.08	-.12	.14	-.08	.42**	--	.34**	-.19*
8. Health	49.85	5.91	48.94	5.74	-.21*	-.25**	-.11	.45**	-.43**	.13	.27**	--	.37**
9. Neuroticism	--	--	3.54	.78	--	--	--	--	--	--	--	--	--

Table I. Means, standard deviations, and bivariate correlations for Study 1 & Study 2

Notes. Values below the diagonal are for Study 1 ($n = 104$); values above the diagonal are for Study 2 ($n = 146$). * $p < 0.05$; ** $p < 0.01$. ^a 1 = pharmaceutical company; 2 = geriatric care company. ^b 1 = male; 2 = female

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Variables	Perceived climate of authenticity			Health		
	<i>B</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>p</i>
1. Company ^a	.29	.12	.02	-4.28	1.15	.00
2. Gender ^b	-.23 (.12)	.11 (.08)	.04 (.15)	-1.6 (-1.49)	1.07 (.72)	.14 (.04)
3. Age	-.01 (-.01)	.01 (.01)	.32 (.19)	.02 (.04)	.04 (.04)	.64 (.29)
4. Positive affect	.05 (.21)	.07 (.06)	.43 (.00)	2.91 (3.17)	.66 (.56)	.00 (.00)
5. Negative affect	-.02 (.04)	.07 (.06)	.83 (.59)	-2.8 (-1.69)	.68 (.56)	.00 (.00)
6. AL	.25 (.16)	.07 (.05)	.00 (.00)	.74 (.43)	.65 (.42)	.25 (.31)
7. Perceived climate of authenticity				2.56 (9.12)	.92 (2.74)	.00 (.00)
8. Neuroticism (Study 2)				(-9.08)	(2.9)	(.00)
9. Perceived climate of authenticity X neuroticism (Study 2)				(2.17)	(.76)	(.00)

	Effect	Boot <i>SE</i>	CI
Health			
Indirect effect of perceived climate of authenticity	.64 (.28)	.34 (.17)	[.08;1.41] ([.01;.69])
Indirect effect of perceived climate of authenticity X +1 SD neuroticism (Study 2)	(-.05)	(.14)	([-.36,.21])
Indirect effect of perceived climate of authenticity X -1 SD neuroticism (Study 2)	(.55)	(.29)	([.11,1.21])

Table II. Unstandardized Regression Coefficients with Confidence Intervals Estimating Mediation and Moderated Mediation (Study 2) for Health

Note. Values in brackets refer to results of Study 2. *n* (Study 1) = 104; *n* (Study 2) = 146) ^a 1 = pharmaceutical company; 2 = geriatric care company. ^b 1 = male; 2 = female. Findings obtained via bootstrapping with 10,000 repetitions, 95% CI. CIs that do not include zero show significant mediation and moderated mediation.