



The association between alcohol, medicinal drug use and post-traumatic stress symptoms among Norwegian rescue workers after the 22 July twin terror attacks



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ABSTRACT

Background: The aim of this study was to assess whether the use of alcohol and medicinal drugs among rescue workers as a consequence of the 22 July terrorist attack was associated with post-traumatic stress symptoms, and explore if there were differences between affiliated and unaffiliated rescue workers.

Methods: Ten months after the bombing in the Oslo government district and the shooting at the youth camp on Utøya Island, a cross-sectional study of 1790 rescue and healthcare workers was conducted. The questionnaire included information on medicinal drug and alcohol use, experiences during rescue work and PTSS.

Results: Few rescue workers reported alcohol (6.8% n = 119) or medicinal drug (5.5% n = 95) use as a consequence of participation in the 22 July terror attacks. Alcohol and medicinal drug use was associated with an elevated level of PTSS among the rescue workers who reported to use medicinal drugs (11.1 95% CI: 5.7–21.8) or alcohol (10.0 95% CI: 5.2–19.0) as a consequence of the terror attacks.

Conclusion: The study found a low level of post-traumatic stress symptoms (PTSS) and alcohol and medicinal drug use among the rescue workers after the terror attacks in Norway on 22 July 2011. There was a strong association between both medicinal drug and alcohol use and elevated PTSS.

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1. Introduction

On 22 July 2011, a car bomb was detonated in the Oslo government district inflicting heavy structural damage. Eight people were killed and many were injured. A few hours later, shooting were reported from Utøya Island, about 40 kilometres north-west of Oslo, where the Norwegian Labour Party were holding a youth camp. In the second attack, 69 adolescents or young adults were killed, and many were injured (Gaarder et al., 2012; Sollid et al., 2012). Survivors from the two attacks were either transported to centres for victims and next of kin, outpatient emergency services, or admitted to hospitals. The healthcare treatment and the psychosocial

follow-up for both the survivors and their next of kin lasted for several weeks. Professional rescue workers from the police, the fire service, volunteers affiliated to different organizations who are trained to assist in various rescue operations and healthcare departments were involved in the wake of the attacks. Unaffiliated rescue workers who happened to be close to the terror site contributed substantially to the rescue work in the early stages before the police and other professional rescue workers arrived at Utøya Island.

Professional rescue workers have reported higher prevalence rates of post-traumatic stress symptoms (PTSS) than the general population (Berger et al., 2012). Rescue work at major disasters where many people are injured or dead may lead to PTSS afterwards for the rescue workers involved. Using alcohol to cope with such symptoms has been reported in other studies (North et al., 2002; Stewart et al., 2004). A study of Swiss voluntary rescue workers who had worked at an airline crash site reported associations between frequency and severity of PTSS and coping-motivated drinking (Stewart

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et al., 2004). Post-disaster alcohol use disorders and drinking to cope seem to be associated with indicators of poor functioning among rescue workers (North et al., 2002). Few studies have investigated the use of medicinal drugs among rescue workers involved in traumatic rescue operations. But a study of exposure to the South East Asia tsunami disaster in 2004 reported associations between increased use of medicinal drugs and PTSD symptoms (Vetter et al., 2008).

After the terror attacks in Norway 2011, a study was conducted among all the rescue workers involved. Some results of this study have been presented in two papers, and report low prevalence of PTSS among the rescue workers involved (Gjerland et al., 2015; Skogstad et al., 2015). However, it seems like the unaffiliated rescue workers have higher rates of PTSS (Gjerland et al., 2015). Most previous studies on alcohol use after traumatic events have focused on professional rescue workers. The coping strategies of unaffiliated rescue workers compared to professional rescue workers might be different, and a comparison of alcohol and medicinal drug use as a coping strategy between these groups seems to be missing in the current literature.

The aim of this study was to assess whether the use of alcohol and medicinal drugs among rescue workers as a consequence of the 22 July terrorist attack was associated with post-traumatic stress symptoms, and explore if there were differences between affiliated and unaffiliated rescue workers.

2. Materials and methods

2.1. Study design and setting

The study was cross-sectional, anonymous and questionnaire based. It was conducted between March and June 2012, approximately eight to 11 months after the terror attacks (mean 10 months). Respondents were all personnel involved in the rescue and healthcare service of victims and their relatives after the bombing in the Oslo government district and the shooting at the youth camp on Utøya Island on 22 July 2011. The rescue workers were involved from between one day to several weeks. Professional and unaffiliated rescue workers who contributed to the rescue operations and the treatment of survivors and their next of kin between 22 July and 5 August 2011 were invited to participate in the study. The reporting of this study conforms to the STROBE statement (von Elm et al., 2014). The present paper is part of a larger study examining the consequences for the rescue workers of the 2011 terrorist attacks (Gjerland et al., 2015; Skogstad et al., 2015).

2.2. Participants

Six disciplines of rescue workers were included: 1) police officers; 2) firefighters; 3) trained and affiliated volunteers: i.e. the Norwegian Civil Defence and the National Guard, and volunteer organizations: i.e. Norwegian Search and Rescue Dogs and Norwegian People's Aid; 4) general healthcare providers (physicians, nurses/nurse assistants, paramedics, other personnel working in hospital; 5) psychosocial healthcare providers (psychiatrists, psychologists, counsellors [priests, other employees of the church and imams], social workers and nurses; and 6) unaffiliated rescue workers: i.e. civilians who just happened to be at the campsite close to Utøya Island.

The distribution of the questionnaires was done in different ways. For the professional groups, a leader within each unit was appointed to distribute the questionnaires to personnel involved in the rescue work. The completed questionnaires were returned anonymously into a sealed box, which was returned to the study group. Some questionnaires were, however, distributed by mail when this was more convenient. The municipality of Hole provided names and addresses for the unaffiliated volunteers, and the questionnaire was

sent to them by mail with return envelopes. For all groups, a reminder was sent after approximately 1 month.

2.3. Variables

Demographic variables were gender, age (<30, 30–49 or >50), and if the respondent had an organizational affiliation. The PTSD Checklist (PCL) was used to assess symptoms of post-traumatic stress disorder (PTSD). It is widely used and was first presented by Frank Weathers and colleagues in 1993 (Weathers et al.). The 17-item questionnaire (range 17–85) includes symptoms (in the last month) needed for a formal PTSD diagnosis according to the Diagnostic Statistical Manual of Mental Disorders (DSM IV) (Weathers et al.). The items are scored on a 5-point Likert scale (1 = not at all to 5 = extremely). There are three versions of PCL: M (military), C (civilian) and S (specific). In this study, the specific version was used because it asks about symptoms after an identified “stressful experience.” The results of the 17 items were summarized, and then divided into three categories where a score above 50 points may indicate PTSD, and a score above 35 may indicate clinical problems. The PCL-S has been validated in a sample of Norwegian survivors from the South East Asia tsunami disaster in 2004 (Hem et al., 2012).

The rescue workers were exposed to different kinds of threats: ongoing shooting at Utøya Island and fear of collapsing buildings in the city centre, in addition to fear of subsequent terror attacks towards, e.g. hospitals. Place of work was therefore of special interest and thus registered in the following categories: sites of terror, hospital or outpatient emergency clinic, centre for victims, and next of kin and other (patrolling, office, etc.). Experience of peritraumatic threats was measured by three questions: Have you experienced: 1) fear of explosion/shooting, 2) fear of being injured, 3) other risks/uncertainty? The response alternatives were: a) no, not experienced, b) yes, not/a little stressful, c) yes, moderately stressful, d) yes, very stressful. The answers were dichotomized: have not/have experienced such fear. One question measured concern for relatives/friends that might be present at the terror sites during the attacks. The answers were dichotomized: have not/have been concerned for relatives.

Seven items measured if the rescue worker had witnessed situations or impressions that were considered to be stressful. The Norwegian Centre for Violence and Traumatic Stress Studies developed and used these items after the South East Asia tsunami disaster in 2004 (Thoresen et al., 2009). Questions were as follows: Did you experience: disaster victims searching for next of kin, disaster victims in despair, disaster victims with major physical injuries, dead bodies, body parts, or physical contact with dead bodies, and strong smells or other sensory perceptions? The items were collapsed into one dichotomy variable. The variable was positive if the rescue worker reported any witnessing of the experiences described above.

Alcohol and medicinal drug use was measured by seven questions, three questions addressed the use of alcohol: Have you as a consequence of the terror attacks used alcohol 1) to calm down, 2) to be in a better mood, and 3) to sleep? The response alternatives for each question were: a) ‘no’, b) ‘in the first week’, and c) ‘for more than one week’. The three questions were collapsed into one dichotomy variable where the answer ‘no’ was coded as negative and any alcohol use was coded as positive. In order to assess the use of medicinal drugs, four questions were used: Have you as a consequence of the terror attacks used one or more of the following medicinal drugs: 1) sleep medicine, 2) medication to calm down, 3) medication for depression, 4) other medication? The response alternatives for each type of medicinal drug were: a) ‘no’, b) ‘a few times’, c) ‘weekly’, or d) ‘daily’. The four questions were collapsed into one dichotomy variable where the answer ‘no’ was coded as negative, and ‘a few times’, ‘weekly’ or ‘daily’ were coded as positive.

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