Dyadic support exchange and work engagement: An episodic test and expansion of self-determination theory

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According to the self-determination theory (SDT), individuals flourish when they satisfy their psychological needs. We expand this proposition by testing whether employees satisfy their own needs and improve their own work engagement by providing support to their co-workers. Moreover, we argue that it matters when and to whom the support is provided. We contend that the indirect effect of autonomously motivated support provision on the provider's work engagement through the provider's need satisfaction is stronger (1) during episodes that the receiver's emotional demands are high (vs. low), (2) when the receiver's learning goal orientation is high (vs. low), or (3) when the receiver's prove performance goal orientation is low (vs. high). We collected data among 97 dyads of police officers (N = 194 participants) during two time blocks on one working day (N = 227–491 episodes). Multi-level analyses confirmed that support provision related positively to the provider's episodic work engagement through episodic need satisfaction. As hypothesized, this indirect relationship was stronger during emotionally demanding episodes, or when the receiver was characterized by a low prove performance goal orientation. Learning goal orientation did not moderate the support provision–work engagement relationship. These findings expand SDT by indicating that individuals satisfy their own daily needs by providing support, and by showing that it matters when and to whom support is provided.

Practitioner points
- Providing help benefits both the beneficiary and the helper
- Managers should encourage the daily exchange of social resources between employees
- The exchange of social support between co-workers is crucial when employees face demanding clients

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Within the social support literature, the majority of studies focuses on the usefulness of receiving support (Lakey & Cohen, 2000). Few scholars have theorized and tested the consequences of support provision at work for the provider rather than the receiver (for a notable exception, see Uy, Lin & Ilies, 2017). However, by definition, social support involves two parties that influence each other simultaneously (Shumaker & Brownell, 1984). To gain a better understanding of work-related supportive exchange as a dyadic phenomenon, it is important to acknowledge and investigate the two-sidedness of support. How does support provision affect the support provider? What is the role of the receiver in the process of give and take?

In addition to the classic support literature, recent studies suggest that the mere act of support provision can also benefit the support provider (Martela & Ryan, 2016). Going one step further, Weinstein and Ryan (2010) used self-determination theory (SDT; Ryan & Deci, 2000) to address the effects of support for the provider. Specifically, by using experimental methodology and student samples, their findings show that providing support with an autonomous motivation enhances the subjective well-being of the provider by satisfying the psychological basic needs. However, it remains unknown whether their conclusions can be generalized to the workplace. Laboratory research and student samples may limit the ecological validity of research findings and are not always appropriate to inform organizational practice.

The present study addresses the link between support provision and the provider's need satisfaction and work engagement among employees. Work engagement is an important indicator of employee well-being (Bakker & Oerlemans, 2011). Research reveals that employee work engagement is valuable as it is predictive of several facets of job performance and fluctuates throughout a day, influencing momentary job performance (Bakker, 2014). In order to investigate whether the beneficial effects of autonomously motivated support apply to employee's daily need satisfaction and work engagement, we examine the supportive exchanges between police officers as this is an occupation where working in dyads and supporting each other is an essential part of the job (Charman, 2013).

Most importantly, Deci and Ryan (2008) theorized that the extent to which needs are satisfied, in fact, depends on contextual factors. In line with this reasoning, studies show that contact with the recipient and the behaviour of the recipient influence whether the benefits of support for the provider are enhanced or diminished. For instance, research shows that people who try to help someone and see that their help has a positive impact tend to experience more benefits from the helping act than helpers who see no positive impact (Aknin, Dunn, Whillans, Grant & Norton, 2013). According to the authors, this is because helping someone who visibly benefits from the support fulfils the provider's need to feel competent.

In order to detect boundary conditions within the recipient's context that influence the support provider, we complement the SDT (Ryan & Deci, 2000; a macrotheory which we use as overall theoretical framework) with additional theoretical frameworks. To address our first boundary condition, we draw from the job demands–resources (JD-R) model (Bakker & Demerouti, 2017) that helps us to address when support is most needed by employees. To address our second boundary condition, we use the goal orientation theory (VandeWalle, 1997) which highlights how employees try to achieve goals and, thus, tend to perceive support from others.

Our first boundary condition is particularly relevant for police work. Specifically, police officers have to deal with fluctuating and, at times, high emotional demands during their daily work life because their primary task is to deal with demanding civilians and

traumatic situations. These emotionally demanding situations are interchanged with less demanding situations, such as breaks, quiet moments, and dealing with minor incidents (Van Gelderen, Heuven, Van Veldhoven, Zeelenberg & Croon, 2007). The emotional demands experienced during interpersonal contacts and conflicts are likely to create strain, not only for police officers (Kop & Euwema, 2001) but in many service oriented jobs (Totterdell & Holman, 2003). Based on the JD-R theory, previous studies have shown that when confronted with emotionally demanding situations, employees particularly benefit from receiving support from their co-workers (i.e., as compared to support from supervisors or family; Peeters & Le Blanc, 2001). This finding is in line with the match hypothesis (Cohen & Wills, 1985), which states that receiving support is most effective for the receiver when the support matches the coping requirements. Applied to this study, receiving support from co-workers is likely to be most effective during emotionally demanding situations when there are many social stressors (e.g., with civilians and offenders). Combining the knowledge derived from the JD-R literature with the SDT, we expect it to be most satisfying and engaging to support another police officer during emotionally demanding situations.

Regarding our second boundary condition, we argue that employees' goal orientation styles (i.e., their attitudes towards learning and feedback) unavoidably influence the ways in which they react to the received support (Anderman & Maehr, 1994; VandeWalle, 1997). Whereas learning goal-oriented employees cope effectively with both negative and positive feedback, and use the received information in order to achieve their goals (Hirst, Van Knippenberg & Zhou, 2009), performance goal-oriented employees tend to focus on proving their abilities to others (Dweck & Leggett, 1988). Presently, we expect that providing support will be more satisfying and engaging for the provider when the receiver is characterized by high learning or a low-performance goal orientation.

Taken together, this study contributes to the literature in three notable ways (see the research model in Figure 1). First, we refine previous work by showing that autonomously motivated support enhances the provider's need satisfaction and work engagement. That is, we include a broader interpretation of SDT (Ryan & Deci, 2000) and address support provision as a self-determination strategy (Bakker & Van Woerkom, 2017) with the potential to benefit the support provider. Second, we contribute to the literature by testing two boundary conditions within the context of the support receiver of the benefits that support provision may have for the provider's needs and engagement. Third, we contribute to uncovering the dynamics of support provision by addressing how relatively stable factors (i.e., goal orientation of the receiver) interact with fluctuating states in predicting episodic outcomes (i.e., fluctuating need satisfaction and work engagement of the provider).

What drives the support provider?

In order to investigate the effects of support on the provider's needs and work engagement in more detail, we use SDT (Ryan & Deci, 2000). SDT postulates that behaviours vary with respect to how self-motivated they are. Generally, two broad forms of motivation exist which can be seen as reflecting two ends on a continuum of self- and external motivation (Ryan & Deci, 2000). On the one end lies intrinsic motivation, which refers to performing an activity for its own sake. On the other end lies extrinsic motivation, which refers to performing an activity for instrumental reasons. In addition, one may distinguish between avoiding feelings of guilt (introjection), striving for a valued goal (identification), or expressing the sense of self (integration). Together with intrinsic
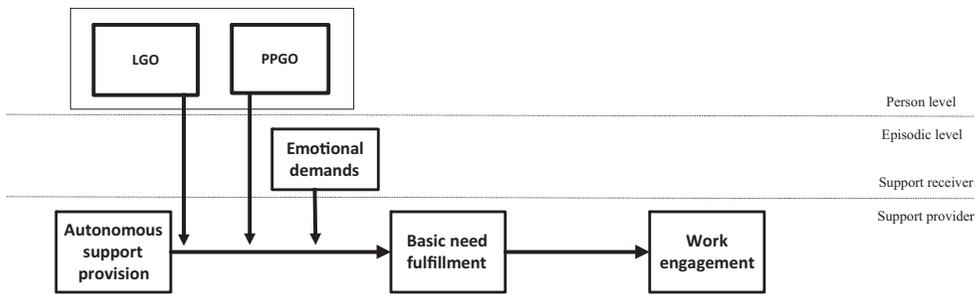
Figure 1. Theoretical research model; LGO = Learning Goal Orientation, PPGO = Prove Performance Goal Orientation.

motivation, identification and integration entail high levels of autonomy and are considered forms of autonomous regulation. Moreover, SDT distinguishes between basic psychological needs, namely the need for autonomy (i.e., experiencing a sense of volition), the need for competence (i.e., feeling effective), and the need for relatedness (i.e., feeling closeness and friendship with others; Ryan & Deci, 2000). These three needs are universal and need to be fulfilled in order for employees to flourish and experience work engagement (Vansteenkiste *et al.*, 2007). Since we are interested in predicting the provider's daily need satisfaction and well-being, we aim at unravelling the working mechanisms of the autonomous motivation to support. Evidence shows that the autonomous motivation enhances the provider's need satisfaction and well-being (Weinstein & Ryan, 2010), whereas the controlled motivation to support effects the provider's needs and well-being rather negatively. Furthermore, findings reveal that the controlled motivation to support relates even more negatively to the support provider's need satisfaction and well-being as compared to providing no support at all (Weinstein & Ryan, 2010). Hence, we consider it important to gain insight in the underlying mechanisms of when and how the autonomous motivation to support relates to the need satisfaction and engagement of the provider, and consider the controlled motivation to support as a control variable.

Building on previous evidence (Gagné, 2003; Weinstein & Ryan, 2010), we argue that supportive behaviour based on an autonomous motivation has the capacity to satisfy each basic need. When employees report that the provided support is given out of enjoyment, interest, and true concern for the other, the support is an autonomous choice and endorsed by the provider (Weinstein & Ryan, 2010). Naturally, providing support based on an autonomous motivation makes the provider feel in charge and able to act out of personal choice, which likely satisfies the need for autonomy (Ryan & Deci, 2000). Also, by providing autonomous support, a connection between the provider and the receiver may arise because the provider offers authentic attention and help. The act of providing autonomously motivated support allows for the provider to feel part of a team and express their work-related and personal troubles, and, as such, fulfil the need for relatedness (Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). Finally, providing autonomously motivated support should play a clear role for the provider's need for competence. By providing support, the provider experiences interpersonal skills (e.g., he/she is socially capable) as well as job-relevant skills (e.g., he/she can help others with a task). Indeed, a study shows that helping elderly elicits feelings of competence and usefulness (Caprara & Steca, 2005). Hence, our first hypothesis reads:

Hypothesis 1. Autonomously motivated support provision (i.e., episodic level) relates positively to the satisfaction of the support provider's episodic basic psychological needs.

In addition, we suggest that need satisfaction is not simply important in its own right, but further enhances one's work engagement. According to Kahn (1990), investing energy in supporting co-workers has the potential to create personal meaningfulness through which employees engage themselves in work (May, Gilson & Harter, 2004). Previous studies have provided some evidence for Kahn's reasoning by showing that employees whose needs have been satisfied are more likely to experience vigour and absorption (Deci *et al.*, 2001; Van den Broeck *et al.*, 2008; Vansteenkiste *et al.*, 2007). In the present study, we follow a within-person approach and investigate the link between need satisfaction and work engagement at the episodic level.

Hypothesis 2. Autonomously motivated support provision (i.e., episodic level) is indirectly and positively related to the support provider's episodic work engagement through the satisfaction of episodic basic psychological needs.

Does it matter when support is given?

According to the job demands–resources (JD-R) model (Bakker & Demerouti, 2017), each work environment consists of its own constellation of job demands – such as emotionally demanding interactions with others (i.e., the aspects of the job that require sustained cognitive or emotional effort) – and job resources, such as performance feedback and support (i.e., the aspects of the job that are functional in achieving goals). Although job demands in general cost energy and require resource investment, several studies have shown that when enough received support is available, employees in demanding situations stay engaged and motivated (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). This suggests that support benefits the receiver most during episodes the receiver experiences high demands.

According to Batson (1998), the act of support has beneficial effects for the provider because the act of support is appreciated and valued by the receiver. In line with this, we argue that the act of support will be particularly appreciated when the support is provided during emotionally demanding episodes as particularly then the support is needed. This reasoning is in line with the match hypothesis of Cohen and Wills (1985), which posits that support is most effective when the support matches the coping requirements. As such, receiving social support must be most effective during emotionally demanding situations when there are many social stressors.

Specifically, we argue that the provider is likely to feel more effective about the support given to a co-worker during an emotionally demanding situation because the act of support emphasizes the capability of the provider to offer support during such situations. This reasoning is in line with findings from a study in which patients with multiple sclerosis, who actively support other patients by talking about their struggles, reported greater self-efficacy over the course of two years (Schwartz & Sendor, 1999). Furthermore, the support an employee provides during demanding situations is also more likely to be appreciated by the receiver, which makes the provider feel connected and related to the receiver. This expectation is reflected by research showing that volunteers

who help others in need feel that they matter (Piliavin & Siegl, 2007). Finally, when a provider offers support during emotionally demanding situations from which the receiver visibly benefits, the supportive act emphasizes that the moment to support was well chosen. As such, the appropriateness of the choice may boost the autonomy feelings.

Hypothesis 3. The link between autonomously motivated support and the provider's need satisfaction (i.e., episodic level) is stronger during episodes that the receiver is exposed to high (vs. low) emotional job demands.

Does it matter to whom the support is given?

Next to the fluctuating demands as experienced by the support receiver, we also expect that it matters to whom the support is given. Specifically, we expect that it matters for the provider's need satisfaction whether the receiver is ready to recognize learning opportunities in the environment. A construct that captures the extent to which employees are motivated to learn is goal orientation. Goal orientation is originally defined as orientation for action on how to achieve a task (Ames, 1992). Rather than focusing on the content of what people are attempting to achieve (i.e., objectives, specific standards), goal orientation defines why and how people are trying to achieve various objectives (Anderman & Maehr, 1994). Goal orientation is seen as 'a relatively stable dispositional variable that assumes (1) a learning orientation in which increasing competence by developing new skills is the focus and (2) a performance orientation in which demonstrating competence by meeting normative-based standards is deemed critical' (Colquitt & Simmering, 1998, p. 656).

Based on this distinction, we expect learning-oriented behaviours from someone who displays a strong learning orientation. Individuals with a learning orientation are inclined to seek feedback on past performances in order to evaluate current performances and focus on improving skills and knowledge. Learning-oriented employees are also less concerned with making mistakes (VandeWalle, 1997) and cope effectively with negative and positive feedback (Hirst *et al.*, 2009). Because feedback is comparable to forms of support, such as advisory and informational support (House, 1981), we expect learning-oriented employees to be more open to receiving structural support. In addition, we expect that employees who are strongly learning oriented are also more open to emotional support based on studies showing that learning-oriented employees in general are more open to experience (Klein & Lee, 2006) and in turn more responsive towards emotional support (Knoll, Burkert & Schwarzer, 2006). Therefore, we expect learning-oriented employees also to be open and responsive towards the emotional-related forms of support. Taken together, for the support provider we expect that providing support to a co-worker who displays a high learning orientation is satisfying the provider's need for competence because the provided support is likely to be more appreciated and valued by a receiver who is eager to learn. In addition, it is also more likely that the provider will feel more related to a receiver who takes the support into consideration because this enhances the feeling of being recognized and relied upon by others (Piliavin & Siegl, 2007).

Hypothesis 4. The link between autonomously motivated support and the provider's need satisfaction (i.e., episodic level) is stronger when the support is given to a co-worker who has a high (vs. low) learning goal orientation (trait-level).

Unlike a strong learning goal orientation, a performance goal orientation has been negatively related to the motivation to learn (Colquitt & Simmering, 1998). For instance, research has shown that individuals who focus strongly on their performance lose their motivation when difficulty in learning the content is expected (Colquitt & Simmering, 1998). In the present paper, we focus on prove performance goal orientation (Vandewalle, 1997). Vandewalle defined prove performance orientation as 'the desire to prove one's competence and to gain favourable judgment about it' (Vandewalle, 1997, p. 1000). Prove performance goal orientation is relevant for our study because employees displaying prove performance goal orientation are concerned with showing to co-workers that they perform better, and therefore may be less open for feedback or advice from co-workers or may find this threatening. The more prove performance-oriented employees are, the more they believe that ability is fixed and the more they want to show or prove that their ability to perform is high (Button *et al.*, 1996; Dweck & Leggett, 1988). When things get difficult and help is needed, prove performance-oriented employees are unlikely to accept and welcome help as they are not convinced that receiving support may actually help them (Dweck & Leggett, 1988). By receiving support, their inadequacy of completing the task on their own is emphasized. In contrast, when the desire of the receiver to prove his/her capacities is low, the provided support is welcomed and accepted. Such an experience is likely to satisfy the support provider's need for competence and make the provider feel seen and part of a team because the receiver is actually able to recognize the support, as well as the support provider (Piliavin & Siegl, 2007).

Hypothesis 5. The link between autonomously motivated support and the provider's need satisfaction (i.e., episodic level) is stronger when the support is given to a co-worker who has a low (vs. high) performance prove goal orientation (trait-level).

Taking Hypotheses 1–5 together, we propose that episodic support provision is indirectly related to episodic work engagement via episodic need satisfaction when the receiver (1) experiences an emotionally demanding situation, or is characterized by (2) a high learning goal orientation, or (3) a low prove performance goal orientation. In other words, we expect that the interaction between support provision and the receiver's situation and characteristics (i.e., emotional demands/learning/prove performance goal orientation) indirectly relates to the provider's work engagement by satisfying the provider's needs.

Hypothesis 6. The receiver's episodic emotional demands moderate the mediating effect of the autonomously motivated support (i.e., episodic level) on the provider's episodic work engagement, such that the effect is stronger when the receiver's emotional demands are high (vs. low).

Hypothesis 7. The receiver's learning orientation (i.e., trait level) moderates the mediating effect of the autonomously motivated support (i.e., episodic level) on the provider's episodic work engagement, such that the effect is stronger when the receiver's learning orientation is high (vs. low).

Hypothesis 8. The receiver's prove performance goal orientation (i.e., trait level) moderates the mediating effect of the autonomously motivated support on the provider's episodic work engagement, such that the effect is stronger when the receiver's prove performance goal orientation is low (vs. high).

Method

Procedure and sample

In order to capture episodes of support as part of real-life and work experiences, we used experience sampling methodology (ESM; Ohly *et al.*, 2010). We sampled two daily experiences among 194 police officers during one working day. Each day comprised one measurement halfway the working shift and one measurement before the end of the working shift. We randomly selected the days on which we went to several Dutch police stations (i.e., 17 days spread out over 2017–2018). Because participants were already matched to a co-worker within a shift, we asked matched dyads to participate. If one of the two co-workers within a dyad did not want to participate, we excluded the whole dyad from the study. Participants were invited to download an application on their smartphone. In order to guarantee confidentiality, responses of the dyad members were linked through an anonymous code provided by the researchers, which they had to fill in at the beginning of each questionnaire. Because the first two letters of each participant code within the same dyad had the same letter combination, we were able to link the dyads' members. Next, we sent an e-mail to all participants with a generic questionnaire, to measure the traits and demographics.

We used all the data points, also when only one of the participants from a dyad filled in the ESM survey. In total, 194 participants signed up, resulting in 97 dyads and $N = 227$–491 data points (i.e., response rate 84.4%). We collected data from both police officers who worked on the street (74%), and police officers answering calls from civilians (26%). Of the 194 participants who formed the final dataset, 111 participants filled in the general survey. This means that 83 participants of our sample (43%) did not fill in the general survey and, thus, reported no demographic variables. From the 111 participants of our sample who filled in their demographics (57% of our sample), 73 participants were male (66%) and 38 female (34%). The dyads are mixed with regards to the gender compositions, meaning that dyads consisted both of heterogeneous (i.e., men and women) and homogeneous couples (i.e., two men or two women). The mean age was 40.02 years ($SD = 11.42$). On average, the police officers worked 5.28 years within their current position ($SD = 5.85$) and worked 35.92 hours per week ($SD = 4.14$). Of all participants, 21.6% finished higher education (university or applied sciences), 50.5% completed a vocational training, and the other 27.9% finished high school.

Daily measures

When conducting ESM studies, Ohly *et al.* (2010) and Reis and Gable (2000) recommend using short scales or even single-item measures. Because ESM requires participants to fill in the same questionnaire a couple of times during the same day, the assessment should be kept as short as possible. We selected items from the scales based on factor loadings and adapted the formulation to an episodic experience.

Work engagement

We used one item from each dimension of the Utrecht Work Engagement Scale (Schaufeli, Bakker & Salanova, 2006) in line with work of Reina-Tamayo, Bakker and Derks (2017). We measured episodic work engagement using the following items: 'Right now, I feel full of energy' (vigour), 'Right now, I feel enthusiastic about my job' (dedication), and 'the moment before filling in this questionnaire, I was immersed in my work' (absorption; scale ranging from 1 = not at all, 7 = very much). The average internal consistency across episodes was α = .82.

Social support

In order to assess the provided support based on an autonomous motivation, we first had to assess to what extent employees provided support to their co-workers. We used the scale developed by Peeters, Buunk and Schaufeli (1995; based on House, 1981), from which we selected the three main types of support: instrumental, informative, and emotional support (House & Kahn, 1985). To capture instrumental support, we used the following item 'I helped my coworker with a certain task'; to capture informational support, we used the item 'I gave my coworker advice about how to approach an issue'; and to measure emotional support, we used the item 'I paid attention to the feelings and problems of my coworker' (1 = 'not at all', 2 = 'yes, to a small extent', 3 = 'yes, to some extent', 4 = 'yes, to a large extent' to 5 = 'yes, to a very large extent'; mean α = .75).

Autonomously motivated support

In the case that the participants did not fill in '1 = not at all' to the support provision items, participants were asked to indicate their motivational regulation for the support. We used Weinstein and Ryan's (2010) motivation to help scale and selected three items. An example is 'During the first half of my shift, I provided emotional or informational support to my colleague, because I thought it was important'. All items were rated on a scale ranging from 1 = not at all true to 7 = very true (mean α = .75).

Psychological need fulfilment

We used three items from Work-related Basic Need Satisfaction scale (W-BNS; Van den Broeck, Vansteenkiste, De Witte, Soenens & Lens, 2010) to measure fulfilment of each of the three basic needs – autonomy, relatedness, and competence. An example item is, 'Right now, I feel connected with other people at my job' (1 = not at all true, 7 = very true; mean α = .78). We summed the three items to create an overall index of need satisfaction (cf. Deci *et al.*, 2001; Vansteenkiste *et al.*, 2007).

Emotional demands

We selected five items from Van Gelderen *et al.*'s (2007) emotional demands scale, which was developed for use among police officers. An example item is, 'During the first half of the shift, I came in contact with verbally intimidating suspects/civilians' (1 = no that is not correct, 5 = yes that is correct; mean α = .81). The emotional job demands scale was based on prominent categories of civilians and suspects with whom the police officers have to deal with during their duties on the street. Because police officers answering incoming phone calls (26% of our sample) were not able to answer these items which

were specifically designed to measure emotional demands during interactions with civilians and suspects, we excluded this sub-sample (26%) from analyses concerning emotional demands.

Control variables

We controlled for the controlled motivation to provide support (Weinstein & Ryan, 2010; three items, mean α = .76). An example item is, 'During the first half of my shift I provided emotional or informational support to my colleague, because I felt I should.' (1 = not at all true, 7 = very true). Furthermore, we control for the amount of support that is provided in order to examine whether the effects of the autonomous motivation to support exist over and above the amount of support that is provided. As such, we test the notion that even if the amount of actually provided support is limited, the support can, in fact, exert effects as long as it is autonomously motivated.

General measures

General learning and prove performance goal orientation

Learning goal orientation and prove performance goal orientation were assessed using six items from the learning goal scale (α = .86) and the five items of the prove performance scale (α = .83) of Vandewalle (1997). An example item for learning goal orientation is, 'I enjoy challenging and difficult tasks at work where I'll learn new skills'. An example item for prove performance goal orientation is, 'I'm concerned with showing that I can perform better than my coworkers' (1 = strongly disagree, 5 = strongly agree).

Statistical analyses

In order to study non-independent data, we analyse the data by means of the Actor–Partner Interdependence Model (APIM; Cook & Kenny, 2005) using Mplus 7 (Muthén & Muthén, 1998–2012). Because 83 participants did not fill in the general questionnaire, we have to deal with missing values for the learning and prove performance goal orientation. In order to deal with the missing values, Mplus uses the full information maximum likelihood (FIML) method (Muthén & Muthén, 1998–2012). FIML is a method in which all available information is used to estimate the model parameters. The FIML method is recommended in social and behavioural research (Raykov, 2005). Importantly, with the APIM method of analysis it does not matter which direction (receiver to actor or actor to receiver) is reported; the results are the same as all employees in the sample are both actors and partners.

Since we measured the specific emotional demands with whom police officers have to deal with during their duties on the street, we exclude the police officers answering incoming phone calls from the analyses regarding the emotional demands (i.e., Hypotheses 1, 2, 3, and 6). To this purpose, we conduct two sets of multi-level analyses. The first analysis was built on the basis of three nested models comprising successively (1) the intercept (Model 1a), (2) the predictor and control variables (Model 1b), and (3) the interaction effect between autonomous support and the receiver's emotional demands (Model 1c). Similarly, to test the Hypotheses regarding the cross-level interactions (i.e., Hypotheses 4, 5, 7, and 8), we built on the basis of four nested models comprising successively (1) the intercept (Model 2a), (2) the fixed intercepts and slopes model (Model

2b), (3) the random intercepts and slopes model (Model 2c), and (4) the cross-level interactions (Model 2d). We used the -2 log-likelihood difference test to test the differences in fit between the models. We plotted the interactions using the Preacher, Curran, and Bauer's (2006) online tool for plotting 2-way interaction effects in hierarchical linear modelling.

Results

Descriptive statistics

The means, standard deviations, and correlations of all study variables are reported in Table 1. Next, we examined the intra-class correlation coefficients (ICC) for the provider's need satisfaction ($\rho = .38$) and the provider's work engagement ($\rho = .55$). We conclude that a substantial part of the variance is situated on the lower level, and a multi-level analysis is justified. We measured no variables on the dyad level. Preliminary analysis showed that the dyad level (level 3) was neither significant for episodic need satisfaction $\Delta\chi^2(1\ df) = .00$, *ns*, nor for episodic work engagement $\Delta\chi^2(1\ df) = .14$, *ns*. Since we cannot explain variance on level 3, we only make use of levels 1 and 2 in the analyses following previous practices (Peeters, Arts & Demerouti, 2016).

Measurement model

Multi-level confirmatory factor analysis was conducted using Mplus 7 (Muthén & Muthén, 1998–2012) to examine the construct validity of all variables. The proposed model included six within-person variables (i.e., autonomous and controlled support, the amount of support, the emotional demands, need satisfaction, work engagement) and two between-person variables (i.e., learning and prove performance goal orientation). Results showed a better fit to the data for a model comprising the eight distinct factors, $\chi^2(514) = 700.61$, CFI = .92, TLI = .91, RMSEA = .025, as compared to all possible seven-factor models or models with even fewer factors, $\Delta\chi^2(533) \geq 961.171, p < .001$.

Hypothesis testing

According to hypothesis 1, there is a positive relationship between the autonomous motivation to support and the satisfaction of the provider's basic needs. As can be seen in Table 2, Model 1c, results show that the autonomous support and satisfaction of the provider's needs are positively related ($\beta = .12$, *SE* = .05, $t = 2.20$, $p = .028$), also after controlling for frequency of support provision ($\beta = .04$, *SE* = .08, $t = 0.58$, $p = .564$). This means that when employees support a co-worker based on autonomous motivation during a work episode, they satisfy their basic needs. Hypothesis 1 is accepted.

Hypothesis 2 predicted an indirect relationship between the autonomous motivation to support and the provider's work engagement through the satisfaction of basic psychological needs. From Table 2, Model 1c, it can be seen that this indirect relationship is significant ($b = .22$, *SE* = .11, $t = 1.99$, $p = .047$), and the data thus support Hypothesis 2. During episodes in which employees provide support to a colleague, they feel more competent, related, and autonomous, and also more engaged in their work.

For hypothesis 3, which posits that the relationship between the autonomous motivation to support and the satisfaction of the support provider's needs is stronger when the support is provided during episodes that the support receiver experiences high

Table 1. Means, standard deviations, and Pearson correlations between the study variables

Variables	N	M	SD	1	2	3	4	5	6	7	8	N
General questionnaire												
1. Receiver General Learning Goal Orientation	89	4.67	0.77	—								
2. Receiver General Performance Goal Orientation	89	3.10	1.04	.13	—							
Daily experience samplings												
3. Social Support Provision	122	3.26	0.93	−.02	.13	—	.27**	.21**	.14*	.08	.06	228
4. Actor Autonomous motivated Social Support	121	5.29	1.35	.10	.02	.27**	—	.29**	.33**	.19**	−.01	227
5. Actor Controlled motivated Social Support	121	3.42	1.71	−.07	−.12	.19*	.31**	—	.01	.02	.15*	227
6. Actor Daily Need Satisfaction	149	6.05	0.93	−.13	−.04	.17*	.34**	−.01	—	.59**	−.03	281
7. Actor Daily Work Engagement	161	5.41	1.24	−.01	.07	.10	.21*	.07	.60**	—	−.02	491
8. Receiver Daily Emotional Demands	141	2.28	1.27	−.07	.23*	.05	−.03	.12	.03	.03	—	291

Note. *p < .05; **p < .01 (2-tailed). Correlations above the diagonal are within-person correlation (i.e., episodes; N = 227–491). Correlations below the diagonal are respondent-level correlations aggregated over the study day (N = 89–161). Means and standard deviations are person-level means.

Table 2. Multi-level estimates for the moderated mediation model with the episodic interaction estimating episodic work engagement as the dependent variable (using the sub-sample consisting of police officers on the street)

Level and variable	Null model/intercept-only (Model 1a)		Episodic predictors (Model 1b)		Episodic interaction (Model 1c)	
	Episodic need satisfaction β (SE)	Episodic work engagement β (SE)	Episodic need satisfaction β (SE)	Episodic work engagement β (SE)	Episodic need satisfaction β (SE)	Episodic work engagement β (SE)
Level 1						
Autonomous support			.12* (.05)		.12* (.05)	
Controlled support			.01 (.04)		.01 (.04)	
Amount of provided support			.04 (.08)		.04 (.08)	
Receiver's episodic emotional demands			−.08 (.07)		−.08 (.07)	
Episodic need satisfaction				.63*** (.06)		.72*** (.06)
Episodic interaction						
Receivers episodic emotional demands × Autonomous support					.24** (.07)	
Amount of provided support × Autonomous support					−.07 (.09)	
Indirect effect						
Autonomous support → Episodic need satisfaction → Episodic engagement					.22 (.11)	
Mediated moderation						
−1 SD Receiver's episodic demands					−.06 (.20)	
+1 SD Receiver's episodic demands					.50** (.18)	
Residual variance components						
Within-person variance (σ^2)	.99*** (.02)		.61*** (.07)		.92*** (.04)	.48*** (.09)
Additional information						
−2 log likelihood	−793.300		−437.422		−367.460	
Scaling correction factor for MLR	1.54		1.17		1.89	
Δ−2 log likelihood			355.878***		69.962***	
Degrees of freedom	4		13		14	

Note. *p ≤ .05; **p ≤ .01; ***p ≤ .001. N = 111. Standardized coefficients (β) are reported, except for the moderated mediation and indirect effect of the unstandardized coefficients are reported.

(vs. low) emotional demands, we look again at Table 2, Model 1c. It can be seen that the interaction term of the provider's autonomous motivation to support and the receiver's episodic emotional demands is a significant predictor of the provider's episodic need satisfaction (β = .24, SE = .07, t = 3.21, p = .001). In order to determine the pattern of this interaction effect, we conducted simple slope analyses following Preacher *et al.* (2006). The results (plotted in Figure 2) show that during the episodes that the receiver experiences high emotional demands (+1 *SD*), the slope relating autonomous motivation to support and the provider's need satisfaction is significant and positive (estimate = .98, SE = .20, z = 4.83, p < .001). However, during the episodes the receiver is confronted with low emotional demands (−1 *SD*), the slope relating autonomous motivation to support and the provider's need satisfaction is significant but negative (estimate = −.40, SE = .20, z = −1.99, p = .046). These results indicate that the support provider's basic needs are more satisfied when the support is provided to a co-worker who experiences high emotional demands. Therefore, Hypothesis 3 is supported.

To test Hypotheses 4–8, we examine the results in Table 3 Model 2d, in which the multi-level estimates and the cross-level interactions are reported. Hypotheses 4 and 5 proposed that receiver's learning goal orientation positively moderates, and receiver's prove performance orientation negatively moderates the relationship between the provider's autonomous motivation to support and the provider's basic need satisfaction. As shown in Table 3, Model 2d, the interaction between autonomous motivation to support and the receiver's learning goal orientation is not significant (b = .05, SE = .31, t = 0.15, p = .884). We thus reject Hypothesis 4. However, as can be seen in Table 3,
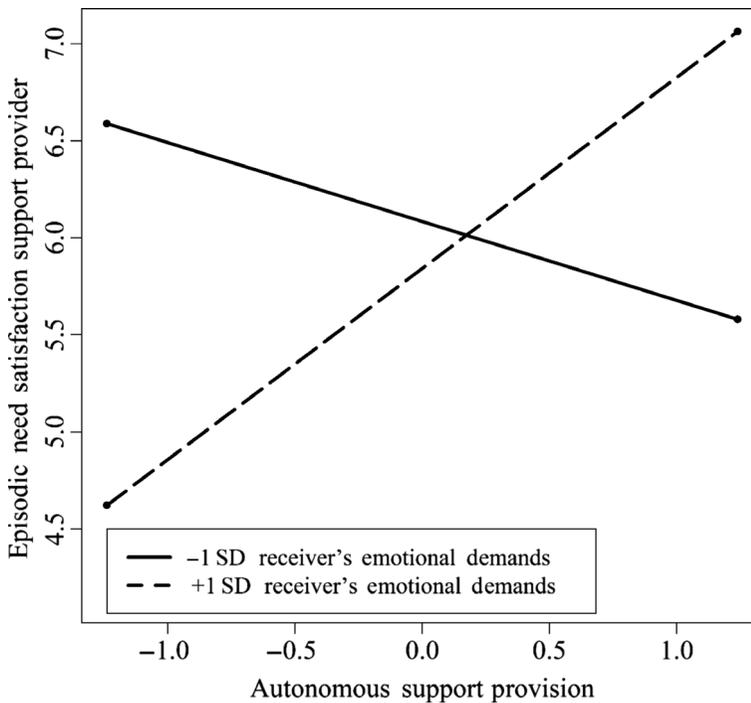

Figure 2. Interaction effect of autonomous support provision with receiver's emotional demands on the provider's daily need satisfaction.

Table 3. Multi-level estimates for the moderated mediation models with the cross-level interactions estimating episodic work engagement as the dependent variable (using the full sample consisting of police officers on the street, as well as police officers on phone call duty)

Level and variable	Null model/intercept-only (Model 2a)		Fixed intercept and slope model (Model 2b)		Random intercept and random slope (Model 2c)		Cross-level interaction (Model 2d)	
	Episodic need satisfaction b (SE)	Episodic work engagement b (SE)	Episodic need satisfaction b (SE)	Episodic work engagement b (SE)	Episodic need satisfaction b (SE)	Episodic work engagement b (SE)	Episodic need satisfaction b (SE)	Episodic work engagement b (SE)
Level 1								
Autonomous support			.26* (.13)		.55** (.20)		.54** (.21)	
Controlled support			.02 (.09)		.03 (.05)		.02 (.06)	
Amount of provided support			−.12*** (.11)		−.10* (.05)		−.11* (.05)	
Episodic need satisfaction				.74*** (.09)		.50*** (.13)		.51*** (.13)
Level 2								
Autonomous support			.24*** (.06)		.24*** (.06)		.24*** (.06)	
Basic need satisfaction				.66*** (.09)		.66*** (.09)		.66*** (.09)
Receiver LGO			−.19 (.13)		−.18 (.13)		−.19 (.13)	
Receiver PPGO			−.04 (.08)		−.06 (.08)		−.03 (.08)	
Cross-level interaction								
Receiver LGO × Autonomous support							.05 (.31)	
Receiver PPGO × Autonomous support							−.63* (.26)	
Mediated moderation								
−1 SD Receiver's LGO							.26 (.18)	
+1 SD Receiver's LGO							.29 (.17)	
−1 SD Receiver's PPGO							.60** (.19)	
+1 SD Receiver's PPGO							−.06 (.19)	

Continued

Table 3. (*Continued*)

Level and variable	Null model/intercept-only (Model 2a)		Fixed intercept and slope model (Model 2b)		Random intercept and random slope (Model 2c)		Cross-level interaction (Model 2d)	
	Episodic need satisfaction b (SE)	Episodic work engagement b (SE)	Episodic need satisfaction b (SE)	Episodic work engagement b (SE)	Episodic need satisfaction b (SE)	Episodic work engagement b (SE)	Episodic need satisfaction b (SE)	Episodic work engagement b (SE)
Residual variance components								
Within-person variance (σ^2)			.80** (.09)	1.11*** (.14)	.08* (.03)	.52*** (.13)	.07* (.03)	.51*** (.13)
Intercept variance (τ_{00})			.60*** (.06)	.72*** (.09)	.60*** (.07)	.72*** (.09)	.60*** (.07)	.72*** (.09)
Slope variance (τ_{11})							.90 (.46)	
Additional information								
−2 log likelihood	−1,677.731		−1,146.911		−1,127.580		−1,125.624	
Scaling correction factor for MLR	1.32		1.04		1.15		1.11	
Δ−2 log likelihood			530.820***		19.331***		1.956***	
Degrees of freedom	8		21		25		28	

Note. *p* ≤ .05; **p* ≤ .01; ***p* ≤ .001. Model 2d *N* = 227. Only unstandardized coefficients (b) are reported because Mplus does not provide standardized coefficients for models with random slopes. The coefficient in Model 2c and 2d representing the relationship between autonomous support and need satisfaction is the randomized slope.

Model 2d, the interaction between autonomous motivation to support and the receiver's prove performance goal orientation is significant ($b = -63$, $SE = .26$, $t = -2.42$, $p = .016$). The simple slope tests (plotted in Figure 3) show that when the receiver reports a low (-1 SD) prove performance goal orientation, the slope between the autonomous motivation to support and the provider's need satisfaction is positive and significant (estimate $= 1.38$, $SE = .51$, $z = 2.75$, $p = .006$). In contrast, when the receiver reports a high ($+1$ SD) prove performance goal orientation, the slope between the support provider's autonomous motivation to support and the provider's need satisfaction is not significant (estimate $= .42$, $SE = .51$, $z = 0.83$, $p = .404$). These results show that when providers support colleagues who are less concerned with proving themselves, providers feel more competent, related, and autonomous during their work. We thus accept Hypothesis 5.

Hypotheses 6, 7, and 8 proposed that the indirect relationship of autonomously provided support to provider's engagement through the provider's basic need satisfaction is moderated in the first stage by the receiver's emotional demands (Hypothesis 6), the receiver's learning goal orientation (Hypothesis 7), and the receiver's prove performance orientation (Hypothesis 8). Because the interaction effect of support provision and the support receiver's learning goal orientation on the provider's need satisfaction is not significant, we reject Hypothesis 7. The results in Table 2, Model 1c show that the indirect effect is positive and significant when the support is provided to a police officer who faces high emotional demands (estimate $= .50$, $SE = .18$, $t = 2.82$, $p = .005$). In contrast, the indirect path is not significant when the support is provided to a receiver
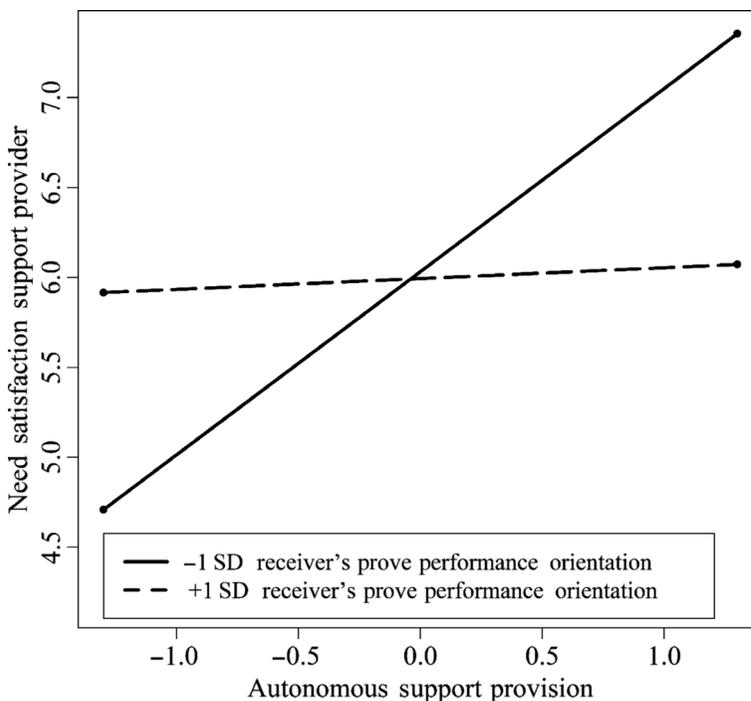

Figure 3. Interaction effect of autonomous support provision with receiver's prove performance goal orientation on the provider's episodic need satisfaction.

who faces low emotional demands (estimate $= -.06$, $SE = .20$, $t = -0.33$, $p = .744$). Thus, providing support only satisfies basic needs and fosters work engagement when the support is given during an episode that the receiver experiences high emotional demands. These results support Hypothesis 6.

Finally, as shown in Table 3, Model 2d, the indirect path from autonomous support to the provider's work engagement via the provider's need satisfaction is also positive and significant when the support is provided to a receiver who holds a low prove performance orientation (estimate $= .60$, $SE = .19$, $z = 3.11$, $p = .002$). The mediation path is negative and non-significant when the receiver displays a high prove performance orientation (estimate $= -.06$, $SE = .19$, $z = -0.301$, $p = .764$). Providing support to a co-worker is particularly satisfying and engaging when the co-worker reports a low prove performance goal orientation. This means that Hypothesis 8 is accepted as well.

Finally, in order to see whether each of the relationships between the autonomous support and the three separate needs (need for autonomy, relatedness, and competence) are also moderated by the receiver's emotional demands and the receiver's prove performance orientation, we conducted two additional and exploratory sets of analyses. The findings from the first analysis including the receiver's emotional demands as moderator reveal the same picture for each separate need satisfaction as the results on the composite score of the need satisfaction. However, the results from the second analysis with the receiver's prove performance goal orientation as moderator reveal that the receiver's prove performance does not moderate any of the relationships between the autonomous support and the three separate needs. The results from these additional analyses can be requested upon from the first author.

Discussion

In line with our theorizing, the results show that providing support based on an autonomous motivation relates positively with the provider's work engagement through satisfying the provider's needs. In addition, the results show that it matters for the support provider's need satisfaction and work engagement whether the support is given to a co-worker who experiences high (vs. low) emotional demands and whether the receiver is concerned with proving him/herself. In contrast to our theorizing, the results do not support our prediction that the learning goal orientation of the support receiver influences the provider's need satisfaction or work engagement.

Theoretical contributions

First of all, the result that providing support relates positively to the provider's engagement by satisfying the provider's needs is in line with our predictions based on SDT (Ryan & Deci, 2000) and Bakker and Van Woerkom's (2017) model of self-determination strategies. This finding namely reveals that providing support to one's colleagues can be a strategy that employees undertake in order to proactively satisfy their own needs and enhance their work engagement. The strategy of supporting one's co-workers can therefore be considered as a valuable addition to the repertoire of self-determination activities proposed by Bakker and Van Woerkom (2017), which are self-leadership, job crafting, designing work to be playful, and strengths use.

Moreover, whereas other theories posit that self-regulation (i.e., ego-depletion theory; Baumeister, 2002) and support provision (i.e., equity theory; Adams, 1965) are likely to

drain the provider's energy, SDT (Ryan & Deci, 2008) posits that as long as behaviours come from an autonomous motivation, support provision is not depleting but can instead be vitalizing. The present findings are in accordance with this proposition and show that supportive actions, based on an autonomous motivation, indeed enhance the experienced energy available by satisfying the daily needs of the support provider. Even more importantly, our results reveal that the autonomous motivation to support enhances employees' engagement in an actual organizational setting of police officers and, as such, add ecological validity to SDT (Ryan & Deci, 2000) and previous findings (Weinstein & Ryan, 2010). As such, we demonstrate that the satisfaction of episodic needs is a relevant explanatory mechanism through which the provision of autonomous support relates to employee's daily engagement.

Furthermore, we contribute to the literature by testing two boundary conditions of the benefits that providing can have on the support provider's need satisfaction and work engagement. The first boundary condition that we examined concerned the emotional demands as experienced by the support receiver. Specifically, we predicted and found that the provider reaps more benefits from helping others when the support receiver faces high emotional demands. The more emotional demands a co-worker experience, the more satisfied and engaged the support provider is. This finding is in line with our hypothesis based on the JD-R (Bakker & Demerouti, 2017) and esteem enhancement theory (Batson, 1998). The findings that the benefits of providing for the support provider depend on the amount of emotional demands as experienced by the receiver offer a new perspective on the benefits of receiving support during emotional demanding work episodes. Namely, next to the obvious benefits of receiving support during emotional demanding work situations for the support receiver (De Jonge *et al.*, 2008), it is now also known that the act of support provision during emotional demanding episodes for the support receiver simultaneously benefits the support provider's needs and engagement.

However, while investigating the receiver's emotional demands as a boundary condition for the benefits of support provision, results unexpectedly revealed that supporting a co-worker during an episode in which that co-worker is experiencing low demands impairs the provider's need satisfaction. This finding is in line with previous experimental research showing that when support is not needed, receivers of support reacted more negatively to the received support (Deelstra *et al.*, 2003). Specifically, Deelstra *et al.* (2003) found that the receivers of support within a condition in which no obstacles were present reacted with more negative affect, lower self-esteem, and a higher heart rate as compared to participants in a condition in which actual obstacles were present. The negative reactions in the no obstacle condition were explained with the threat-to-self-esteem model, which states that employees who feel that their self-esteem is threatened by the receipt of support will react negative (Fisher, Nadler & Whitcher-Alagna, 1982). According to Deelstra *et al.* (2003), the negative reaction is particularly present when there is no need for help because the employees will not feel any urge to overcome the threat to their self-esteem. This theorizing fits with the unexpected negative finding of providing support to a co-worker who does not experience a demanding situation. However, because the results show no relationship between support provision and the provider's episodic work engagement during episodes that the support receiver is experiencing low demands, we conclude that supporting colleagues during low demanding episodes impedes the provider's need satisfaction but it does not affect the provider's episodic work engagement. In other words, helping someone who perhaps does not need it impedes the provider's need fulfilment but is not as harmful as to also damage the provider's work engagement.

Finally, we have contributed to the existing literature by testing a second boundary condition of the support receiver for the benefits of providing support for the provider's episodic needs and engagement. Consistent with our predictions, results showed that it is indeed more satisfying to support a co-worker with a low prove performance orientation than a co-worker with a strong prove performance orientation. That it is more satisfying to support a co-worker who displays a low desire to prove him/herself adds to the goal orientation literature that being less concerned with proving one's performance can affect surrounding others within the organization in a positive way (Payne, Youngcourt & Beaubien, 2007; Vandewalle, 1997).

However, in contrast to our theorizing based on the goal orientation theory (Vandewalle, 1997) results did not confirm our hypothesis that it is more satisfying to support a co-worker with a strong learning goal orientation. This means that the receiver's desire to learn from others does not make it more satisfying for the provider to lend support. A possible explanation for this is that employees with a high learning goal orientation tend to be more proactive (Tolentino *et al.*, 2014). Providing support to employees with a high learning orientation may therefore not be more satisfying because the receiver is also able to take action him/herself. As such, the provider's needs are not enhanced because the receiver signals that he/she could easily have found the support somewhere or from someone else. In sum, these results thus suggest that the receiver's goal orientation moderates the relationship between support provision and the provider's need satisfaction only in the case of the receiver's prove performance goal orientation. Specifically, if the receiver refrains from a prove performance (and perhaps non-constructive) attitude, the support provision has more potential to fulfil the provider's needs.

With the present study, we contribute to the social support literature (Shumaker & Brownell, 1984). We do so, by pinpointing two relevant boundary conditions within the receiver's context that determine when it is more satisfying (i.e., high emotional demanding situation of the receiver) or when it is less satisfying (i.e., high prove performance-oriented receiver) to support a co-worker. Furthermore, the present study adds to SDT (Ryan & Deci, 2000, 2008) that for support provision to be fulfilling, it is not enough to consider the underlying motivations of the person who provides the support. Rather, it is just as important to consider when (i.e., Is the receiver in need of support?) and to whom (i.e., Is the receiver welcoming the support?) the social support is provided.

Practical implications

The findings of this study have implications for organizations in which employees work with each other and need to support each other. This study shows that by supporting one's co-workers, employees are able to fulfil their own daily needs and boost their own work engagement. With regard to this, it is important to keep in mind that these benefits only exist when the support is enacted out of joy and true concern for the other's well-being. In addition, the present study reveals that in highly emotional demanding work situations, the provider's basic needs are satisfied more. An implication is therefore that in work settings in which highly emotional demanding situations are to be expected on a daily basis, such as with police officers, it can be helpful to be aware that help also benefits the helper. Obstacles that hinder employees to offer support during emotional demanding situations, such as organizational rules, or demanding work settings in which people are alone, may be altered or removed. Working in couples may be encouraged when new or difficult tasks are expected, especially emotionally demanding tasks, or 'buddies' can be

assigned to employees who may need this (e.g., newcomers). It is important to offer the insight that providing autonomously motivated support may enhance their well-being and that it is important to reserve the support for circumstances when receivers experience high emotional demands. Helping others and oneself in the right way and/or on the right moment may lead to a healthier police force.

Limitations

A number of limitations of this study should be mentioned. First of all, as we specifically examined whether providing support to a co-worker who experiences high emotional demands is more satisfying, we cannot generalize the findings to other types of demands, such as cognitive or physical demands. Future research is needed to test whether other types of demands also influence the relationship between the provided support and need satisfaction. Another limitation is that because we used a specific measurement to assess the emotional demands of the police officers during their duties on the street, we were unable to measure the emotional demands using the same specific scale within the sub-sample of police officers performing phone call duties. Hence, our model could be tested in either type of police officers. A further limitation is that because we tested our model using a specific sample of police officers, we cannot generalize our conclusions with certainty to other populations. Hence, it would be an interesting direction for future studies to replicate the current model in different working occupations. Finally, we specifically focused on the effects of autonomously motivated support provision and daily need fulfilment on employee's work engagement. It may be interesting for future studies to also consider other types of work-related well- and ill-being, such as job satisfaction and burnout (Bakker & Oerlemans, 2011).

Conclusion

Taken together, providing support based on an autonomous motivation can be a self-determination strategy that employees undertake in order to proactively satisfy their own needs and enhance their work engagement. With regard to the provider's episodic need satisfaction and work engagement, the results from the present study show that providing autonomous support to co-workers fulfils the support provider when the support is given on moments that the co-worker experiences high emotional demands. Furthermore, support provision is most fulfilling for the support provider when the receiver refrains from a prove performance (and perhaps non-constructive) attitude.

Conflicts of interest

All authors declare no conflict of interest.

Author contributions

Marijntje Eveline Lidewij Zeijen: Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Project administration; Writing – original draft; Writing – review & editing. Paraskevas Petrou: Supervision; Validation; Writing – review & editing. Arnold B. Bakker: Conceptualization; Supervision; Writing – review & editing. Benjamin R. Van Gelderen: Data curation; Methodology; Writing – review & editing.

Data availability statement

Data available on request due to privacy/ethical restrictions

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