

Enhancing Emotion-Regulation Skills in Police Officers: Results of a Pilot Controlled Study

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Police officers are routinely exposed to situations that elicit intense negative emotions; thus, officers have a particularly strong need for effective methods of regulating such emotions. The main purpose of this study was to investigate whether a manualized emotion-regulation training (Integrative Training of Emotional Competencies; iTEC; Berking, 2010a) can improve the emotion-regulation skills of police officers. First, self-reports of 9 emotion-regulation skills were assessed in a sample of officers ($N=31$) and compared to those of a matched community-based control group. Then, the effects of the training on the emotion-regulation skills of officers were evaluated in a time-staggered design with a waitlist control condition. Results indicate that, compared to controls, officers have difficulties in accepting and tolerating negative emotions, supporting themselves in distressing situations, and confronting emotionally challenging situations. The training significantly enhanced successful skill application, especially some skills with which officers reported difficulty applying. These findings

suggest that a focus on emotion-regulation skills may be an important component for programs aimed at preventing mental-health problems in police officers.

THE ABILITY TO REGULATE¹ negative emotions is integral for the maintenance of mental health and well-being (e.g., Gross & Muñoz, 1995; Kring & Werner, 2004), particularly in populations routinely confronted with situations that elicit intense negative emotions. One such population is the police force (e.g., Patterson, 2001; Violanti, 1992). Police officers are routinely exposed to dangerous and unpredictable situations with high probabilities of triggering stress, anger, and anxiety (Anderson, Litzenberger, & Plecas, 2002; Mearns & Mauch, 1998; Violanti & Aron, 1994). In order to enforce the law, officers at times are required to use force, which has the potential of hurting, or even killing, other people. Officers must make difficult decisions with little or no forethought, and they may suffer afterward from shame, guilt, worry, and

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¹ In order to avoid awkward formulations, we subsume concepts such as understanding, accepting, and tolerating emotions under the term *emotion regulation* if not otherwise indicated. Such a broad definition of the term is justified because these skills have significant impact on the nature and intensity of an emotion and can therefore be seen as part of the regulation process (see Thompson, 1994).

doubts about the necessity of their decisions (e.g., Amaranto, Steinberg, Castellano, & Mitchell, 2003). Research has shown that police officers also suffer when confronted with crime and accident victims, particularly when these victims are children (Violanti & Aron). They also must cope with anger and disappointment that arise when suspects, whom they took high personal risk to detain, are released by the courts, possibly due to minor formal errors (e.g., Amaranto et al., 2003; Ayres & Flanagan, 1994). Disappointment and frustration may also arise when police officers feel that their efforts are not valued by their superiors, the press, or the public (Amaranto et al.; Cooper, Davidson, & Robinson, 1982; Evans & Coman, 1988; Gudjonsson & Adlam, 1985). Moreover, police work often involves night-shifts (Ayres & Flanagan, 1994; Evans & Coman, 1988), substantial repetitive paperwork (Cooper et al., 1982; Gudjonsson & Adlam), lack of administrative support (Cooper et al.; Gudjonsson & Adlam), limited opportunities for advancement (Evans & Coman), and a rigid hierarchy that limits levels of autonomy and control (Burke, 1993; Violanti & Aron). The combination of these factors is likely to cue feelings of frustration, anxiety, helplessness, burnout, and depressive symptoms (Evans & Coman; Stuart, 2008; Violanti & Aron).

Unfortunately, police officers are widely reported to have difficulties acknowledging the presence of negative emotions (Evans, Coman, Stanley, & Burrows, 1993; Gasch, 2006; Violanti, Marshall, & Howe, 1985). Consistently, police officers are likely to use emotion-regulation strategies such as denial, suppression, and overall avoidance of negative emotions (Amaranto et al., 2003; Pogrebin & Poole, 1995). However, substantial research in clinical and nonclinical populations has shown that, although these strategies initially might lessen the negative emotions, they eventually have the paradoxical effect of leading to the continuation—or even escalation—of the emotions they are intended to suppress (Campbell-Sills, Barlow, Brown, & Hofmann, 2006; Eifert & Heffner, 2003; Feldner, Zvolensky, Eifert, & Spira, 2003; Feldner, Zvolensky, Stickle, Bonn-Miller, & Leen-Feldner, 2006; Levitt, Brown, Orsillo, & Barlow, 2004).

This combination of exposure to situations that elicit negative emotions and (probable) emotion-regulation deficits is likely to increase police officers' risk of developing mental-health problems and dysfunctional methods of short-term emotion regulation. As such, prevalence rates for current posttraumatic stress disorder (PTSD) in police officers range between 7% and 13% (Carlier, Lamberts, & Gerson, 1997; Robinson, Sigman, &

Wilson, 1997), whereas 12-month prevalence rates in the general population range between 2% and 5% (Wittchen, Gloster, Beesdo, Schönfeld, & Perkonig, 2009). Additionally, officers report utilizing dysfunctional strategies such as alcohol and physical isolation as methods for coping with stressful work situations (Burke, 1993). Consistently, police officers show a high prevalence of problematic alcohol consumption (Dietrich & Smith, 1986), with 33% to 48% of male officers and 24% to 40% of female officers reporting harmful levels of drinking (Davey, Obst, & Sheehan, 2000; Richmond, Wodak, Kehoe, & Heather, 1998).

More direct evidence for the role of emotion-regulation deficits in the development of mental-health problems comes from a study showing that officers' mood-regulation expectancies moderate the strength of the association between perceived stress and psychopathological symptoms (Mearns & Mauch, 1998). Additional research has shown that coping styles of police officers modify the effects of stress on psychological distress. Contrary to expectations, a problem-focused coping style predicts a stronger association between work-related stress and distress, whereas an emotion-focused style appears to buffer the impact of negative life-events on distress (Patterson, 2003). To explain this unexpected finding, Patterson argued that the use of problem-solving coping styles may be detrimental when the stressor is difficult to change. Notably, such a situation is likely to occur when change-oriented officers experience intense negative emotions, which cannot easily be controlled by sheer will-power. These findings support the importance of (a) enhancing overall emotion-regulation skills in police officers, and (b) including a specific focus on acceptance-based emotion-regulation strategies.

According to Thompson (1994), *emotion regulation* has been defined as “the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals” (pp. 27-28). Evidence for the involvement of emotion-regulation deficits in the development of mental disorders includes (a) cross-sectional studies showing various aspects of psychopathology to be associated with deficits in emotion-regulation skills (e.g., Gratz & Roemer, 2004; Levine, Marziali, & Hood, 1997; Novick-Kline, Turk, Mennin, Hoyt, & Gallagher, 2005; Sim & Zeman, 2004), (b) studies demonstrating that emotion-regulation skills predict status of mental health at later points in time (e.g., Berking, Orth, Wupperman, Meier, & Caspar, 2008; Seiffge-Krenke, 2000), and (c) studies suggesting

that emotion-regulation skills may mediate the effects of a stressor on the development of psychopathological symptoms (e.g., Campbell-Sills et al., 2006; Sim & Zeman, 2005).

Building on established emotion-regulation theories (e.g., Greenberg, 2002; Gross, 1998; Larsen, 2000; Leahy, 2002; Saarni, 1999), Berking (2010a) has proposed an integrative model of Adaptive Coping with Emotions (ACE) as a theoretical framework for identifying treatment targets in interventions aimed at improving emotion regulation. In the ACE model, effective emotion regulation is conceptualized as the situation-adapted interplay of the abilities to (a) consciously process emotions/be aware of emotions, (b) identify and label emotions, (c) correctly interpret emotion-related body sensations, (d) understand the prompts of emotions, (e) actively modify negative emotions to feel better, (f) accept negative emotions when necessary, (g) tolerate negative emotions when they cannot be changed, (h) confront (vs. avoid) distressing situations in order to attain important goals, and (i) compassionately support (encourage, self-soothe) oneself in emotionally distressing situations. Empirical studies designed to test the model have found that all included skills are significantly and notably associated with mental health (Berking, Wupperman, et al., 2008; Berking & Znoj, 2008) and that successful application of these skills predicts mental health at a later point in time (Berking, Orth, et al., 2008). Among skills included in the model, those most strongly associated with mental health include the abilities to modify negative emotions, accept negative emotions, and tolerate negative emotions; consistently, enhancements in these skills are most strongly associated with treatment outcome during cognitive-behavioral therapy (Berking, Wupperman, et al., 2008).

Recently, an intensive training program has been developed to explicitly target the skills included in the ACE model (Berking, 2010a). The *integrative Training of Emotion-Regulation Competencies* (iTEC; German: Training emotionaler Kompetenzen; Berking, 2010a²) is a transdiagnostic, group-based intervention that can be added to any form of empirically validated treatment whenever emotion-regulation deficits are identified as an important treatment target. Incorporating the iTEC-program into standard CBT treatment has been shown to improve treatment outcome for emotion-regulation skills, psychopathology, and well-being in a heterogeneous inpatient sample (Berking, Wupperman,

et al., 2008). Although the iTEC-program was primarily designed as an adjunctive intervention for mental disorders, it can also be utilized as a stand-alone measure to help prevent the development of mental-health problems in at-risk populations, such as police officers (Berking, 2010a).

Study Aims

Research suggests that enhancing general emotion-regulation skills may be an important component of preventive interventions for police officers. However, although several prevention programs have targeted topics such as stress (McCarty, Tomasino, Atkinson, & Sundram, 1999), alcohol abuse (Richmond, Kehoe, Hailstone, Wodak, & Uebel-Yan, 1999), or aggression (Fyfe, 1995), there is currently no empirically validated program that targets the enhancement of general emotion-regulation skills in police officers. Furthermore, despite extensive literature on the pressures of police work (e.g., Amaranto et al., 2003; Evans & Coman, 1988; Patterson, 2001; Violanti, 1992; Violanti & Aron, 1994), little empirical research is available regarding emotion-regulation skills of this at-risk population. The aim of this study was to test the hypothesis that general emotion-regulation skills of police officers can be enhanced by an intensive emotion-regulation skills training. Additionally, we conducted exploratory analyses to investigate which emotion-regulation skills officers find particularly difficult to apply. On the basis of the available literature, we assumed that police officers would be more likely to have difficulties with accepting negative emotions, tolerating negative emotions, and compassionately supporting themselves when distressed. Finally, we explored whether the training would particularly enhance those skills with which officers report difficulty.

Method

PARTICIPANTS

Participants were recruited with the help of the psychological services for the police in Zuerich, Switzerland. E-mails were sent to Zuerich's 12 local police chiefs asking them to alert subordinates about the possibility of participating in a no-cost emotion-regulation training. Officers were informed that participation was voluntary and that all information would be kept confidential. From July through December 2006, 350 officers were informed about the treatment, and 31 volunteered to participate in the study. Most were male (22/31), and the average age was 41.23 years ($SD=8.59$,

²An English version of the iTEC manual is currently being developed. A preliminary version can be obtained from the first author.

range=27–58 years). Four police officers dropped out of training and were consequently excluded from the training-evaluation part of the study (see Fig. 1).

All dropouts were due to well-documented emergency police operations that the officers were verifiably not allowed to cancel or postpone. Due to the missing posttraining data of these participants, intent-to-treat analyses were not performed. Two of the dropouts were female, two were male. Average age and total pre-scores on the Emotion-Regulation Skills Questionnaire (ERSQ; Berking & Znoj, 2008; see *Measures*) of dropouts did not differ notably from average age and pre-scores of completers (age: $M=42.5$ years; $SD=9$; range=35–55; $ERSQ_{\text{total score}}$: $M=2.51$, $SD=0.58$).

In order to identify specific emotion-regulation difficulties in police officers, pre-training self-reports of emotion regulation by officers were compared to those of a control group ($N=31$). The latter was drawn from a community-based sample ($N=215$), which had been utilized in the validation of the ERSQ and was matched with regard to sex and age. As the community-based sample of potential controls was younger than the police officers on average, the best possible match was achieved by picking the oldest potential controls after having matched for sex (22/31 male), resulting in nonsignificant differences with regard to age ($M=41.13$ years, $SD=10.99$, range=27–61 years). Additional analyses indicated that the subsample drawn for this study did not differ from the total

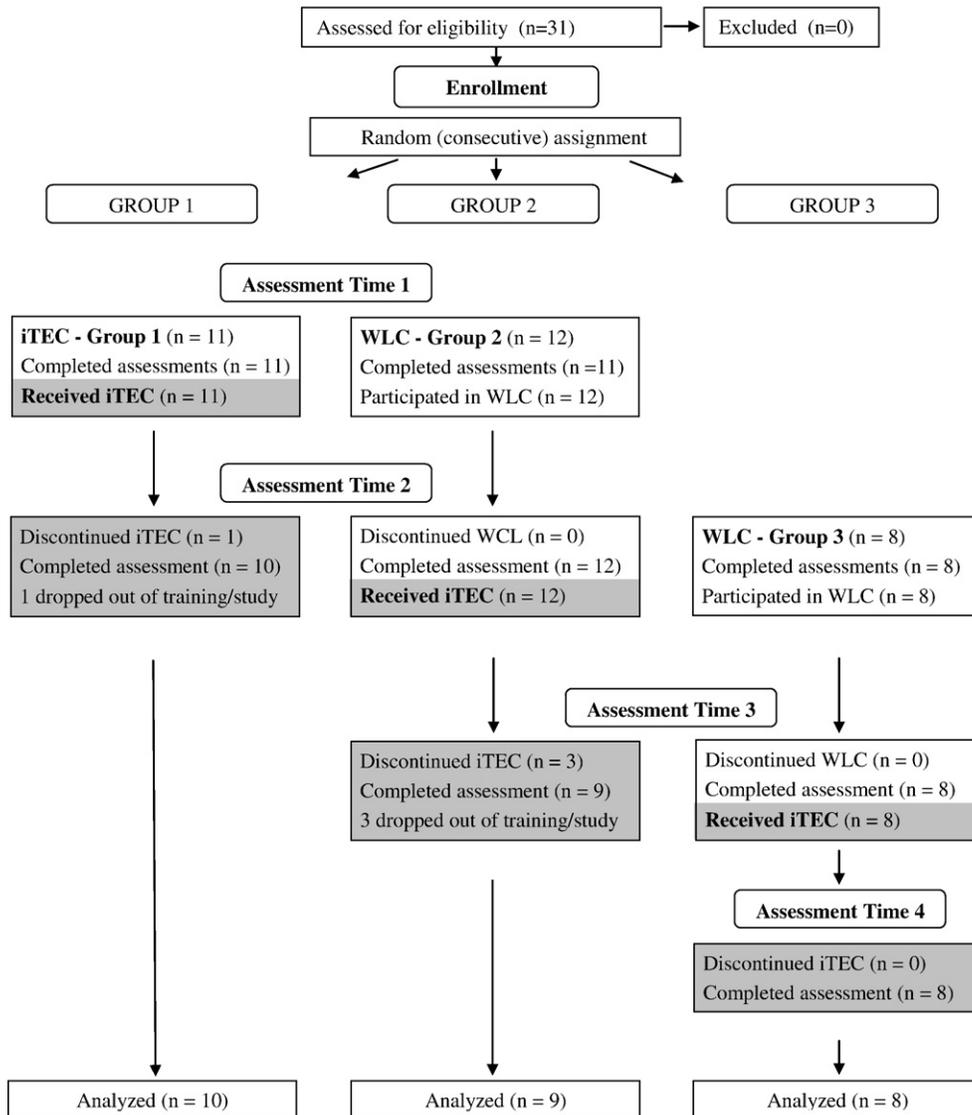


FIGURE 1 CONSORT Flow Diagram. iTEC=Integrative Training of Emotional Competencies; WLC=Waitlist Control Condition.

community-based sample on measures of psychopathological symptom load and well-being.

MEASURES

Emotion Regulation

The Emotion-Regulation Skills Questionnaire (ERSQ; German version: Berking & Znoj, 2008) is a 27-item self-report instrument that utilizes a 5-point Likert-type scale (0 = *not at all*, 1 = *rarely*, 2 = *sometimes*, 3 = *often*, and 4 = *almost always*) to assess the adaptive emotion-regulation skills described in the introduction. Each skill is assessed with a subscale of three items. The items of the ERSQ are preceded by the stem, "Last week..." Items include: "I paid attention to my feelings" (*awareness*); "I was clear about what emotions I was experiencing" (*clarity*); "my physical sensations were a good indication of how I was feeling" (*sensations*); "I was aware of why I felt the way I felt" (*understanding*); "I was able to influence my negative feelings" (*modification*); "I accepted my emotions" (*acceptance*); "I felt I could cope with even intense negative feelings" (*tolerance*); "I did what I had planned, even if it made me feel uncomfortable or anxious" (*readiness to confront distressing situations*); and "I supported myself in emotionally distressing situations" (*self-support*). In addition to the subscales corresponding to the skills described above, the ERSQ consists of a total score which is computed as the average of all items.

The ERSQ has displayed adequate-to-good internal consistencies (Cronbach's $\alpha = .90$ for the total score, and .68 - .81 for the subscales) and adequate retest-reliability ($r_{tt} = .75$ for the total score, and .48-.74 for the subscales); results from exploratory and confirmatory factor analyses provide support for the assumed dimensionality of the measure, and sensitivity to change has been demonstrated in multiple samples of patients undergoing psychotherapeutic treatment; consistent with theoretical expectations, all scales have been shown to be positively associated with measures of well-being and mental health and negatively associated with measures of ill-being, psychopathology and emotion-regulation deficit (Berking, Wupperman, et al., 2008; Berking & Znoj, 2008). For example, when compared with similar subscales from the Dysfunctional Emotion Regulation Scale (DERS; Gratz & Roemer, 2004; German version: Ehring, Tuschen-Caffier, & Berking, 2010) in a sample of college students ($N = 150$; Berking, 2010b), the ERSQ subscale *awareness* was highly correlated with the DERS *lack of awareness* ($r = -.71$), ERSQ *clarity* was correlated with DERS *limited clarity* ($r = -.68$), ERSQ *acceptance* was correlated with DERS *nonacceptance* ($r = -.64$), and *compassionate self-*

support was correlated with DERS *limited access to emotion-regulation strategies* ($r = -.68$). In addition, ERSQ *acceptance* was negatively related to the *suppression* subscale ($r = -.70$) of the Meta-Emotion Regulation Scale (Mitmansgruber, Beck, Höfer, & Schüssler, 2009); and ERSQ *modification* was related to the *expectancy of successfully regulating negative affect* ($r = .72$), as assessed by the Negative Mood Regulation Scale (Catanzaro & Mearns, 1990; German version: Backenstrass, Pfeiffer, Schwarz, Catanzaro, & Mearns, 2008). In the present study, internal consistency was high for the ERSQ total score (police officers: $\alpha = .89$; controls: $\alpha = .82$) and acceptable or good for the subscales (police officers: $\alpha = .70 - .86$; controls: $\alpha = .68 - .89$), with the exception of *acceptance* in the community-based control sample ($\alpha = .39$).

Negative and Positive Affect

We assessed negative and positive mood at all assessment points because: (a) negative and positive affect are important indicators of successful emotion regulation, and (b) controlling for negative affect is necessary to ensure that the use of adaptive emotion-regulation skills is not simply the result of having less-intense negative emotions with which to cope. To assess negative and positive mood, we used the Positive and Negative Affect Scales (PANAS; Watson, Clark, & Tellegen, 1988; German version: Krohne, Egloff, Kohlmann, & Tausch, 1996). The PANAS is a self-report scale that consists of 20 items describing positive and negative affective states. Participants utilize a 5-point Likert-type scale (0 = *not at all* to 4 = *almost always*) to rate the frequency of these states in a given time period. For this study, we asked participants to report the frequency of affective states during the previous week, in order to cover the same time period as assessed by the ERSQ. The PANAS is a widely used instrument that has shown high reliability and validity (Krohne et al., 1996). In the current study, internal consistency was high for both the positive and the negative affect subscales (police officers: Cronbach's $\alpha = .88, .91$; controls: $\alpha = .87, .86$).

TRAINING OF EMOTION-REGULATION SKILLS

All police officers participated in a slightly abbreviated version of the iTEC. The core of the training consists of a set of empirically validated emotion-regulation skills that are practiced intensively in each session. In addition, between-session practice assignments include at least three short (5 to 10 seconds) and one long (15 to 30 minutes) emotion-regulation exercise per day. The training begins with a thorough outline of the biological and

psychological origins, functions, mechanisms, and possible risks and benefits of emotional reactions. Integrating findings and pictures from the affective neurosciences, seven neural “vicious cycles” are presented that are deemed important for long-term maintenance of negative emotions (e.g., activation of the amygdala can increase muscle tension and vice versa). For each vicious cycle, a technique is presented that is designed to interrupt the cycle. These skills include: (a) muscle relaxation, (b) breathing relaxation, (c) nonjudgmental perception of emotions, (d) acceptance and tolerance of emotions, (e) compassionate self-support (mood-repair strategies to reduce the likelihood that impulsive-avoidance behaviors disrupt effortful attempts to regulate one's emotion), (f) identification of the causes of one's emotional reaction, and (g) active modification of emotions (according to a five-step problem-solving model).

By addressing several issues not addressed by existing interventions, the iTEC program offers a unique contribution to the field of emotion-regulation treatment. First, compared to the typical stress-management trainings (e.g., Meichenbaum, 1985), iTEC focuses on methods of dealing with specific emotions experienced in distressing situations (i.e., response-focused emotion-regulation, according to the terminology of Gross, 1998), as opposed to prevention and coping focused on general stress responses. Second, unlike programs rooted in the tradition of cognitive behavioral therapy (CBT), the iTEC focuses more strongly on the skills of accepting and tolerating negative emotions. Third, the training addresses the need for regular skills practice in a more systematic and elaborated way than does CBT or dialectical behavior therapy (DBT). For example, patients are taught a specific set of skill-building exercises; they develop their own daily training regimen to practice the skills; they are provided audio-CDs that guide them through skill-building exercises; and they can choose to receive text messages or e-mails that suggest 140 short exercises throughout the 6-week training period. Finally, compared to mindfulness-based programs, iTEC addresses a broader range of skills, including unambiguously change-oriented strategies. In addition, the iTEC training rationale is based on theories and findings of the affective neurosciences, thereby utilizing a paradigm that is popular and strongly rooted in the Western cultures, which may foster compliance among participants skeptical of psychological/spiritual interventions, while also facilitating interdisciplinary collaboration among providers.

The standard iTEC-program consists of 12 modules, each lasting 1.5 hours. Due to organiza-

tional constraints, the iTEC-program in the current study was shortened to twelve 45-minute sessions (by assigning as homework some exercises and psychoeducational components that are usually practiced or administered in the training sessions). Training was delivered on 3 days (with 4 sessions per day), with a 14-day interval between each training day. Groups were led by a graduate student with 5 years of university training in (clinical) psychology who was intensively trained in the iTEC-program (40 hours total of iTEC-trainer training over a 1-year period, including leading a training group with college students). The graduate student also received scheduled weekly supervision by the licensed psychologist who authored the training manual, with additional support available upon request from the supervisor and the police department's senior psychologist (this additional support was not utilized).

PROCEDURES

To identify specific emotion-regulation difficulties in police officers, officers' pre-training self-reports of emotion regulation were compared to those of the community-based control group (see *Participants*). In order to evaluate the effects of iTEC on emotion-regulation skills of police officers, all recruited officers were assigned to participate in one of three emotion-regulation training groups ($n=11, 12, 8$, respectively; see Fig. 1). Assessment of emotion regulation took place immediately prior to and following training. For Groups 2 and 3, an additional point of assessment was scheduled 6 weeks prior to the training. The resulting time period without training, which entirely overlapped with the training phase of the previous group, was used as a within-subject control condition. All procedures involved in the study were consistent with the generally accepted standards of ethical practice.

DATA ANALYTIC STRATEGIES

To compare emotion-regulation skills and affect levels reported by police officers versus controls, independent sample t-tests (one-way) were used. Pre-post differences within the training condition were tested with repeated-measure ANOVAs. Finally, to compare changes in the ERSQ and the PANAS in the training condition versus the wait-list condition, the interaction of Time \times Condition was tested with two-factor repeated-measure ANOVAs. In these analyses, we included neither age nor sex as covariates as neither of these variables was significantly associated with successful skill application or differed between groups. For all comparisons, sample size was determined in order to have

sufficient power ($\beta=0.80$) to detect moderate-to-large effects while using a conventional alpha level ($\alpha=0.05$, one-tailed test) for all analyses. As this was an exploratory study with a comparatively small sample size, moderate nonsignificant effect sizes will also be reported. SPSS 14.0 (SPSS, 2005) was used for all computations.

Results

Of the 82 sets of questionnaires given to participants, 4 (4.8%) were not returned and could not be included in the analyses (see Fig. 1 for number of noncompleted questionnaires within each assessment period). With regard to pre-training emotion-regulation skills, police officers reported significantly less adaptive regulation of negative emotions than did matched community controls, as denoted by the officers' significantly lower total scores on the ERSQ (see Table 1); the effect size of $d=.53$ indicated a medium effect. With regard to specific skills, significant group differences were found for the subscales *acceptance*, *tolerance*, *compassionate self-support*, and *readiness to confront situations that cue negative emotions*. All significant effects for the subscales are moderate-to-large. The groups did not differ in either positive or negative affect.

As shown in Table 2, the total ERSQ scores in the police sample increased significantly during the training. The effect size of $\eta^2=.18$ indicated a large effect. Significant gains also resulted for the

Table 1
Comparison between Police Officers and Controls

	Police officers		Controls		$t_{(1,59-60)}$	d
	M	SD	M	SD		
Awareness	2.48	0.77	2.67	0.78	0.92	0.25
Clarity	2.73	0.74	2.91	0.97	0.79	0.21
Sensation	2.61	0.84	2.72	0.81	0.51	0.13
Understanding	2.65	0.92	2.81	0.66	0.79	0.20
Modification	2.22	0.77	2.24	0.83	0.11	0.03
Acceptance	2.60	0.67	2.98	0.54	2.45**	0.63
Tolerance	2.39	0.84	2.81	0.73	2.1*	0.54
R. to confront	2.31	0.83	2.77	0.81	2.22*	0.56
Self-support	2.23	0.78	2.73	0.75	2.61**	0.65
ERSQ _{total score}	2.46	0.60	2.74	0.45	2.12*	0.53
Positive Affect	2.53	0.65	2.35	0.69	-1.04	-0.27
Negative Affect	0.91	0.73	0.93	0.73	0.10	0.03

Note. For the police sample, the earliest available pre-treatment score was used. R. to confront=Readiness to confront distressing situations; ERSQ=Emotion Regulation Skill Questionnaire. $d \approx 0.2/0.5/0.8$ indicates a small/moderate/large effect (Cohen, 1988).

* $p < .05$. ** $p < .01$.

Table 2
Comparison between pre- and post-training ERSQ scores

	Pre-training		Post-training		$F_{(1,25-27)}$	η^2
	M	SD	M	SD		
Awareness	2.48	0.80	2.74	0.77	3.36(*)	0.11
Clarity	2.73	0.72	2.80	0.76	0.92	0.04
Sensation	2.54	0.85	2.67	0.82	0.55	0.02
Understanding	2.55	0.93	2.74	0.73	1.53	0.06
Modification	2.41	0.72	2.24	0.71	0.60	0.02
Acceptance	2.55	0.60	2.83	0.54	5.90*	0.19
Tolerance	2.38	0.70	2.85	0.64	19.12***	0.43
R. to confront	2.23	0.88	2.39	0.96	0.87	0.03
Self-support	2.34	0.85	2.51	0.70	1.85	0.07
ERSQ _{total score}	2.45	0.64	2.64	0.57	5.63*	0.18
Positive Affect	2.55	0.54	2.76	0.60	11.39**	0.30
Negative Affect	0.78	0.53	0.83	0.55	0.06	0.00

Note. ERSQ=Emotion Regulation Skill Questionnaire; R. to confront=Readiness to confront distressing situations. $\eta^2 \approx 0.01/0.06/0.14$ indicates a small/moderate/large effect. (* $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$).

subscales *acceptance* and *tolerance* (and a trend for *awareness*). Effect sizes were moderate for *awareness*, *compassionate self-support* and *understanding*; and large for *acceptance* and *tolerance*. Thus, participation in the training significantly enhanced two of the four skills for which officers reported less application than did controls (*acceptance* and *tolerance*). Significant and large effects were also demonstrated for gains in positive affect. Contrastingly, there were no significant changes in negative affect. To control for the passage of time and for external events that might have affected outcome variables, gains during training ($N=20$) were compared to gains during a waiting period ($N=19$) for a subgroup of officers. Preliminary analyses indicated that there were no significant differences between pre-scores of the treatment condition and the wait-list-control condition with regard to the ERSQ-total score, the ERSQ-sub-scales, and the PANAS.

As shown in Table 3, there was a significant Time \times Condition interaction on the ERSQ total score. Changes in the ERSQ total score were significantly greater in the treatment condition than in the control condition (see Fig. 2).

The effect size of $\eta^2=.13$ for this interaction indicated a moderate-to-large effect. Moreover, before the training, skills application reported by police officers was below the 95% confidence interval of skills application reported by the community control condition ($CI_{ERSQ\ total} = 2.58 - 2.90$). After the training, reported skills application increased to within the 95% confidence interval of the community controls. The effect size for the difference

Table 3
Comparison between Training and Waitlist Control Condition

	iTEC				WLC				Time \times Condition	
	Pre		Post		Pre		Post		$F_{(1,34-37)}$	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Awareness	2.42	0.89	2.73	0.82	2.67	0.67	2.67	0.70	2.63	0.07
Clarity	2.81	0.71	2.87	0.83	2.67	0.76	2.63	0.70	0.36	0.01
Sensation	2.56	0.94	2.70	0.82	2.74	0.63	2.63	0.60	1.05	0.03
Understanding	2.52	1.02	2.82	0.72	2.74	0.75	2.63	0.75	3.19(*)	0.08
Modification	2.39	0.78	2.42	0.69	2.17	0.69	2.46	0.55	1.60	0.04
Acceptance	2.56	0.67	2.92	0.54	2.56	0.62	2.52	0.43	5.45*	0.14
Tolerance	2.51	0.73	3.05	0.51	2.28	0.83	2.22	0.51	9.18**	0.21
R. to confront	2.35	0.93	2.57	1.04	2.30	0.59	2.13	0.63	1.47	0.04
Self-support	2.32	0.97	2.68	0.73	2.22	0.40	2.43	0.51	1.21	0.03
ERSQ _{total score}	2.47	0.71	2.75	0.60	2.48	0.40	2.48	0.45	5.13*	0.13
Positive Affect	2.55	0.51	2.80	0.55	2.64	0.69	2.63	0.54	3.53(*)	0.09
Negative Affect	0.78	0.54	0.78	0.58	1.00	0.81	0.75	0.47	0.99	0.03

Note. iTEC=Integrative Training of Emotional Competencies. WLC=Waitlist Control Condition. R. to confront=Readiness to confront distressing situations. ERSQ=Emotion Regulation Skill Questionnaire. $\eta^2 \approx 0.01/0.06/0.14$ indicates a small/moderate/large effect. (*) $p < .10$. * $p < .05$. ** $p < .01$.

when compared with the community controls reduced from $d = .53$ to $d = .19$. No such change occurred during the wait-list condition.

With regard to comparison of specific skills in this within-subject variation of conditions, significantly greater gains were found in the training condition for the subscales *acceptance* and *tolerance* (with a trend for *understanding*). Effect sizes were large for *acceptance* and *tolerance*, and moderate for *awareness* and *understanding*. A trend was also found for positive affect with a moderate effect. There was no significant Time \times Condition interaction for negative affect.

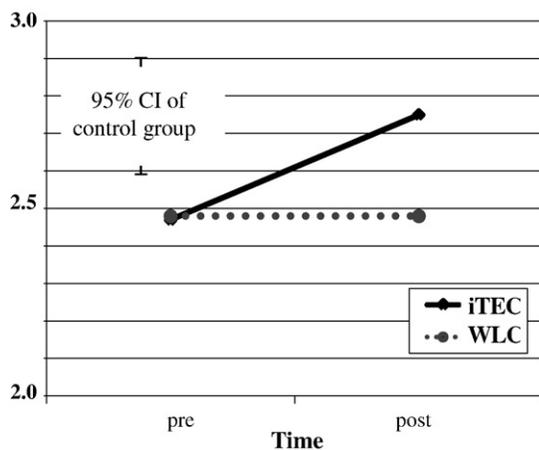


FIGURE 2 Interaction between time and condition for the ERSQ total score. Y-Axis=ERSQ total mean score. CI=Confidence Interval of ERSQ total mean score in the control sample. iTEC=Integrative Training of Emotional Competencies. WLC=Waitlist Control Condition.

Discussion

The main purpose of the present study was to investigate whether an intensive emotion-regulation training can improve the emotion-regulation skills of police officers. Additionally, explorative analyses were conducted to identify specific emotion-regulation deficits displayed by police officers and to investigate whether participation in the training can particularly enhance skills with which the officers display difficulties. The results support the primary hypothesis: Officers' emotion-regulation skills improved significantly after the intensive emotion-regulation training. Moreover, officers initially reported significantly less successful emotion regulation than did matched community controls, but these differences ceased to exist after the training. Thus, the training appears to have "normalized" police officers' emotion-regulation skills. The lack of significant group and pre-post differences in negative affect indicates that differences in reported emotion regulation are not due to differences in the intensity of negative affect; instead, they may indicate differences in the appraisal of one's ability to effectively cope with negative emotions.

With regard to the exploratory analyses of specific skills, police officers reported having particular difficulties with (a) accepting negative emotions, (b) tolerating negative emotions, (c) supporting themselves in emotionally challenging situations, and (d) confronting situations that cue negative emotions in order to attain important goals. These results are largely congruent with previous findings that police officers view negative emotions as a sign of weakness to be avoided, thus potentially perceiving activities

such as acceptance, self-encouragement, or self-soothing as inappropriate (Amaranto et al., 2003; Pogrebin & Poole, 1995). With regard to deficits in the abilities to accept and/or tolerate negative emotions, these officers may have had limited knowledge about specific behaviors that are associated with these skills. Therefore, they may have associated acceptance and tolerance with concepts such as loss of control, helplessness, and “giving up.” Accepting and tolerating negative emotions may thus be perceived as threatening, which would explain the increased tendency to avoid and deny situations that cue negative emotions. However, as negative emotions cannot always be avoided, the ability to effectively utilize the full range of emotion-regulation skills—including acceptance, tolerance, self-support, and confronting challenging situations—appears to be crucial for the maintenance of mental health in a variety of clinical and community populations (e.g., Berking, Wupperman, et al., 2008; Gilbert, Clarke, Hempel, Miles, & Irons, 2004; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996; Leahy, 2002).

With regard to the effects of the training on specific skills, exploratory analyses suggest that iTEC particularly enhanced the abilities to accept and tolerate negative emotions. However, contrary to expectations, there were no significant improvements in compassionate self-support. Thus, there is partial evidence that the training enhances skills that police officers find particularly difficult to apply. Interestingly, the training was also associated with an increase in positive affect. A possible explanation of this finding is that the ability to deal effectively with negative emotions (which includes accepting them if necessary) may prevent these emotions from exerting a detrimental effect on positive emotions. In addition, the emotion-regulation training includes exercises aimed at (a) increasing awareness/appreciation of “positive” emotions and (b) intentionally engaging in pleasurable activities that can facilitate positive emotions. Such exercises may have also contributed to the increase in positive affect.

LIMITATIONS AND FUTURE DIRECTIONS

First, the present sample was comparatively small and consisted of officers who volunteered for a psychological intervention; moreover, we were unable to assess current and life-time history of psychopathology due to organizational constraints. Therefore, it is unclear whether results can be generalized to all police officers. Future studies should replicate these findings with larger sample sizes, a more rigorous control of a potential selection bias, and with a thorough assessment of

psychopathological status during intake procedures. Larger samples would also allow for reliable tests of the small and moderate effects that were not significant in this study, as well as for more rigorous measures to control for Type I error.

Second, the application of emotion-regulation skills was assessed exclusively by self-report, and one of the ERSQ subscales (*acceptance*) demonstrated low internal consistency in the control group. Future studies should include other, potentially more objective, indicators of successful emotion regulation, such as observer ratings, standardized tests, or experimental paradigms. Third, in order to clarify whether effects are due to the particular contents of the training versus general therapeutic factors, future studies should include an active-training condition that controls for nonspecific effects. Fourth, although research in clinical and community populations suggests that improvements in general emotion regulation (assessed with the ERSQ) are associated with improvements in other areas of mental health (Berking, Orth, et al., 2008; Berking, Wupperman, et al., 2008; Berking & Znoj, 2008), future studies should include more specific indicators of mental-health outcomes to confirm that these associations exist in police officers. These indicators should assess for a broad range of psychopathology—to clarify whether general emotion-regulation skills facilitate improvements in a wide variety of disorders, as proposed by Berking, Wupperman, and colleagues (2008), or whether they are particularly helpful for overcoming specific disorders. Finally, future studies should include multiple follow-up assessments in order to evaluate the stability of the outcome effects, as well as the potential protective effects of enhanced emotion-regulation skills, particularly when individuals are confronted with situations that trigger intensive negative emotions.

Strengths of the study include the investigation of a broad range of specific emotion-regulation skills which have been shown to predict mental well-being in clinical and community populations (Berking, Orth, et al., 2008; Berking, Wupperman, et al., 2008). In addition, the use of a time-staggered design suggests that changes are not due to the passage of time or to external events that may have facilitated successful emotion regulation during the time of the training. Finally, the study investigated the effects of the training in an at-risk population that is likely to share relevant features with similar populations, such as fire-fighters or soldiers. Therefore, the implications of the findings may generalize to additional groups that are often confronted with situations cueing negative

emotions, but who may have deficits in a “softer” acceptance-based approach to emotion regulation.

In sum, this study provides preliminary evidence that police officers have difficulties in specific domains of emotion-regulation, and that at least some of these deficits can be reduced with specific interventions. These findings suggest that an emphasis on emotion-regulation skills may be an important component for programs aimed at preventing mental-health problems in police officers.

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