Finding the golden lining
Assessment, self-help and treatment after trauma
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Gender and age differences in trauma and PTSD among Dutch treatment-seeking police officers

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**Abstract**

**Background:** Little is known about how age and gender are associated with PTSD symptoms and traumatic experiences in treatment seeking police officers.

**Methods:** In this study, we examined 967 diagnostic files of police officers seeking treatment for PTSD.

**Results:** Six hundred twelve (63%) of the referred police officers were diagnosed with PTSD ($n = 560$) or partial PTSD ($n = 52$). Police officers reported on average 19.5 different types of traumatic events (range 1-43). Those who experienced a greater variety of traumatic events suffered from more PTSD symptoms. Also, women reported more often direct life threatening or private events as their index trauma than men and suffered from more PTSD symptoms than their male colleagues.

**Conclusions:** Results indicate that police officers experience a considerable number of different traumatic events, which is significantly associated with PTSD symptoms. The results highlight the importance of early detection of PTSD symptoms in the police force.
Introduction

The police force is one of the few unique professions where employees are continuously exposed to numerous stressful incidents throughout their careers (Carlier et al., 1997; Evans et al., 2013; Stephens and Miller, 1998). This repeated exposure to potentially traumatic events (PTE's) may result in a heightened risk for developing posttraumatic stress disorder (PTSD) (Breslau et al., 1999; Stephens and Miller, 1998; Vasterling et al., 2010) which is characterized by re-experiencing the traumatic event, avoidance symptoms, negative alterations in cognitions and emotions, and hyperarousal symptoms (American Psychiatric Association, 2013). Among the police, point prevalence rates vary between 7-13% for current PTSD (Carlier et al., 1997; Maia et al., 2007; West et al., 2008) and may be as high as 34% for subthreshold current PTSD (Carlier and Gersons, 1995). PTSD symptoms are often profoundly impairing and can maintain years after the traumatic event (Breslau et al., 1998; Green et al., 1990). Moreover, comorbidity rates between PTSD and other mental diseases like depression, anxiety disorders, somatisation, and alcohol and drug abuse are high (Andreski et al., 1998; Kilpatrick et al., 2003). PTSD symptoms may jeopardize police performance and consequently endanger the safety of citizens.

Currently, little is known about the substantial group of police officers that suffers from PTSD symptoms. In general, it is broadly recognized that police officers are exposed to a great variety of work-related PTE’s (Asmundson and Stapleton, 2008; Chopko and Schwartz, 2012). Although it has been shown that this repeated exposure to PTE's can result in the development of PTSD symptoms in police officers (Asmundson and Stapleton, 2008; Stephens and Miller, 1998; Vasterling et al., 2010), the impact of the exposure to a variety of PTE's on symptom expression in police officers who suffer from PTSD symptoms is unclear. Knowledge on the variety of endured events and symptom expression in police officers with PTSD symptoms provides insight into this group and may contribute to the treatment of these police officers.

A factor that may be closely related to the variety of experienced PTE's among the police is age; older police officers may generally have experienced more PTE's than younger police officers. On the one hand, the potential accumulation of PTE's throughout the careers of older police officers could imply that older police officers experience more PTSD symptoms than their younger colleagues. Three previous studies (Bowler et al., 2010; Darenburg et al., 2006; Renck et al., 2002) partially support this hypothesis. The first study found that older police officers had higher prevalence of PTSD than younger police officers 2 to 3 years after the 2001 World Trade Center terrorist attack. Also, the last two studies showed that total PTSD symptoms tended to increase with age in a random sample of police officers.
(Darenburg et al., 2006) and that the oldest police officers reported more total PTSD symptoms than their younger colleagues 18 months after a rescue operation (Renck et al., 2002). On the other hand, we may speculate that the accumulation of PTE’s could lead to increased hardiness against extreme stressful situations resulting in less PTSD symptoms in older police officers. So, both hypotheses may suggest age differences in symptom expression among police officers suffering from PTSD.

As most studies on trauma in the police force solely focus on male police officers, knowledge about female police officers is scarce. However, the number of female police officers is increasing worldwide (Bureau of Justice Statistics, 2007; National Police, 2013). In the general population, women have two to three times higher rates of PTSD compared to men (De Vries and Olff, 2009; Kessler et al., 1995) and tend to use more emotionally driven and avoidant coping styles than men (Matud, 2004; Olff et al., 2007). These findings may indicate gender differences in the expression of PTSD symptoms, with women potentially showing more avoidance symptoms than men. Currently, little is known about gender differences in PTSD symptoms among police officers, and the police studies that have been conducted show conflicting results (Bowler et al., 2010; Pole et al., 2001; Tehrani, 2016). A recent study found that in a sample of police officers working with internet child abuse, female police officers reported more PTSD symptoms and secondary traumatic stress symptoms than their male colleagues (Tehrani, 2016). However, the higher prevalence of PTSD in women is not consistently found in police studies (Bowler et al., 2010; Pole et al., 2001). In addition, the police force is still a male dominated occupation where female police officers may be treated differently and may be exposed to different stressful events than their male colleagues (Brown and Fielding, 1993; Burke and Mikkelsen, 2004; Santos et al., 2009). Finally, most previous police studies were performed in heterogeneous samples and not focused on female and male police officers who already developed PTSD symptoms. In all, the results regarding trauma exposure of male and female police officers are inconsistent (Brown and Fielding, 1993; Burke and Mikkelsen, 2004; Santos et al., 2009) and it is unclear if there are gender differences in the expression of PTSD symptoms.

In sum, there is a lack of knowledge about the traumatic experiences and symptom expression in police officers with PTSD symptoms and the potential gender and age differences. The current study aims to address these gaps in the literature by investigating trauma, PTSD, and the influence of gender and age in a large sample of treatment seeking police officers. We hypothesized that (a) male and female police officers would experience different types of trauma; (b) female police officers would have more PTSD symptoms than male police officers, and that (c) older police officers would have more PTSD symptoms than younger police officers.
Methods

Participants
The sample consisted of police officers seeking treatment for trauma-related symptoms at the Academic Medical Center police-outpatient clinic between 1995 and 2011 (Smit et al., 2013). Nine hundred sixty-seven police officers were seen for a diagnostic interview, of whom 612 (63%) were diagnosed with PTSD ($n = 560$) or partial PTSD ($n = 52$). Fifty participants were omitted from further analyses because of incomplete PTSD scores, leaving the data of 562 police officers with full-blown PTSD ($n = 511$) or partial PTSD ($n = 51$) for statistical analyses.

The 562 police officers, 379 men and 183 women, were on average 38 years old ($SD = 10.1$) and the mean number of years in the police force was 13.9 ($SD = 10.3$). The majority had a partner (85%, of whom 13% were police officers as well), and 60% had children. Most male police officers were 41 years and older, whereas most of the female police officers were 30 years or younger (Table 1).

Table 1. Age categories by gender (in numbers and percentages)

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Men</th>
<th>Women</th>
<th>Total sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 30</td>
<td>66</td>
<td>93</td>
<td>159</td>
</tr>
<tr>
<td>31-40</td>
<td>108</td>
<td>57</td>
<td>165</td>
</tr>
<tr>
<td>41-50</td>
<td>125</td>
<td>26</td>
<td>151</td>
</tr>
<tr>
<td>≥ 51</td>
<td>80</td>
<td>7</td>
<td>87</td>
</tr>
<tr>
<td>Total</td>
<td>379</td>
<td>183</td>
<td>562</td>
</tr>
</tbody>
</table>

Measures and Procedure
The (mental) health of police officers is usually assessed by the occupational physician. In case trauma-related symptoms are suspected, the occupational physician refers the police officer to the police-outpatient clinic. Nearly all police officers were referred to the police-outpatient clinic by an occupational physician (91%). The police-outpatient clinic is an independent, national center in the Netherlands that is specialized in investigating trauma-related symptoms in police officers. At the police-outpatient clinic, participants were seen for an extensive diagnostic interview performed by highly experienced and independent clinical diagnosticians and psychiatrist in which information was gathered on demographics, life time traumatic experiences (work-related and private), index trauma, PTSD symptoms and other mental disorders. All assessments were completed at the same day. After the
diagnostic interview, participants were diagnosed and were given a treatment indication (treatment was provided for both private and work-related traumatic incidents). This study was conducted in compliance with ethical principles. As the current study is a retrospective file study, the Medical Ethical Committee of the Academic Medical Center exempted this study from formal review.

**Demographic variables**
A semi-structured interview was used to gather demographic information including age, police work experience, marital status, and children.

**Work-related traumatic experiences**
The Police Life Events Schedule (PLES) (Carlier and Gersons, 1992) is a semi-structured interview to assess 42 police work-related potential traumatic events (e.g., shooting incidents, fatal accidents, suicides etc.). For each event, participants indicate if they experienced the particular event (yes/no) and the year in which the event took place.

**General traumatic experiences**
The Trauma Experience Questionnaire (TEQ) (Carlier et al., 2000) is a semi-structured interview about lifetime traumatic events. The TEQ assesses 22 (private) potential traumatic events such as a severe accident, being abused or experiencing the death of a loved one. If a particular event is endorsed, participants indicate the year and duration of the event, if they were injured, and if they had perceived their life to be in danger. In addition, participants were asked to give a short description of the event.

**Index trauma**
After completing the PLES and TEQ, the clinical diagnostician asked the participants which of the experienced traumatic events currently had the most negative impact on their lives (‘index trauma’). For the purpose of this study, each index trauma was categorized by the researchers regarding trauma circumstances in ‘work-related’ or ‘private’ trauma and regarding type of trauma in ‘direct life threatening’ (e.g., being assaulted or injured) or ‘confrontational’ (e.g., finding a body, witnessing a serious accident) trauma. Therefore, each index trauma is being described in terms of trauma circumstances (private or work-related) and in terms of trauma type (direct life threatening or confrontational).

**Posttraumatic stress disorder**
Two well-established instruments were used to assess PTSD: the Structured Interview for PTSD (SI-PTSD) (Davidson et al., 1989) from 1995 until 2007, and the Clinician-Administered PTSD Scale (CAPS) (Blake et al., 1995) from 2007 until 2011. Both instruments are semi-
structured interviews and measure all 17 DSM-IV PTSD symptoms which correspond to the three PTSD symptom clusters; cluster B (re-experiencing); cluster C (avoidance/numbing); cluster D (hyperarousal). Both the SI-PTSD and the CAPS yield a dichotomous score for each PTSD symptom (present/absent). The item responses can be used to determine if the respondents’ PTSD symptoms meet the DSM-IV criteria for PTSD diagnosis (≥ 1 symptom in cluster B, ≥ 3 symptoms in cluster C and ≥ 2 symptoms in cluster D) (American Psychiatric Association, 1994; American Psychiatric Association, 2000) and can be summed up to a total of present symptoms (possible range 0-17). The Dutch versions of these instruments are reliable and valid (Hovens et al., 1994; Davidson et al., 1997).

Other mental disorders
The Dutch version (Van Groenestijn et al., 1999) of the Structured Clinical Interview for DSM-IV (SCID-I/P) (Spitzer et al., 1996) was used to diagnose Axis I disorders other than PTSD. The SCID-I/P measures the presence of mood, anxiety, somatoform, eating, psychotic and substance related disorders.

Statistical Analyses
First, descriptive statistics were presented for gender, age, marital status, children, traumatic events, circumstances and type of index trauma, PTSD symptoms, and comorbidity. The total sample was subsequently divided into four age categories: 19 to 30 years, 31 to 40 years, 41 to 50 years, and 51 years and older (cf. Renck et al., 2002). Furthermore, the sample was divided into four categories regarding the number of experienced different types of traumatic events: 1-10, 11-20, 21-30 or 31-43 events. These numbers reflect the number of different types of experienced traumatic events based on the TEQ and the PLES and not the total number of experienced traumatic events in general. Variance ratios were calculated to check for unequal variances. Homogeneity of variance was assumed by a ratio less than 2. Correlation matrices were checked for collinear relationships between the variables under study.

Second, gender differences in terms of age, work experience, and total number of different types of traumatic events were checked with independent samples t-tests. Chi-square statistics were used to identify gender and age differences for the dichotomous variables circumstances of index trauma (private or work-related), type of index trauma (direct life threatening or confrontational), and the presence of a comorbid mood disorder.

Third, taking the mutual relationship between all the independent variables into account, a series of four-way ANOVA’s was conducted with the total number of PTSD symptoms and the total number of PTSD symptoms per cluster, respectively, as the dependent variable and
gender, age, number of different traumatic events (the latter two variables in aforementioned categories), and type of index trauma (direct life threatening or confrontational) as the independent variables. A custom model was applied to calculate the main effects of the independent variables and the two-way interactions between gender x age, gender x type of index trauma and gender x number of different traumatic events.

Results

Traumatic experiences and PTSD symptoms
The participants reported on average a total of 19.5 different types of traumatic events ($SD = 8.3$, range 1-43), of which 16.8 were work-related ($SD = 7.8$, range 0-37) and 2.7 were related to private life ($SD = 2.0$, range 0-10). There was a positive correlation between age and work experience ($r = .819$, $p < .001$) and between age and the number of different types of traumatic events ($r = .396$, $p < .001$). Table 2 shows the most commonly experienced types of work-related traumatic events. The most commonly experienced types of private events were being threatened by someone or a group (37.1%), experiencing a serious accident (30.4%), and losing a loved one due to an accident, disaster, crime, war or suicide (24.3%).

Index traumas were mostly work-related (68.5%) and for a minority related to private life (12.5%). A considerable proportion of participants did not report a single (specific) index trauma, but reported an accumulation of work-related (12.5%) or private (0.5%) traumatic events. For 6% of the participants, it was unclear if the index trauma was work-related or related to private life. Seventy percent of the work-related index traumas concerned confrontational situations such as witnessing a serious accident or finding a body, the other 30% of the work-related index traumas concerned direct life threatening situations such as being assaulted or injured by someone.

On average, participants endorsed 10.2 PTSD symptoms ($SD = 2.5$, range 3-17). Half of the participants were diagnosed with a second disorder, mainly a mood disorder such as depression (87.2%). A third disorder, mainly a substance use, anxiety, or mood disorder, was present in 5.5% of the participants.
Table 2. Top 10 most commonly experienced types of work-related events

<table>
<thead>
<tr>
<th>Traumatic event (work-related)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious accident (adults)</td>
<td>85.2</td>
</tr>
<tr>
<td>Finding a body after natural death</td>
<td>83.9</td>
</tr>
<tr>
<td>Confrontation with a mentally disturbed person</td>
<td>83.9</td>
</tr>
<tr>
<td>Finding a body after suicide</td>
<td>72.2</td>
</tr>
<tr>
<td>Controlling a riot or crowd, or executing police charges in which persons were injured, weapons were pulled or serious threat was present</td>
<td>69.2</td>
</tr>
<tr>
<td>Confrontation with violence, e.g., being threatened with a knife</td>
<td>67.9</td>
</tr>
<tr>
<td>Police appearance in a case of (sexual) abuse of an adult</td>
<td>66.1</td>
</tr>
<tr>
<td>Colleague being injured during work</td>
<td>63.7</td>
</tr>
<tr>
<td>Failed reanimation of a person</td>
<td>63.2</td>
</tr>
<tr>
<td>Accident where victim lies underneath a train</td>
<td>62.2</td>
</tr>
</tbody>
</table>

Note: in percentage the number of police officers who experienced the traumatic event

Gender and age differences

Men were older than women, $M = 41.1$ ($SD = 9.6$) vs. $M = 32.0$ ($SD = 8.3$), $t(560) = 11.07$, $p < .001$, and had more work experience than women, $M = 16.7$ years ($SD = 10.7$) vs. $M = 8.2$ years ($SD = 6.5$), $t(525) = 11.48$, $p < .001$. Men experienced on average more different traumatic events than women, $M = 21.3$ ($SD = 8.1$) vs. $M = 15.4$ ($SD = 7.1$), $t(517) = 8.00$, $p < .001$. With regard to the index trauma, women more often reported a private event and a direct life threatening situation (e.g., being assaulted or injured) than men (Table 3). A comorbid mood disorder was equally present across men and women (Table 3). There were no age differences in terms of the type of index trauma and the diagnosis of a comorbid mood disorder.

Analysis of variance showed that the number of different traumatic events had a significant main effect on total PTSD symptoms, such that the participants who had experienced the most different types of traumatic events (31-43 events) had more PTSD symptoms ($M = 11.2$, $SD = 2.1$) than the participants in all other categories (1-10 events: $M = 9.7$, $SD = 2.8$; 11-20 events: $M = 10.1$, $SD = 2.6$ and 21-30 events: $M = 10.0$, $SD = 2.4$, all $p < .05$ (Table 4).

In addition, gender had a significant main effect on total PTSD symptoms, with women reporting more PTSD symptoms than men, estimated means $M = 10.4$ ($SD = 2.5$) vs. $M = 10.1$ ($SD = 2.5$), $p < .05$. Further, there was a positive significant main effect of age on total PTSD symptoms, but there were no significant post-hoc effects. Also, there was a significant interaction effect between gender and age. Post-hoc analyses showed that older women in the age category of 41-50 years had more PTSD symptoms than younger women in the age category of 31-40 years, $M = 11.7$ ($SD = 2.1$) vs. $M = 9.9$ ($SD = 2.8$), $p < .05$. The main effect of
trauma type and the interaction terms gender x number of traumatic events and gender x trauma type were not significant (Table 4).

For the separate PTSD clusters, there was only a significant main positive effect of age on total avoidance symptoms, $F(3, 503) = 1.14, p < .05$, but there were no significant post-hoc effects.

**Table 3.** Circumstances and type of index trauma and comorbid mood disorder by gender

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>%</th>
<th>Women</th>
<th>%</th>
<th>$X^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circumstances of index trauma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work-related</td>
<td>315</td>
<td>83.1</td>
<td>139</td>
<td>76.0</td>
<td>8.79</td>
<td>.00</td>
</tr>
<tr>
<td>Related to private life</td>
<td>39</td>
<td>10.3</td>
<td>36</td>
<td>19.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of index trauma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.01</td>
<td>.04</td>
</tr>
<tr>
<td>Direct life threatening</td>
<td>105</td>
<td>27.7</td>
<td>66</td>
<td>36.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confrontational</td>
<td>274</td>
<td>72.3</td>
<td>117</td>
<td>63.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comorbid mood disorder</td>
<td>166</td>
<td>43.8</td>
<td>84</td>
<td>45.9</td>
<td>0.22</td>
<td>.64</td>
</tr>
</tbody>
</table>

**Table 4.** Gender x Age x Type trauma x Number different traumatic events Analysis of variance for Total PTSD symptoms

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>F</th>
<th>$\eta^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1</td>
<td>4.93</td>
<td>.00</td>
<td>.03</td>
</tr>
<tr>
<td>Age</td>
<td>3</td>
<td>2.80</td>
<td>.02</td>
<td>.04</td>
</tr>
<tr>
<td>Trauma Type</td>
<td>1</td>
<td>.91</td>
<td>.00</td>
<td>.34</td>
</tr>
<tr>
<td>Number of different traumatic events</td>
<td>3</td>
<td>3.01</td>
<td>.02</td>
<td>.03</td>
</tr>
<tr>
<td>Gender x Age</td>
<td>3</td>
<td>2.70</td>
<td>.02</td>
<td>.05</td>
</tr>
<tr>
<td>Gender x Trauma Type</td>
<td>1</td>
<td>.61</td>
<td>.00</td>
<td>.43</td>
</tr>
<tr>
<td>Gender x Number of different traumatic events</td>
<td>3</td>
<td>.77</td>
<td>.00</td>
<td>.51</td>
</tr>
<tr>
<td>Error</td>
<td>503</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Discussion**

This is the first study on traumatic experiences and symptom expression in a large sample of treatment seeking police officers with PTSD symptoms. In general, police officers experienced a great variety of traumatic events; from an average of 19.5 different types of events, to a maximum of 43. A greater variety of traumatic events was related to a higher level of PTSD symptoms. The index trauma of female police officers appeared to happen more
often in private life than was the case in male police officers. Furthermore, the index trauma of female police officers had more often a direct life threatening character than the index trauma of male police officers. Also, women had more total PTSD symptoms compared to men. These findings provide an important first insight into the substantial group of police officers suffering from PTSD symptoms and yield relevant clinical implications.

Interestingly, police officers who experienced the largest variety of traumatic events had the most PTSD symptoms. Although the relationship between the variety of events and PTSD symptoms could be bidirectional and causal conclusions cannot be drawn, the current findings are in line with previous research that has found a positive association between the number of experienced traumatic events and the presence of PTSD symptoms in the general population (Breslau et al., 1999; Stephens and Miller, 1998; Vasterling et al., 2010). In addition, previous research in soldiers has shown that an increase in the exposure to stressful events over time may lead to a sensitization to subsequent events and to the progression of PTSD symptoms (Smid et al., 2013). However, some studies that specifically focused on police officers did not find an association between the number of events and the presence of PTSD symptoms (Chopko and Schwartz, 2012) or found a rather weak positive association (Weiss et al., 2010). As these studies assessed the total number of (work-related) events, the findings of the current study may indicate that the variety of (both work-related and private) events taps into another aspect of trauma exposure. Asmundson and Stapleton (2008) also investigated the variety of both work-related and private events in police officers, and found that the variety of experienced traumatic events was related to the number of PTSD symptoms in a general sample of active-duty police officers. Our study adds to these findings and shows that the variety of events influences the number of PTSD symptoms in a sample of treatment seeking police officers. Although the number and variety of experienced events may be closely related variables, they could as well reflect two distinct phenomena with unique and different influences on PTSD symptoms. Future research should take this differentiation regarding trauma exposure into account to further contribute to our understanding of potential mechanisms underlying the severity and the development of PTSD symptoms.

Apart from the effect of experiencing a larger variety of events, older police officers tended to suffer from more PTSD symptoms than their younger colleagues. These results underline that monitoring the experience of traumatic events and early detection of trauma-related symptoms are of crucial importance in the police force as a whole, but may be especially relevant for the more experienced police officers. Prior studies suggest that ongoing monitoring may help to identify risk factors for the development of psychological problems and enhance the wellbeing of police officers (Tehrani, 2016; Powell et al., 2014). Recent
developments, such as using smart mobile applications for self-screening and monitoring, may be a low intensive but sensitive way for early detection of symptoms and could facilitate the process of appropriate and timely referral (Van der Meer et al., 2014). Of notice, it might be possible that the increase in PTSD symptoms in older police officers is not solely attributable to the increase in exposure to stressful events over time, but could also be partly explained by a reduction in resilience due to other ageing factors. Further research is needed to provide insight into this hypothesis.

Regarding gender, female police officers had more often a private or direct life threatening index trauma than their male colleagues. In general, it has been found that men and women may differ in their cognitive appraisal of a traumatic event, with women being more prone to perceive threat and loss than men (Olff et al., 2007). However, this explanation only partially supports the gender difference in our study regarding the type of index trauma (direct life threatening vs. confrontational) as the distinction was determined by the researchers, based on objective criteria. Several studies found that female officers more often experience (sexual) harassment, discrimination and hostility during their police work than male officers (Brown, 1998; Brown, 2000; Burke and Mikkelsen, 2004). We may speculate that this negative and hostile attitude towards women in the police force could lead to female officers being more frequently personally attacked and consequently more often involved in life threatening situations. In addition, our findings may indicate that female police officers could be more negatively affected by direct life threatening situations (characterized by fear and the urge to survive), and male police officers may be more negatively affected by confrontational situations (characterized by feelings of impotence, helplessness, and sadness). Further studies are warranted to provide insight into these hypotheses.

As expected, female police officers suffered from more PTSD symptoms than male police officers. However, it should be noted that the difference was clinically modest. Furthermore, there were no gender differences in symptom clusters or the diagnosis of a comorbid disorder, indicating that the symptom expression among female and male police officers with PTSD symptoms is overall highly similar. Although the few previous studies that investigated gender differences in symptom expression among non-police populations with PTSD have shown inconsistent results (Green, 2003; King et al., 2013; Zlotnick et al., 2001), the overall findings support our results that men and women suffer from highly similar symptoms. Of notice, none of these previous studies were conducted in police officers. Therefore, our findings contribute importantly to our knowledge about possible gender differences in trauma and PTSD symptoms among police officers.

This study has several important strengths. The study had a unique large sample of
treatment seeking police officers, and therefore provides clinically relevant information for both the police force as well as clinical services dealing with the consequences of this highly demanding job. The large sample size allowed us to divide the sample in meaningful categories, without losing statistical power. Furthermore, the data was collected by highly experienced clinical diagnosticians in the police-outpatient clinic, a dedicated center in the Netherlands that is specialized in trauma-related symptoms in police officers. Moreover, two well-established instruments (SI-PTSD and CAPS) were used to measure PTSD symptoms, which enable a reliable and valid PTSD diagnosis.

Some limitations of this study should be noted. Our sample consists of treatment seeking police officers, allowing limited generalisation to the total group of police officers with PTSD or to the police force as a whole. Future research should focus on examining the entire police force and gain insight in the complete group of police officers who suffer from PTSD symptoms. Prospective research among police officers should investigate potential risk factors for developing PTSD symptoms with a focus on gender, age and the variety of traumatic events. Regarding traumatic events, special attention should be paid to adverse childhood events in police officers, since these events seem to be more prevalent in police officers compared to the general population and may play an important role in the development of (mental) health problems later in life (Maguen et al., 2009; Wang et al., 2010). As only the CAPS systematically generates a frequency and intensity score for each symptom, we solely used the dichotomous score for symptom presence in our analyses. Hence, future research could consider measuring PTSD symptom severity. Despite these limitations, our study underscores the importance of investigating the specific group of police officers who suffer from PTSD symptoms, including female and older police officers, especially considering the increasing age and the growing number of women in the police force worldwide (Bureau of Justice Statistics, 2007; National Police, 2013).

Conclusions

Referred police officers encounter a large variety of traumatic events, which significantly affects the number of PTSD symptoms in this group. Being confronted with numerous stressful events is an inevitable part of working at the police force. Considering this fact and our current findings, monitoring trauma and screening for trauma-related responses starting at an early stage to prevent negative mental health outcomes in police officers seems appropriate. Valid screening instruments are available (Mouthaan et al., 2014) and easily applicable mobile assessments of trauma-related symptoms are being developed and may help early detection of police officers at risk (Van der Meer et al., 2014). If PTSD has
already developed, effective treatments exist (Bisson and Andrew, 2007), also specifically for police officers (Gersons et al., 2000; Lindauer et al., 2005).

Finally, female police officers were more affected by private and direct life threatening events than male police officers. Paying attention to this difference in trauma between female and male police officers is warranted, as it may direct both research initiatives and clinical practice. As private traumas may also affect functioning at work, these traumas should be routinely considered. Raising awareness of gender differences in police officers may lead to more personalized and differentiated interventions and subsequently to therapeutic benefits and a better functioning police force.

Disclosure
The authors declare no conflict of interest.
References


Bureau of Justice Statistics (2010) Local Police Departments 2007, Office of Justice Programs, United States Department of Justice, NCJ 231174, Washington, DC.


