

ABSTRACT:

2006; Perrin et al., 2007; Vlahov et al., 2002).

Bowler

*Correspondence regarding this article should be directed to:
mfairclo@health.nyc.gov

et al., 2012; Goldenberg, 2015; New York State Museum, 2004;
WTC Operational Statistics, 2015).

SI workers were exposed to debris which contained not only

rwnxgk|gf"ocwgt'htqo`vjg'eqmcrug'qh'vjg"YVE'dwknfkpiu*Brackbillet al., 2006; Landrigan et al., 2004; Liou et al., 2002+"dwv"jc|ctfqwu" ycuvg."ejgokecnu."cpf"oketqqticpkuo"cntgcf{"rtgugpv"cv"vjg"ncpfLm." a former 3,000-acre New York City (NYC) garbage disposal site that was closed prior to 9/11 (Anatomy: World Trade Center/Staten Kuncpf"NcpfLm"Teqxtg{"Qrgtcvkqp."4226; Dawsey, 2013; Gelberg, 1997; Uw1kvc"gv"cn0."3 ; ;4+0"Y jkng"yqtm"cv"vjg"ncpfLm"ycu"rgthqtogf" by personnel of the NYC Police Department (NYPD), NYC Fire Department (FDNY), the Federal Bureau of Investigation (FBI), and OCME, most of whom likely had prior training or experience in human remains recovery work, large numbers of workers not likely to have had this type of training or experience also participated in this painstaking work, including NYC Department of Sanitation *FUP [+ "rgtuqppgn."eqpuvtwekqp"yqtmgtu."cpf"xqnpvpggtu"chLkncvgf" ykvj"qti cpk|cvkqpu"*g0i0."Tgf"Etquu+"*Debchoudhury et al., 2011; Ekenga et al., 2011).

Previous research has shown that adverse mental health consequences, particularly posttraumatic stress disorder (PTSD), have been associated with exposure to human remains during war time, and following natural disasters, plane crashes and other events (Andersen, Christensen, & Petersen, 1991; Bartone, Ursano, Wright, & Ingraham, 1989; McCarroll et al., 1995; Miles, Demi, & Mostyn-Aker, 1984; Steinglass & Gerrity, 1990; Ursano, Fullerton, Kao, & Bhartiya, 1995). PTSD has been found to be elevated in 9/11 rescue, recovery and clean-up workers (North et al., 2002; Perrin et al., 2007). This increase may be due to the nature of work performed during or after a disaster. In a study of over 8,000 WTC police tgurqpfgtu."Rkgt|cm"gv"cn0."hqwpf"vjcv"gzrquwtg"vq"jwo cp"tgockpu" was associated with an increased likelihood of PTSD (Rkgt|cm"gv" al., 2012). There is limited research regarding the extent to which encountering human remains after the WTC disaster may have resulted in lasting psychological effects.

There is a particular gap in the literature regarding the effects of jwo cp"tgockpu"gzrquwtg"qp"UK"ncpfLm"cpf"dtig"yqtmgtu"yjq"ygtg" engaged in intensive debris handling and sorting activities after 9/11. This study examined the self-reported exposure to human remains c o q p i " v j q u g " y j q " y q t m g f " c v " v j g " U K " n c p f L m " c p f " d c t i g u " k p " q t f g t " v q " assess subsequent PTSD among these workers more than 10 years after 9/11.

METHODS

The methods used to collect World Trade Center Health Registry (WTCHR or Registry) data have been previously published (Brackbill et al., 2009; Farfel et al., 2008; Murphy, 2006; Perrin et al., 2007+0" Dtkg1 { ."vjg"93.653"kpfxkfwcnu" gptqmgf"kp"vjg" Tgi kuvt { " comprise several eligibility groups: Rescue, recovery and clean-up workers and volunteers; lower Manhattan workers and passersby

asked in a separate question: 'How often did you encounter human remains at your worksite?' The responses to this question ranged from never to every day.

An abbreviated version of the Medical Outcomes Study Social Support Survey (Ritvo et al., 1997; Sherbourne & Stewart, 1991

Lindy, Grace, & Gleser, 1989; McCarroll, Ursano, & Fullerton, 1995; Miles, Demi, & Mostyn-Aker, 1984; Steinglass & Gerrity, 1990; Stellman et al., 2008; Sutker et al., 1994; Ursano, Fullerton, Kao, & Bhartiya, 1995

(Brackbill et al., 2009; to 9/11, and other research has shown that social support may aid in the handling of stressful events (Bassuk, 1991; Cohen & Wills, 1985; Galea et al., 2002; Reissman and Howard noted that pre-disaster assessments of workers who may be involved in any aspect of disaster work may identify individuals who are at higher risk for mental health illness (Reissman & Howard, 2008). Over twenty years ago, McCarroll et al., recommended strategies for disaster preparedness and response that remain useful, including providing: sleep and rest; and regular time off (McCarroll, Ursano, Wright, & Fullerton, 1993). They further suggested that post-work transition periods and embedding mental health professionals to assist with the immediate needs of responders may also help. Importantly,

Disorder Checklist Scale in posttraumatic stress disorder and nonclinical subjects. *Journal of Traumatic Stress*, 1(1), 47-53.

Vlahov, D., Galea, S., Resnick, H., Ahern, J., Boscarino, J.A., Bucuvalas, M., et al. (2002). Increased Use of Cigarettes, Alcohol, and Marijuana among Manhattan, New York, Residents after the September 11th Terrorist Attacks. *Journal of Traumatic Stress*, 15(11), 988-996.

Ygcvjgtu." HlY0." Nkv|." D0V0." (" Jgt ocp." F0U0." *3; ;5+0". Paper presented at the Annual Meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.

WTC Operational Statistics. (2015). Retrieved September 3, 2015, from http://www.nyc.gov/html/ocme/downloads/pdf/public_affairs_ocme_pr_WTC_Operational_Statistics.pdf