Long term psychosocial consequences for disaster affected persons belonging to ethnic minorities

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Long term psychosocial consequences for disaster affected persons belonging to ethnic minorities

Psychosociale gevolgen op lange termijn voor allochtone getroffenen van een ramp

(met een samenvatting in het Nederlands)

Proefschrift

ter verkrijging van de graad van doctor aan de Universiteit Utrecht op gezag van de rector magnificus prof.dr. G.J. van der Zwan, ingevolge het besluit van het college voor promoties in het openbaar te verdedigen op vrijdag 23 november 2012 des ochtends te 10.30 uur

door

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Chapter 1

Introduction

Experiencing a disaster (which threatens life, injury, or even death of loved ones) may profoundly affect the psychological well-being. With ongoing adversities such as severe physical problems – some of which may be long-lasting or even permanent – property damage, relocation and possible financial losses the impact of the disaster may last.

In recent years, more and more studies have been published indicating several psychosocial consequences of a disaster.[1] In this growing body of literature, some of the studies specifically address the effects for non-Western populations: ethnic minorities in Western societies and populations in non-Western countries. Most of these disaster studies are carried out in the USA, recently increasingly in China, and to a lesser extent in Latin-America, India and the Middle East. In Western-Europe "disaster studies" dealing with non-Western ethnic minority groups (such as Turkish or North-African labour migrants) and immigrants from the former West-European colonies are limited.

This thesis describes the psychosocial consequences for affected ethnic minorities of the Enschede Fireworks disaster in The Netherlands in 2000. Chapter 1 will present a general overview of the used study designs, challenges in intercultural research and the research questions for this thesis. Before elaborating on this specific disaster, previous studies on the psychosocial effects of disasters on ethnic minorities will be reviewed and described.

Risk for ethnic minorities is under debate

Until recently, belonging to an ethnic minority was an acknowledged risk factor for short-, medium- and long-term post-traumatic stress symptoms.[2,3,4,5,6,7] However, later studies indicate more variable outcomes.[8] In a literature overview, several studies concerning psychological effects after disasters in ethnic minority populations living in Western countries or populations living in non-Western are reviewed (see Table 1).

Data sources and study selection
Studies were located by an electronic search. Multiple databases were used in order to find the maximum number of relevant studies: PsycINFO, MEDLINE and the PILOTS database. The following search terms were combined: *post-traumatic stress disorder (and all subheadings)* AND [*ethnic minority* OR *immigrant* OR *migrant*] AND [*disaster* OR *natural disaster* OR *technical disaster* OR *earthquake* OR *hurricane*]. With these search terms a number of studies would be missed: the studies that were not specifically focused on ethnic minorities, e.g. "ethnic minority" was used as a demographic factor, and studies in non-Western countries. Therefore, specific disasters were surveyed: *Chi-Chi earthquake*, *Bam earthquake*, *9/11 Attacks*, *Ghislenghien*, *Toulouse*, *Bhopal*, *Super Cyclone*, *Hurricane Katrina*, *Chernobyl*, *Tsunami 1994*, *Sichuan Earthquake*. The papers were selected on the following bases: (1) In case of a disaster in the USA or Western Europe, there had to be a distinction between ethnic minority groups, as a main focus of the study or as a demographic factor. (2) The study had to be carried out after a disaster in a non-Western country among a non-Western population. (3) The study had to demonstrate the prevalence of Posttraumatic Stress Disorder (PTSD; while most papers were merely focused on PTSD). However, when after a specific disaster, there was no information on the prevalence of PTSD, and a study gave information about ethnic differences in mental health, the paper was selected too. The studies in Third World countries after wars, large-scale violence and famine were excluded.

Disaster studies focussing on non-Western populations in Western countries
The few disaster studies carried out in Western Europe show variable outcomes concerning psychological effects of a disaster. A study on the Enschede disaster showed that differences in psychosocial consequences between ethnic minorities and the ethnic majority were a result of pre-existing mental health problems.[9] After the London Bombings, ethnicity was a non-significant factor for persistent substantial stress 7–8 months post-bombings.[10] Other studies on disasters in Europe did not involve ethnic minorities (e.g. the chemical explosion in Toulouse[11], the rupture of a gas pipeline of Ghislenghien[12] or the Madrid Bombings[13]).

In several American studies concerning mental health after disasters, the outcomes were controlled for ethnic minorities, while some had a specific focus on ethnic minorities. However, one should realise that most studies from the USA and Europe do not include non-Western immigrant groups such as Turkish or North African immigrants or immigrants from former colonies.[14]

Table 1 *Overview of studies in Psychosocial consequences for disaster for non-Western populations*

Source		Disaster Type	Where Occurred		Sample Type			Results
			Country	Population	Number	Ethnicity	When	
Western Countries								
Norris et al., 2010[15]		2008, Hurricane Ike	USA	Community sample of affected	658	66.1% Caucasion, 13.5% African American,13.8% Latino, 6.6% foreign born	2–5 months	7.4% PTSD/ for posttraumatic stress there was a significant correlation with ethnicity, in case of PTSD it was not reported
Tracy et al., 2011[17]		2008, Hurricane Ike	USA	Community sample of affected	658	67.8% white non-Hispanic, 13.5% black non-Hispanic, 13.8% Hispanic, 4.9% other non-Hispanic	2–5 months	9.5% PTSD non-white, 4,4% PTSD white non-Hispanic (ns for ethnicity)
Perrilla et al., 2002[7]	*	1992, Hurricane Andrew	USA	Community sample of affected	404	33% Latinos, 33% non-Hispanic blacks, 34% non-Hispanic whites	6 months	PTSD: Latino Spanish prefering: 38.1%, Latino English pref: 18.9%, non-Hispnic black: 23%, non-Hispanic white: 14,8%. Sign diffences between minority groups and whites, sign diff between Spanish and English pref Latinos.
Ruggiero et al., 2009[16]		2004, Hurricanes Florida	USA	Community sample of affected	1452	76.6% Caucasian, 11.4% African American, 9% Hispanic, 3% other	not known	3.6% PTSD, ns for ethnicity
Bonanno et al., 2006[5]		2001, September 11 attack NY	USA	Community sample of affected	2752	53.2% white, 16.7% African American, 20.6% Hispanic, 5.4% Asian, other	6 months	Resiliency (0-1 PTSD symptom): white: 67.1%, African American: 64.1%, Asian: 82.3, Hispanic: 56.3, Asian: 82.3%, other: 53.2%. Differences significant, however ns when controlled for demographics or other factors.
Bonanno et al., 2007[16]		2001, September 11 attack NY	USA	Community sample of affected	2752	white, Asian, African American, Hispanic, other (no% reported)	6 months	Etnicity ns with (probable PTSD), sign more resiliency for Asian group and less resiliency for "others" comp to White
Adams and Boscarino, 2005[4]	*	2001, September 11 attack NY	USA	Community sample of affected	2180	47% white, 28% African American, 5% Dominican, 12% Puerto Rican, 8% other Latino	1 year	PTSD/ PTSD symptoms: white: 4/7.8%, African American: 5.5/10.5%, Dominican: 5.3/17.4%, Puerto Rican: 8.4/18.4, other Latino: 5/11.6%. Differenes ns when controlling for demographics
Adams et al., 2006[20]		2001, September 11 attack NY	USA	Panel study	1681	43% white, 4,6% Asian, 24.1% Hispanic, 26% African American, 2.4% other	1–2 years	Mental health: multivariate model African American had better health than Whites
Boscarino and Adams, 2009[94]		2001, September 11 attack NY	USA	Community sample of affected	1681	43% white, 4.6% Asian, 24.1% Hispanic, 26% African American, 2.4% other	1–2 years	PTSD: affetced Latinos and Non-native borns had significant more delayed PTSD and persistent PTSD cases
DiGrande et al., 2008[19]		2001, September 11 attack NY	USA	Community sample of affected	11037	62.1% white, 19.2% Asian, 10.3% Hispanic, 5.1% African American	2–3 years	PTSD: white: 10.7%, African American: 20.6%, Hispanic: 10.3%, Asian: 8.9%, other: 20.2%. Differences are significant, also in multivariate model.

* These studies are specially focused on psychological consequences for etnhnic minorities; ns= differences are non significant; sign=differences are significant

Table 1 *(continued) Overview of studies in Psychosocial consequences for disaster for non-Western populations*

Source		Disaster Type	Where Occurred		Sample Type			Results
			Country	Population	Number	Ethnicity	When	
Western Countries								
Kulkarni and Pole, 2008[89]	*	1994, Northridge, California Earthquake	USA	Sample of Asian and European American Sample	880	13.4% Asian American, 86.6% European American	not reported	Asian American affected were more vulnerable for psychiatric stress than European Americans
Weems et al., 2007[24]		2005, Hurricane Katrina	USA	Community sample of affected	386	75.3% Caucasian, 18.4% African American, 4.2% Hispanic, 0.8% Asian, 1.3% other	3 months	Differences between PTSD and psychological symptoms ns when controlled for demographics, proximity, region. PTSD sign: gender and experiences
Galea et al., 2007[25]		2005, Hurricane Katrina	USA	Sample of English speaking affetced	1043	non-Hispanic white, non-Hispanic blacks, Hispanic and other (no%)	5-7 months	Hispanics had lower prevalence of any disorder and PTSD than non-hisp white (caution: also asians in hispanic and other group/small)
Wadsworth et al., 2009[22]		2005, Hurricane Katrina	USA	Sample of displaced and relocated affected	93	34.4% Caucasian, 61.3% blacks, 2.2% Hispanic	3–6 months/9–12 months	Posttraumatic trajectories did not differ between ethnic groups, although displacement stress and positive religious coping were relevant for African Americans
Sastre et al., 2010[23]		2005, Hurricane Katrina	USA	Sample of affected	144	56% blacks,44% white	1 year	32% blacks severe mental illness, 6% severe mental illness: ns when controlled for housing damage
Chen et al., 2007[5]	*	2005, Hurricane Katrina	USA	Sample of Vietnamese-American survivors	113	Vietnamese American	appr. 1 year	17% above one SD of PTSD-symptom (IES) avarage score. Poverty and financial strain most influential
Galea et al., 2008[28]		2005, Hurricane Katrina	USA	Community sample of affected	810	6	appr 1.5 year	PTSD : 19.2% white, 32.4% black, 44.1% Hispanic, 15% other. Differences ns when controled for among others (sign) gender, exposure Katrina, loss, soc supp, exposure after Katrina
Verschuur et al., 2010[95]		1992, Bijlmer Aircrash	Netherlands	Sample of affected	792	51.3% Dutch native, 47.9% non-Western	8 years	Differences ns however a mediating factor in changes of psychopathology, fatigue and QOL
Palinkas et al., 1992[6]		Exxon Valdez Oil spil	USA	Sample of affected	594	33.6% Alaskan Natives, 66.4% Euro Americans		Natives had higher impact score, and more depressive simptoms than Euro Americans
Rubin et al., 2007[10]		Londen Bombings	UK	Sample of affected	574	79% white, 21% other	7–8 months	Substantial stress: 11%, ethnicity was a ns predictor for persitent substantial stress 7–8 months after the bombings comp to 11–13 days post bombings
Soeteman et al., 2009[9]		Enschede Firework disaster	Netherlands	Matched sample of affected	909	Dutch native, Dutch Turkish	1–2–3–4 years post disaster	Mental health problems: 1 yr: 41.7%; 2 yr: 24.7%; 3 yr: 25.5%; 4 yr:20.0% Differences ns. when controlled for problems pre-disaster
Lazaratou et al., 2008[90]		1953, earthquake	Greece	Sample of affetced	121	Greece	50 years	49% 4–5 symptoms of posttraumatic stress

* These studies are specially focused on psychological consequences for etnhnic minorities; ns= differences are non significant; sign=differences are significant

Table 1 *(continued) Overview of studies in Psychosocial consequences for disaster for non-Western populations*

Source	Disaster Type	Where Occurred		Sample Type			Results
		Country	Population	Number	Ethnicity	When	
Non-Western countries							
Sezgin and Punamäki, 2012[96]	Earthquake	Turkey	Community sample of affetced women	1253	Turkish	not reported	60.9% PTSD
Karamustafalioglu et al., 2006[39]	1999, Earthquake	Turkey	Community sample of affected	464	Turkish	1–3 months/6–10 months/18-20 months	PTSD:30.2%-26.9%-10.6%
Şalsioğlu et al., 2003[40]	1999, Earthquake	Turkey	Sample of affetced	586	Turkish	20 months	PTSD 39%-Depres 18%
Parvaresh and Bahramnezhad, 2009[38]	2003, Earthquake	Iran	Sample Bam-affected students living in Kerman	160 (older than 15 years)	Iranian	4 months	PTSD 36,3%
Loganovsky et al., 2008[97]	Chernobyl accident	Ukraine	Sample of clean-up workers	295	Ukraine	18 years	PTSD one year before study: 4,1%/ Prevalence: 18% depresssion vs 13.3% contr/ 9.2% suicide vs 4,1
Caldera et al., 2001[27]	Hurricane Mitch	Nicaragua	Primary care centers	496	Nicaraguan	6 months	PTSD: 9%
De la Fuente, 1990[27]	1985, earthquakes	Mexico	Random sample	573	Mexicans	1-2 months	PTSD: 32%
Norris et al., 2004[29]	Flooding and mudslides	Mexico	Sample of affetced	561	Mexicans	6–12-18-24 months	6 months PTSD: 24% avarage/ 46% in Tezuitlán severely affected community
Lima et al., 1987[30]	Volcano Eruption	Colombia	Sample of affected	200	Colombians	7 months	Emotionally distressed: 55%
Kar et al., 2004[31]	Super-cyclone Orissa	India	Community Sample of affected	540	Indian (26.3% Illiterate)	4-12 months	PTSD: 44,3%, Psychiatric morbidity: 80,4%.
Kar et al., 2007[32]	Super-cyclone Orissa	India	Sample of adolescents	447	Indian	1 year	PTSD: 30,6%
Sethi et al., 1987[33]	Bhopal Technological disaster	India	Sample of affetced outpatients of community healthclinics	193	Indian	Not reported	Deperession: 37.3% , anxiety: 24,9% , adjustment reaction: 35,2%

* These studies are specially focused on psychological consequences for etnhnic minorities; ns= differences are non significant; sign=differences are significant

Table 1 *(continued) Overview of studies in Psychosocial consequences for disaster for non-Western populations*

Source		Disaster Type	Where Occurred		Sample Type			Results
			Country	Population	Number	Ethnicity	When	
Non-Western countries								
Van Griensven et al., 2006 [92]		2004 Tsunami	Thailand	Displaced and non-displaced Community residents of Phang Nga and Krabi and Phuket	371	Community samples of displaced and non-displaced victims	9 months	PTSD: Displaced: 12%, non-displaced/high impact: 7%, non-displaced/low impact: 3%. Anxiety: 37%-30%-22%. Culture Specific, Saw Ghosts: 19,9%-6,8%-4,6%/ Heard voices: 11,1%- 3.1% –3.0%
Chen et al., 2001[35]		1999 Chi-chi Earthquake	Taiwan	Sample of clients of a psychiatric service	525	Chinese	3 months	Re-experience symptoms: 25 (nightmares)-65,9%(intrusive recollections); Avoidance: 9,6(feelings detachetd) -31,5%(loss of interest); Arousal: 28,2(anger attacks) -63,7% (sleep disturbance)
Kuo et al., 2003[34]		1999 Chi-chi Earthquake	Taiwan	Sample of affected	120	Chinese	2 months	PTSD (Mini): 37%
Chen et al., 2007		1999 Chi-chi Earthquake	Taiwan	Community sample of affetced	6412	Chinese	2 years	PTSD: 20,9%
Xu and Liao, 2011[36]	*	Sichuan earthquake	China	Random sample	2080	80.5% Han, 7.1% Tibetan, 10.1% Qiang, 18% Hui, 0.5% other	1 year	PTSD symptoms: 56,8%, PT growth: 51,1%, mean PTg for Tibetan highest (however ns)
Xu and Song, 2011[37]	*	Sichuan earthquake	China	Random sample of affetced of a heavily and moderately damaged counties	Heavily damaged (HD): 367 Moderately damaged (MD): 337	HD: 67% Han, 4.9% Tibetan, 26.2% Qiang, 1.9% Hui; MD: 73.6% Han, 9.8% Tibetan, 11.3% Qiang, 5.3% Hui	1 year	Probable PTSD: HD counties: 48,2%; MD counties: 14,5%. Sign differences in PTSD in the group from HD counties (high prevalence among Tibetan and Hui), ns differences in PTSD in the groups from MD counties
Kato, 1998[93]		1995 Hanshin Earthquake	Japan	Community sample of affetced	6217	Japanese	3-8 weeks	PTSD: 25% highly exposed, 13% exposed

* These studies are specially focused on psychological consequences for etnhnic minorities; ns=differences are non significant; sign=differences are significant

Studies after severe hurricanes in the southern part of the USA showed variable outcomes for ethnic or racial comparisons of mental health. Some of the studies found significant differences in PTSD in the affected ethnic groups such as the study of Norris et al. (2010)[15] and Perilla et al. (2002).[7] However, after the 2004 Florida hurricanes the study of Ruggiero et al. (2009)[16] and after Hurricane Ike the study of Tracy et al. (2011)[17] demonstrated non-significant differences in the ethnic groups. In all these studies after the hurricanes, the composition of the ethnic groups was quite the similar.

With regard to 9/11 attacks, several studies were carried out 3 to 6 years later, the same variation in outcomes were found. The studies of Bonanno et al. (2006, 2007) demonstrated no significant differences for PTSD between the ethnic groups.[5,18] In their study, with a focus on ethnic groups, Adams et al. (2005) showed that after 1 year differences were not significant after a correction for demographics.[4] Furthermore, a study carried out 2 to 3 years after the September 11 attacks showed that ethnic minorities, such as those of Hispanic and African American race/ethnicity, were strongly related to PTSD.[19] However, this study as well as the study of Adams et al. (2006)[20] demonstrated that African Americans had even fewer psychosocial problems than the affected whites. Only a very few studies have focused on the long-term consequences for ethnic minorities. A study 5 to 6 years after the September 11 attacks showed a higher percentage of PTSD for non-Hispanic blacks and Hispanics compared to non-Hispanic whites.[21]

The studies conducted after the Hurricane Katrina showed a similar spread of psychosocial consequences across the ethnic groups.[22,23] The study of Weems et al. (2007) found no significant differences in PTSD when corrected for other demographics and proximity.[24] Galea et al. (2007) found an even lower prevalence of any disorder and PTSD in the Hispanic groups compared to non-Hispanic whites. [25] The group composition of this last study must be taken into consideration: the "Hispanic"-group included Asians too. Another study of Galea et al. (2008) with an ethnic focus showed no significant differences after correction for exposure, loss etc.[26]

Disaster studies in non-Western populations

Next to the North American studies, a number of studies have been carried out in Latin-America, China, India and the Middle East. Examples are the studies

on psychosocial consequences following 2–7 months after hurricanes and earthquakes in Latin America.[27,28,29,30] PTSD prevalence amounted to 9% after Hurricane Mitch in Nicaragua to 46% after mudslides in Mexico. After the super-cyclone in Orissa, India, the PTSD prevalence was respectively 44% 4 months and 30% 1 year after the disaster.[31,32] After the gas explosion of Bhopal in 1984, 37% of the population suffered from depression and 25% from anxiety.[33] In Taiwan the prevalence 2 months and 2 years after the Chi-chi Earthquake was respectively 37% and 21%[34,35] and 1 year after the Sichuan earthquake in China the prevalence of PTSD was almost 50–60%.[36,37]

A number of studies were carried out in the Middle East after several earthquakes. The city of Bam (Iran) was hit by an earthquake that killed 26,000 people and injured many more; 36% of a sample of affected students older than 15 suffered from PTSD.[38] Prevalence of PTSD varied from 30% 1–3 months to 10% 20 months after the 1999 earthquake in Turkey in the study of Karamustafalioğlu et al. (2006), to 39% 20 months post-disaster in a study from Şalsioğlu et al. (2003).

In conclusion, there is a large range of study designs and research methods in studies on psychosocial consequences of disasters between ethnic groups. The studies are characterised by a great variation in questionnaires for posttraumatic stress or PTSD. Many different self-reported questionnaires are used and only a small minority of studies have used structured or clinical interviews. The studies (see Table 1) that showed non-significant differences between the ethnic groups were sometimes corrected for demographics, other times corrected for proximity and exposure to the disaster, and sometimes corrected for both. Is it correct to conclude that ethnic minorities are not vulnerable? Or are they nevertheless more vulnerable? It may be difficult to conclude that there are no ethnic differences when prevalence of PTSD is corrected for proximity, damage or exposure. These results emphasise more the strong correlation between disaster exposure and PTSD over ethnicity. However, in the study of Xu and Song (2011)[37] the victims were divided into "extremely affected" and "moderately affected" before analysing for ethnicity. In the group entitled "extremely affected", ethnical differences in PTSD were found. On the other hand, within the group "moderately affected", no ethnical differences were found. This study shows that, with correction for proximity or exposure for the whole group, possible ethnic differences that are less strong than proximity or exposure can be overlooked.

Studies after disasters use *etic* research methods; the ethnic minority perspective has less attention

In post-disaster (mental) health research, quantitative methodologies are used most often. This is a so-called *etic* way of doing research: an etic approach (perspective of the researcher) uses universal instruments to measure the same quantities in all considered countries or cultures.

These quantitative studies give a clear picture of the health conditions of disaster victims. Furthermore, they provide important statistical evidence about identified or supposed aetiological factors. However, they are unable to uncover the actual, personal circumstances nor the construction of meanings that lie beneath the gathered "facts" within complex, fluid social contexts that are illustrated by the qualitative studies. Examples are studies conducted after the 9/11 attacks in New York [41], after Hurricane Katrina [42], after the Guadalajara explosion and Hurricanes Andrew and Paulina [43], and after the tsunami in 2004.[44]

Are these qualitative studies still needed in disaster research? The qualitative methodology may show possible knowledge gaps in a given area. In studies after disasters in affected Western populations, the lack of qualitative studies is hardly considered a problem. The concepts of mental health after disaster or traumatic incidents are built on Western populations and culture. Therefore, it is believed that quantitative research in Western populations provides an adequate and comprehensive overview of the possible problems. However, when it is still being debated whether all these Western concepts may be applied directly to the psychosocial consequences for those affected in other cultures or communities, qualitative research will still be necessary so as not to overlook important issues.

Mental health for ethnic minorities after a disaster

In explaining mental health consequences after disasters, Hobfoll's theory of conservation of resources (COR) is often used to explain mental health consequences after disasters.[45] The basics of the COR theory is that individuals strive to obtain, retain, protect, and foster their resources. Stress occurs when resources are threatened with loss, resources are actually lost or there is no sufficient gain of resources after their investment. According to Norris and Wind (2009) the COR theory has become highly influential in disaster research because disasters threaten the *object resources* (e.g. housing), *personal resources* (e.g. optimism, sense of safety), *conditions* (e.g. employment, social relations), and *energies* (e.g. employment, social relations).[46]

What is the relationship between the COR theory and the situation of ethnic minorities before, during and after a disaster? According to Bhugra (2004), the resources of ethnic minorities may be distinguished by (1) individual factors (social skills, concepts of the self and psychological and social vulnerabilities that come from being an ethnic minority), (2) social surroundings and communities (do collectivistic families or cultures have better social support systems?) and (3) the socio-economic status of immigrants.[47] These frameworks are also known as, and described by, the concept of *condición migrante*.[48] This concept refers to the condition immigrants live in, such as living in a country with another culture and the adaptation process to this new culture, the reason for migration, and being a minority, e.g. in culture, religion and race.

The period of adjustment to a majority culture will depend upon individuals' personalities, reasons for migration and the new society's welcome to those who have newly arrived. According to Bhugra (2004)[47], the process of migration, preparation leading up to migration and post-migration stress will influence individuals in different ways, and the individual responses will differ as well. As a result, the flexibility demonstrated by individuals in preparation, and the altered expectations, may play a role in helping them to manage their transition into the host culture. After the migration, stressors will occur: on an individual level there can be culture shock, or the discrepancy in aspiration and achievement can make people on a more social level – family or community systems – (partly) fall off track. These stresses may cause vulnerability to become emotional problems.

Furthermore, non-Western immigrants in Western Europe often live in less favourable socio-economic circumstances.[49] Even after years, they have lower-paid jobs, lower levels of education etc.[49] In comparison with native inhabitants, ethnic minorities more often live in neighbourhoods with high residential density, due to their poorer socio-economic situation. Their houses are often of poor quality and are more commonly located in the vicinity of dangerous industries. In addition to exposure to traumatic incidents[49,50,51], some argue that ethnic minorities run a greater risk of becoming actual victims of disasters. The study of Spence et al. (2007) showed that significantly fewer African Americans had an evacuation plan in place or actually evacuated before Hurricane Katrina compared to Caucasians.[52]

Culture

In these frameworks of ethnic minorities and mental health, both the process of migration, living in less favourable economic circumstances and living in "another culture" are important determinants. However, culture is often an

undefined factor. Culture may affect mental health since having lived in the one culture and adapting to the other may cause stress. It may be important with regard to mental health care after disasters, too. According to the definition of Geertz,

> culture is that accumulated totality of symbol systems (religion, ideology, common sense, economics, sports, ...) in terms of which people both make sense of themselves, and their world, and represents themselves to themselves and to others. Members of a culture use its symbols (e.g. winks, crucifixes, cats, collars, foods, footballs, photographs, words) as a language through which to read and interpret, to express and share, meaning. And since the imposition of meaning on life is the major end and primary condition of human existence, this reading of culture is constant; culture members are ever making interpretations of the symbol systems they have inherited.[53]

Culture is reflected in institutions like family, religion and social structures and in external forms such as food, clothing and art. But culture also shapes one's internal representations of values, attitudes, belief systems and cosmologies.[54,55] It is of the utmost importance that culture not considered as set in stone. People – and this is actually true for an ethnic minority group in the Western world too – do not live in simplified and static situations of one country of origin, one community or one culture.[56] A person's cultural identity is not a fixed set of meanings and behaviours. It is something that can be changed, it is elusive, and its form depends on context.[57] The studies by Arends-Tóth and Van de Vijver (2003) showed how the perceived cultural identity of Dutch Turkish immigrants differs in the private and public domains.[57,58] This means that the way immigrants perceive their culture differs between the public and private domains. At home, for example, Turkish immigrants consider themselves primarily Turkish, speaking Turkish with their families, watching Turkish television, having Turkish norms and values. However, at work or school they regard themselves as being as Dutch as their co-workers or fellow students. They do not *act* particularly Dutch but they are Dutch.

The way culture may affect mental health is important in analysing post-disaster care and post-disaster mental health care. Kleinman (2004) described the way culture influences mental health as a confounder for its diagnosis and therapy because it influences not only the experience of a mental illness, but also the individual's willingness to seek help, patient-practitioner communication and professional practice. It also affects the interaction of risk factors with social

support and protective psychological factors that contribute to mental illnesses in the first place.[59]

Acculturation

A person's or a community's culture will become apparent when he, she or it is in another cultural setting. When immigrating to another culture there will inevitably be a process of cultural adaptation: acculturation. Acculturation is a concept that refers to the way immigrants or ethnic minorities adjust to the host society. It reflects the degree in which the norms, values and traditions of the original culture are retained, as well as the degree to which new customs and skills are adopted.[60] Ethnic minorities have a variety of approaches to their acculturation process. These different paths ("acculturation strategies") have been described in terms of assimilation, integration, marginalisation and separation.[61,62] Integration implies involvement in a person's heritage and the majority's heritage. Assimilation implies being primarily oriented towards the majority's culture and minimally involved in one's own heritage culture. Marginalization implies minimal involvement in either culture. Separation implies involvement solely in the heritage culture. We will describe the effect of acculturation on mental health after a disaster in Chapter 5.

(Mental) Health care after disasters

When affected ethnic minorities seek help for their psychological problems after a disaster, they have to turn to Western-based health care services. In The Netherlands, people affected by disaster will first visit their general practitioner (GP). In some European countries, such as The Netherlands and Denmark, a GP acts as the central gatekeeper for more specialized mental health care (this function is regulated by law); if necessary, the GP will refer patients to specialized mental health services. In order to access proper care, it is important that GPs can recognize the (mental) health problems which are connected to the disaster. When these problems are recognized, the GP can refer the affected person to specialized health care professionals.

Language and cultural differences between GPs and social workers on the one hand and those affected on the other hand may limit access to aftercare and reduce the effectiveness of treatment services, which can result in a high dropout rate.[63,64]

In practice, culture-sensitive psychosocial care after disasters or traumatic incidents is often limited to the provision of translated multilingual information or a counsellor belonging to a particular ethnic group.[65,66] In addition, those victims belonging to different ethnic minority groups can use different explanatory models for post-disaster problems. Although not unique to

immigrant groups, these explanations appear most frequently to be non-psychological explanation models.[67] When victims are unfamiliar with specific psychological interpretations of health and the therapies used, problems may occur when they are being treated by general mental health services with no special attention to the ethnic minority perspective.

The Enschede disaster

On a sunny Saturday, May 13, 2000, many inhabitants of the district of Roombeek were in the city centre doing their shopping for Mother's Day the following Sunday. The neighbourhood in the middle of Enschede (a medium-sized industrial city in the eastern Netherlands) consisted of quite small houses built between 1920 and 1930. These houses were built for the labourers working in the textile industry, which was flourishing then and continued to do so until the mid-70s. Approximately one-third of the inhabitants of Roombeek had an immigrant, mainly Turkish, background.

The neighbourhood looked out over a large brewery. Next to this brewery there were lots of small and medium-sized businesses. Not all of the inhabitants were aware that a fireworks depot was situated in the middle of Roombeek; some thought that old paper was being stored in the building.

This particular Saturday at midday, fireworks were suddenly heard. A Dutch Turkish family living nearby thought that someone was testing the fireworks, which was not unusual. However, after a few minutes the fireworks depot exploded and demolished a large part of the district with two massive explosions. The rest of the neighbourhood was severely damaged. What followed was a mass alarm. Many raced away from the neighbourhood, some of them carrying family members. They saw police officers who simply did not know what to do. Stunned, people searched for their relatives, searched for their children, and tried to help others. The explosions lasted for more than a few minutes and killed 23 people and injured more than 900. More than 10,000 inhabitants had to evacuate their homes for a day or longer, and approximately 1,200 inhabitants lost their houses and belongings. For the immigrant victims, the destruction of their houses and belongings meant that all physical memories – photographs etc. – of their home countries, and their families living there, had vanished.

With the disaster destroying a huge part of the neighbourhood, people were given shelter in a sports hall nearby. The affected ethnic minorities stayed with their relatives and loved ones, many for weeks. Residents who had lost their homes were temporarily lodged outside the district or even outside Enschede.

Immigrants in the textile industry in The Netherlands: the situation of Enschede

What was the situation before the disaster for the ethnic minority community in Enschede? Was it similar to other communities in The Netherlands? Most ethnic minority groups live in the large urban areas of Amsterdam, Rotterdam, The Hague and Utrecht. The situation these groups live in is often linked with urban circumstances (in cities with several hundreds of thousands of inhabitants), which could have a negative influence on mental health.[50,68] They lived in less favourable circumstances in a marginalised situation. The situation of Enschede appeared to be different. Therefore, we will describe the situation of the largest affected ethnic minority group.

From the beginning of the 19th century, the textile industry was booming, especially in the East and the South of The Netherlands. After World War II, during the reconstruction of Dutch society ("de wederopbouw"), many of the young native inhabitants of these eastern and southern "textile" towns went to the big cities in the western Netherlands to fill the need for more workers in the growing industries.[69] Due to this migration and shortage of labourers, the textile industry attracted foreign labourers. In Enschede (one of these textile cities), immigrant workers from Spain, Italy, Turkey and Morocco were welcomed during the 1960s and 70s. In Enschede, there is a large community that descended from these first immigrants.[70]

The hopes of the immigrants working in the textile industry did not always materialise.[71] Immigrants hoped for large incomes to send back to their families in their home countries. For those who had had good jobs back home, in particular, the wages for uneducated labour in The Netherlands were quite disappointing.[71] Furthermore, the change for some immigrants who had come from large metropolitan cities in Turkey to these quite provincial towns was sometimes seen as a backward move.

Whether the immigrants were welcomed by the population of Enschede is unknown.[69] There are reports that initial contact between first immigrants and the Dutch natives were quite good.[71] They, and later their families, were welcomed into the community, as can be read in the poem 'Javastraat' by the Enschede poet Willem Wilmink. Furthermore, the local government provided all kinds of services for the immigrants. The immigrant children were welcomed into school. In Enschede, for example, special programmes were organised to improve Dutch language skills for the immigrant children so that they would not

fall behind. Furthermore, the labour migrants were given access to the (mental) health services. In the 1990s, long before the disaster, the public and mental health services had culture- and language-specific contact persons: who acted as a kind of cultural broker and interpreter service for immigrants.

Javastraat

Immigranten, immigranten,
niet meer uit Wolvega of Drenthe,
maar uit Spanje, Klein- of Groot-Azië, Afrika,
in de Atjehstraat zijn moslims
bij 't gebouwtje aan de praat
dat nu moskee is en dat vroeger wat
met d'Heiligen der Laatste Dagen had.

Ook in mijn oude school woont de Islam,
maar Shakespeare zei al: "Wat beduidt een naam?"
Allah of God, Jezus of Mohammed,
men bidt hetzelfde angstgebed:

Immigranten

"Spaar ons voor ziekte, schade aan de ziel,
en, Heer, ook voor een tweede Tsjernobyl,
blijf met de mensheid, Heer, blijf onze Vriend,
al is een tweede zondvloed dik verdiend."

Waar men ook nieuwe mensen niet verdroeg,
hier wel. Want deze stad is ruim genoeg.
Molukker, Surinamer, Vietnamees,
hun kinderen praten 't zelfde Enschedees

Willem Wilmink[72]

Even after the first generation of immigrants had been reunited with their families in The Netherlands, they remained focus on their country of origin. They intended to return to their country of origin, eventually. An exploratory study of Turkish migrants in Veendam (a comparable situation) showed that the education the immigrants gave to their children was focused on a return to Turkey.[71]

When this first group of Mediterranean migrants was around retirement age and their children were married and had children themselves who lived in The Netherlands, the desire to return to Turkey or Morocco diminished. With the labour migrants continuing to stay and their families being repatriated, a community of several generations grew in Enschede.

Enschede Disaster Study

The Enschede Disaster Study was the largest disaster study ever launched in The Netherlands and was rooted in the events of the Bijlmer plane crash in 1992.[73] Years after a plane crashed into housing block in the Bijlmer neighbourhood in Amsterdam the (large population of ethnic minority) survivors still suffered from health problems, for which they blamed the disaster and the lack of knowledge of possible chemical or radiological substances that might have been carried by the crashed plane.[74] In response to the persistent rumours in the media and the community, the Dutch Parliament brought its most influential instrument into action: a Parliamentary Inquiry (1998–1999). Following this inquiry, recommendations were made concerning the form and content of health care services for victims of future disasters.[75] Apart from this, it mandated that in the case of future disasters there should be epidemiological studies into possible exposure and subsequent health-related effects. The Firework disaster in Enschede happened just shortly after the completion of this inquiry. Since there was a high percentage of ethnic minority victims among the Bijlmer disaster affected persons, and again among the Enschede disaster a third of the victims had an immigrant background, there was a special focus on these ethnic minorities.

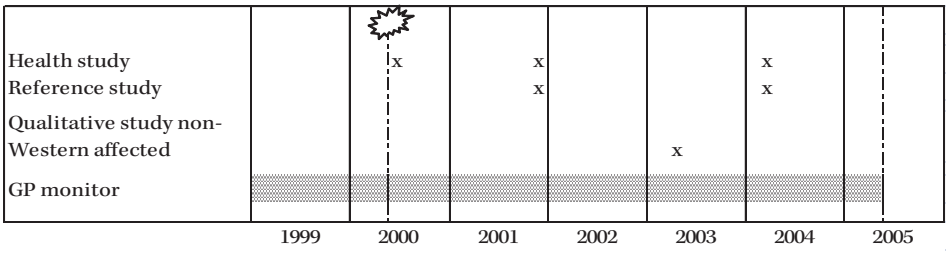
The Enschede Disaster Study consisted of several parts. See Van der Velden et al. (2009)[76] for a comprehensive overview. Data of the following parts were used in the present study:

1) A longitudinal comparative (mental) health study. This study concerned physical and mental health problems among those affected by the disaster, including rescue workers and passers-by, both individual adults and families with children. The study was launched along with the analyses of blood and urine samples. It consisted of several well-known questionnaires. It started 2–3 weeks post-disaster[77] and was repeated 18 months (November–December 2001)[78] and 4 years (May 2004) after the disaster.[79] With the second and third wave a reference study was launched in a (non-disaster-affected) neighbourhood in the city of Tilburg, which had the same socio-economic and historical background as the disaster-struck neighbourhood in Enschede. The Enschede Disaster Study is one of the few disaster studies worldwide that use a reference study.
2) A qualitative study among affected non-Western populations. Since a third of the affected neighbourhood had a non-Western background, a special study was launched for the affected non-Western population. The results of

the epidemiological study 18 months post-disaster for the (mental) health and governmental services[78,80] were quite alarming for the affected ethnic minorities. Mental health services and the Information and Advice Centre for the disaster produced similar reports, particularly with regard to the affected Turkish community. Therefore the qualitative study focused on the affected Dutch Turkish population. The purpose of this study was to gain insight into the mental health problems and complaints presented by the affected Dutch Turkish community and its association with the mental health care focussing on the perspective of those affected. The interviews took place 3 years after the disaster.[81]

3) The GP monitor. In the Dutch health care system, every citizen is enrolled in the practice of a General Practitioner (GP). All general practitioners in Enschede have used the International Classification of Primary Care (ICPC).[73,82] The general practitioner records all problems, diagnoses and interventions in an automated registration. In order to use these GP-records as valuable data, the GPs in Enschede were trained and monitored to use the system thoroughly. Furthermore, it appeared feasible to reconstruct the records for 16 months preceding the disaster. The general practitioners identified those patients whom they considered to have been "directly affected" by the incident. The records of these patients were linked to the database of the Municipal Information and Advice Centre, where all affected were registered.

Figure 1 *Overview of studies used in this thesis*



In this thesis, papers with different research methods are presented to take a close look at the psychosocial consequences for affected ethnic minorities. The aim of this thesis is to compare the long-term psychosocial consequences of a disaster for affected non-Western ethnic minorities compared with the affected Dutch native majority. In order to carry out a cross-cultural comparison non-affected reference groups are used. Furthermore, this thesis is also focused on the exploration of post-disaster consequences from an ethnic minority perspective.

The qualitative interviews are only focused on the affected Dutch-Turkish victims, the largest ethnic group in the district. We used the GP monitor to study the correspondence between self-reported psychological problems and those reported by GPs. The Enschede Disaster Study is a longitudinal study. However, due to capricious response tendencies of the affected ethnic minorities, the data were used cross-sectionally.

Methodology: the challenges in intercultural research after a disaster

An ongoing issue for discussion in cross-cultural research is methodology. Do the results of a study have the same meaning across the different ethnic groups? Are the results of questionnaires based on Western concepts comparable between these different ethnic groups? Is the study group representative for other ethnic groups? In this section, several possible cross-cultural methodological issues will be described briefly. As described in paragraph 1.1, when ethnicity is studied after a disaster, it is often one of the demographic factors. In these large-scale post-disaster studies, only in a small minority of studies attention is given to cross-cultural methodology. This could result in a less reliable outcome.[82]

According to De Jong et al. (2010), there are two key issues in cross-cultural research: the dichotomy between relativism and the universalism of the researchers, and the level of research.[83] In the first issue they describe the background of the researchers. The universalist states that every psychological process in a human is the same in every culture. The cultural differences are to be seen in the behaviour of the underlying common psychological functions. This is in contrast to the relativist, who states that cultural context defines the behaviour of the human. *"According to this perspective, psychological functions (such as language, cognition, perception and emotions) are substantially different between cultures."*[83, p.270] The researchers' paradigm determines the research method. Does the researcher use interviews with room for an emic (perspective of the respondent) style of research? Or when the researchers' paradigm concerns a universal psychological process, does he or she use a more etic (perspective of the researcher) style of research with questionnaires? Nowadays, in cross-cultural research the discussion between the two paradigms has relaxed and both methods are combined.[84]

The second issue is the level of the research. Is the research aimed at the psychological level, or is (and how is) the context taken into account? According to De Jong et al. (2010), the universalist uses contextual factors as confounders for psychological processes and generalizes these confounders for all cultures or societies. In contrast, the aim of the research of the relativist is on the individual

in his or her immediate surroundings. Furthermore, relativists do not extrapolate their conclusions to other groups.[83]

The most common research method used after a disaster is quantitative (mental) health surveys. Conducting these (universalistic) research methods in multicultural groups may present some challenges. There are two major concerns:

First, are Western concepts used by Western scientists of value to non-Western immigrant groups? Many studies have focused on the presence of Western psychological concepts in other countries or cultures. This implies that in designing such a study, the scientific basis of the study and the employed constructs must have the same meaning for both participants and researchers. Failure to appreciate possible differences or even limited use of concepts within different groups is described in the concept of *category fallacy.* According to Kleinman (1977), a category fallacy occurs when a psychological concept or a disorder is not the same in different cultures. Perhaps this is the most basic, and it is certainly the most crucial, error one can make within cross-cultural research.[85] Is the PTSD we define with Western concepts the same as a disorder after a traumatic incident for other cultures? In cross-cultural psychology it is important to take category fallacy into account, otherwise the results have no ecological validity. Since the study of psychological trauma among ethnic minorities is a relatively new area, a combination of several methods is usually advocated as being most appropriate.[86]

The second concern is the cultural bias in research. When designing a study, it is important to take cultural bias – and as a consequence equivalence of the instruments and methods used – into account. Van de Vijver (2011) presents three main possible biases that could be translated into concrete equivalences: *construct bias*, *method bias* and *item bias*.[87] Construct bias corresponds to category fallacy: culture-specific concepts are partly or not at all seen in other cultures. The second category of bias is method bias. Three types of method bias are to be distinguished: *sample*, *administration* and *instrument bias*. Sample bias is caused by the samples' specific characteristics (such as socio-economic circumstances) which can unintentionally affect the results. Another problem that can cause a sample bias is a low response rate, which is not uncommon in research into ethnic minorities.[88] The problem with non-response is that it can bias the results of the target population when the non-respondents systematically differ from respondents.[88] The administration bias may be caused by e.g. the way the

interviewers work and influence the results. And the instrument bias refers to instrument properties, such as the use of response alternatives in Likert scales, which are not identical across groups. The last category of bias Van de Vijver describes is item bias. This differential item functioning refers to the anomaly in the differences at the item level.

Cross-cultural research after a disaster

When designing a study after a disaster under stress, taking cross-cultural issues into account may be a challenge. E.g. when using Western European methods for research, with non-translated questionnaires and methods of sampling that are not specially focused on ethnic minorities, the risk of non-response and several biases are high. However, in this study all questionnaires were translated in English, German and Turkish. Of course these translations did not represent all ethnic minority groups in the sample but it was a very good start. By using the control groups and the GP monitor, this study could make valuable cross-cultural comparisons. Furthermore, there was special attention to reaching out to the ethnic minority sample.

Research questions in this thesis

In general, this thesis aims to study the impact of a disaster on ethnic minorities.

- What are the psychosocial consequences of a disaster's impact on mental health problems for affected ethnic minorities?
- Is the impact of a disaster on mental health problems stronger for affected ethnic minorities than for affected Dutch natives?

Furthermore, this study aims to show the perspective of Dutch Turkish persons (the largest ethnic group in Enschede) affected by the consequences of a disaster.

- What are the psychosocial consequences for Dutch Turkish people affected by a disaster?
- How are the psychosocial consequences for affected Dutch Turkish people after a disaster explained?

Furthermore, with regard to the whole ethnic minority group, the study of psychosocial aspects after a disaster focuses on social surroundings and acculturation.

- Do non-Western minorities enjoy more social support after a disaster than their native affected counterparts?
- Among first-, second- and even later-generation immigrants, acculturation and adaptation to the ethnic majority may be an influential

factor for mental health. Is the way in which affected ethnic minorities are acculturated into Dutch society associated with more psychological problems than their non-affected comparison group?

Finally, after the Enschede disaster, much effort was put into disaster-related mental health services. To acquire access to mental health services, the "gatekeeper" of Dutch mental health services had to recognize disaster-related post-traumatic problems.

- Is there correspondence between self-inflicted and disaster-related post-traumatic problems, and is ethnicity a factor associated with GPs' detection of persistent psychological problems?

Outline of this thesis

In order to explore the psychosocial impact of the Enschede disaster on immigrant victims, this thesis describes studies based on data from the Enschede Disaster Study. In this unique comparative study with control groups 18 months and 4 years after a disaster, several methods were used.

Studies after disasters show contradictory results regarding the impact of a disaster on ethnic minorities and immigrants. In Chapter 2, a controlled study was used to show that the psychosocial impact of a disaster is indeed more severe for immigrant victims than for Dutch natives. This is one of the few studies that compares the levels of psychosocial distress after a disaster between affected immigrants and affected Dutch natives.

Chapter 3 presents a qualitative study. Most studies concerning psychosocial problems after disasters are quantitative epidemiological studies. Quantitative studies give a clear picture of the health conditions of disaster victims. In this qualitative study, a phenomenological perspective of an understanding of the experience, the disaster and its consequences is given. Qualitative studies can be very useful, especially when tackling the problems of category fallacy. What are the concepts that affected immigrants from non-Western cultures use for their possible distress after a disaster, and are these concepts similar to the Western concepts that are used in quantitative research?

Chapters 4 and 5 focus on the situation of the immigrant after a disaster. Two aspects of the *condición migrante* that immigrants live in are studied. The social support system and acculturation to the host society are examined. The study of social support was conducted with the affected and non-affected immigrant and Dutch native sample 4 years after the disaster. While in the Enschede Disaster Study acculturation was only measured 18 months after the disaster, both affected and non-affected immigrant samples were used.

Chapter 6 concerns the correspondence between persistent self-reported post-traumatic problems and the reports by the general practitioners of those affected. The combination of these two study methods (self-administered questionnaires and GP reports) demonstrates again that the results from the questionnaires completed by affected immigrants do not differ with regard to post-traumatic problems.

Whom are we studying?

There is a semantic problem in describing the objectives of this study. People are considered as first-, second- or third-generation immigrants when either they themselves or one or both of their parents are born in a foreign, non-Western country. However, the terms used to define these groups (within this group) are not straightforward: *foreigners*, *strangers, immigrants*, *people of foreign descent*, *ethnic minorities, black and minority ethnic (BME) immigrants*.[88] These terms cover various realities and identities. Furthermore, terminology differs in the USA, UK, Western Europe and even the neighbouring countries of The Netherlands, Belgium and Germany. For example, in the USA only first-generation immigrants are considered immigrants. In this thesis, the term *ethnic minorities* is used to refer to the specific target population. However, when aiming specifically at the (including second and third-generation) immigrant background, the term *immigrant* is used. Furthermore, in some published papers the term *immigrants* is used.

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Chapter 2

Long term differences in psychological impact four years after a disaster for immigrants and Dutch natives

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Submitted

Abstract

Objectives

To examine differences in mental health between ethnic minorities and Dutch natives 4 years after a disaster, taking possible differences in response tendencies into account.

Method

4 years post-disaster, affected and non-affected ethnic minorities (N=212, N=113) and Dutch natives (matched group N=211, N=527) were administered the IES, PTSD-sr and SCL-90-R to examine post-traumatic and general mental health problems. Concerning mental health problems, differences within the minority and native group were used to examine ethnic differences in mental health.

Results

Respectively 61% and 41% of the ethnic minority victims had severe post-traumatic symptoms and had an indication of PTSD. Differences in mental health between affected and non-affected ethnic minorities were significantly larger than between affected and non-affected natives. Findings indicate that ethnic minorities more often suffered from severe and very severe symptoms of depression and anxiety than natives.

Conclusions

The Fireworks disaster in The Netherlands had a major impact on the affected ethnic minorities compared to the ethnic majority. Presumably, these results cannot be ascribed to overrepresentation of symptoms.

Introduction

Relatively few disaster studies in Western countries are focused on mental health disturbances of affected ethnic minorities.[1] Outcomes suggest that (some) minority groups more often suffer from post-event mental health disturbances than the ethnic majority.[2,3,4,5,6,7] For example, 2–3 years after the 9/11 terrorists attacks, African American survivors suffered more from PTSD (20.6%) than Caucasians (10.7%), and Hispanics (10.3%).[8] Furthermore, 1–2 years after the 9/11 attacks, affected Latinos had more persistent PTSD than affected Caucasians.[9]

These findings raise the question: if specific ethnic minorities are more at risk, and if so, why? One possible explanation is that higher post-disaster prevalence in mental health disturbances is caused by a relatively higher prevalence before the event, as was shown in one of the very few disaster studies with non-retrospective collected data on pre-disaster health.[10] Differences between minorities and natives in social economic status, since SES in many cases tend to be lower, may be another reason (Bonanno et al., 2010), i.e. may explain why studies that control for SES are less likely to find differences in post-event mental health disturbances.[11] For example, another study after the 9/11 terrorist attacks show that the variation in PTSD between White/Caucasians, African American, Hispanic and Asian survivors was diminished when controlled for socioeconomic differences.[1,12] Another possible explanation is accessibility to mental health services. Minority groups tend to be neglected in mental health services.[13]

Of interest is the alternative hypothesis that differences may (also) be caused by differences in responses to questions with respect to mental health. The numbers of affected immigrants with mental health problems can be overestimated. A tendency to over-report depressive symptoms has been suggested as an explanation for the high levels of depressive symptoms found in population studies of Turkish and Moroccan immigrants in The Netherlands and Belgium.[14,15] If differences in post-disaster functioning may partly be attributed to this tendency, one should control for this tendency one way or another.

In this study, we examined mental health disturbances among ethnic minorities and natives affected by a major disaster in The Netherlands. In order to solve the possible problem of response tendency we assessed the health of comparable groups of non-affected minorities and natives. Instead of directly comparing the health, while taking measures of SES into account, we compared differences within the groups of natives and minorities.

Method

Background

On May 13, 2000 a fireworks storage facility in a residential area in the city of Enschede in The Netherlands exploded. 23 people were killed, 900 were physically injured, and approximately 500 homes were destroyed or severely damaged. The Dutch government declared it a national disaster and decided to launch the comprehensive and comparative Enschede Fireworks Disaster Study. The Medical Ethics Committee of The Netherlands Organisation for Applied Scientific Research approved the study protocols.

Procedures

The procedures, methods, and non-response rates were described in earlier studies.[3,16,17] The study consisted of three waves of assessments: 2–3 weeks, 18 months and 4 years post-disaster. The study was conducted among adult residents, passers-by, and rescue workers. A comparison study was carried out in the second and third waves.

Ethnic minorities were defined as those who are foreign-born as well as those who are born in The Netherlands with at least one non-native parent. In this study the ethnic minority group contained a large diversity of non-Western nationalities. Dutch natives were defined as those individuals who were born in The Netherlands with neither parent born outside of The Netherlands. The largest group of immigrant victims and controls in our study consisted of people of Turkish origin.

A non-exposed comparison group was composed of residents of Tilburg, a town located in another part of The Netherlands with a similar historical background to Enschede. The comparison group was stratified according to sex, age, educational level, country of origin, and general health status.

Both in the third wave of the main study and in the comparative study the respondents were asked to participate with the same methods (letter of invitation, posted questionnaire, and personal telephone call). The letters were translated into English, German and Turkish. The telephone calls were, as often as possible, made by persons who could speak Dutch and a specific foreign language.

For the present study data from the third wave (January–March 2004) were analyzed.

Sample

A total of 1,567 disaster-affected residents completed the questionnaire in Wave 1. This is an estimated response of 30% from all of the victims in the affected neighbourhood. In Wave 3 the response rate was 69.9% for survivors who responded in both Wave 1 and Wave 3. The immigrant group had a slightly higher response in Wave 1. The response rate on Wave 3 among the immigrant group was 49% of the first wave. With regard to disaster-related experiences and relocation, the respondents and non-respondents from the first and third waves did not differ. For psychological problems at Wave 1 there were no significant differences between respondents and non-respondents at the follow-up stage. Furthermore, non-response analyses of Wave 1 showed that the prevalence rates of mental health problems were not affected by the individuals' non-response to the study.[17] The comparison group (640 non-exposed adults) participated in Wave 2 (response 61%) and Wave 3 (response 78.5%).

Because of differences between the disaster-affected ethnic minorities and natives, we matched on disaster related factors such as: (1) having a destroyed house, (2) the death of a relative, (3) seeing deceased people, and (4) feeling explosion waves. 221 out of 756 affected Dutch natives were fully matched to the affected ethnic minority group.

Measures

The health survey included questions on demographic, mental health problems and lifestyle characteristics.

Mental health disturbances were measured by the Symptom Checklist 90 (SCL-90-R).[18] We separated the scales into high (80th percentile) versus low scores, according to established references for the healthy Dutch population[19] and the 95th percentile to identify indication of a disorder. The internal consistencies were good ($\alpha \geq .86$) in the current groups.

Disaster-related post-traumatic symptoms among the affected were assessed with the Impact of Event Scale (IES).[20,21,22] The internal consistency of the IES total scale for the current sample was good ($\alpha \geq .96$).

The Self-Rating Scale for Post Traumatic Stress Disorder (SRS–PTSD)[23] was administered to affected residents (PTSD based on the criteria of DSM–IV[24]). Internal consistency was good ($\alpha \geq .94$).

Participants were asked whether they had contact with more specialized Mental Health services, i.e. a specialised After Care Unit, local mental health organization, a private psychiatrist, a psychologist, or a psychotherapist at the time of the survey. For the present study, MHS users were defined as using any of

these services between Wave 2 and Wave 3, or after the disaster in general. The questionnaire, including informed consent, was available in Dutch, English, German and Turkish and was translated and reverse translated according to the procedure of Van de Vijver and Leung.[25]

Data analyses

With all analyses we controlled for gender, education and age. Furthermore we repeated the same analyses with financial problems, and MHS-use separately. We analyzed the psychosocial impact of the disaster for affected ethnic minorities by using logistic regressions for differences in the SCL-90 scales between the affected and non-affected groups within ethnicity. Furthermore, we constructed a dummy variable, which contained the 4 groups: affected ethnic minorities, non-affected ethnic minorities, affected Dutch natives and non-affected Dutch natives. In the final Odds Ratios, we analyzed whether differences between the ethnic minority or Dutch native groups (affected and non-affected) were within the range of the other groups. If the Odds Ratio was significant, the variation between the two ethnic minority groups was different from the variation between the two Dutch native groups. Furthermore, in repeated analyses we used financial problems and MHS-use as covariates too.

Results

Demographics and MHS-use

There are some demographic differences between the four groups (see Table 1). About 41% of the affected ethnic minorities have a job 4 years after the disaster. Almost a quarter of the affected ethnic minorities is on prolonged sick leave. And a fourth of the affected ethnic minority group has financial problems. However, these percentages are not significantly different between the ethnic groups and therefore cannot be explained by the impact of the disaster. Overall OR for a paid job is (OR: 0.51 (0.27–0.98)), for prolonged sick leave is (OR: 1.40 (0.47–4.12)) and for financial problems is (OR: 0.33 (0.23–1.45)).

Of the affected ethnic minority group, 57% received mental health services after the disaster; in the affected native group it was only 46%, which is significantly different (χ^2=4,4; p ≤ .05). During the last 1.5 years, the differences in use of mental health services was more profound between affected ethnic minorities and natives, respectively 37% vs. 18% (χ^2=19,3; p ≤ .001).

Table 1 *Sample Characteristics: Demographic characteristics, work related characteristics, financial problems and mental health use*

		Ethnic minorities				Dutch natives						
		Affect group		Non-affect group		Affect group		Non-affect group		χ^2	*df*	*P*
		N	%	N	%	N	%	N	%			
Sexe	Female	123	58,0	66	58,4	116	45,0	295	56,0	0,4	3	ns
Age	18-35	89	42,0	22	36,1	80	37,9	169	32,1	19,2	6	0,004
	36-50	73	34,4	24	39,3	56	26,5	169	32,1			
	51+	50	23,6	15	24,6	75	35,5	188	35,7			
Educational level	Primary school/ Junior high	125	61,9	72	64,3	98	48,0	250	48,0	22,5	6	0,001
	Senior high/ Professional	57	28,2	27	24,1	68	33,3	169	32,4			
	High professional/ university	20	9,9	13	11,6	38	18,6	102	19,6			
Work	Paid job	81	41,3	49	46,7	127	62,3	308	59,5	26,3	3	0,001
	Prolonged sick leave	42	24,1	11	11,8	11	6,4	15	6,3	64,8	3	0,001
Financial problems		49	25,0	14	13,0	25	12,0	17	3,3	76,1	3	0,001
Mental Health Services	MHS use last 1,5 year	77	37,0	37	17,8	8	7,2	43	8,2	100,4	3	0,001
	MHS use since disaster	118	56,5	15	13,4	96	46,2	90	17,1	150,8	3	0,001

Mental health disturbances

In the affected minority group 61% had a severe level of post-traumatic symptoms and 41% had an indication of PTSD. Table 2 shows that 59–65% of the affected ethnic minorities suffered from mental health disturbances 4 years after the disaster.

To examine the differences between the two affected groups, we compared the impact of the disaster with distress scores in the control group. In 5 out of 7 scales, the differences between the affected ethnic minorities and their control group varied significantly with the differences between the native group and their non-affected control group (see Table 2; significant OR's ranging from 2.51 for hostility to 4.96 for depressive symptoms). When controlling for financial problems, the pattern of significance was not changed. However, when controlling for mental health use after the disaster the risks for 3 scales were still significant, except for agoraphobia, feelings of insufficiency, severe feelings of hostility and sleep disturbances.

Mental health disturbances indicative of a disorder

Using a cut-off level indicative of a psychiatric disorder, there is a slight adjustment. The percentage of the mental health disturbances on disorder level in the affected ethnic minority group varied from 28% for sleep disturbances and 30% for very high level of symptoms of somatisation to 41% for insufficiency. The differences between the affected and non-affected ethnic minorities have three times the risk to be higher in 3 scales compared to the native groups. The scales depressive symptoms (OR: 3.38 (1.31–8.68)), anxiety symptoms (OR: 3.68 (1.27–10.66)) and symptoms of insufficiency (OR: 3.14 (1.34–7.35)) show still significant differences between the affected and non-affected groups. Again, when controlling for financial problems, the pattern of significance does not change. When controlling for mental health use after the disaster the risks for 3 scales are still significant, except for agoraphobia, insufficiency, severe feelings of hostility and sleep disturbances.

Discussion

To our knowledge, this is the first internationally published disaster study that proves that there is a stronger psychological impact of a disaster on affected ethnic minorities compared to affected natives. This variation in impact exists despite differences in social demographic background and possible artifacts in the completion of the questionnaires. The use of mental health services can decrease ethnic differences in impact of the disaster, except for symptom-clusters that have a high comorbidity with PTSD, such as depression and anxiety.

Table 2 *Ethnical differences and impact of for psychological stress at levels of disorders 4 years after a disaster when controlled for gender, education and age*

	Ethnic minorities				Dutch natives				Differences aff vs n-aff ethnic minorities and aff and n-aff Dutch natives		
	Affect group %	Non-affect group %	OR[a]	(95% CI)	Affect group %	Non-affect group %	OR[a]	(95% CI)	OR[a]	(95% CI)	
Psychological Distress											
Depressive symptoms	65,1	40,4	3,27	1,73 - 6,20	20,0	21,0	0,86	0,57 - 1,32	3,82	2,02 - 7,24	s
Anxiety symptoms	59,4	23,4	5,70	2,78 - 11,67	17,5	14,4	1,16	0,74 - 1,82	4,96	2,44 - 10,09	s
Symptoms of somatisation	61,9	39,6	2,77	1,47 - 5,20	15,6	16,2	0,93	0,58 - 1,48	3,03	1,57 - 5,86	s
Hostility	62,7	35,1	3,22	1,70 - 6,12	22,2	17,1	1,28	0,84 - 1,94	2,51	1,33 - 4,76	s
Agoraphobia	57,8	38,7	2,06	1,10 - 3,86	21,8	18,2	1,25	0,82 - 1,89	1,69	0,90 - 3,17	ns
Symptoms of insufficiency	61,9	44,5	2,01	1,09 - 3,69	32,7	18,8	1,27	0,85 - 1,91	1,61	0,87 - 2,97	ns
Sleep problems	60,5	31,5	3,92	2,01 - 7,62	24,8	17,6	1,49	1,00 - 2,24	2,62	1,36 - 5,03	s
Psychological Distress: level of disorder											
Depressive symptoms	36,0	9,2	5,03	2,34 - 10,81	7,8	5,2	1,49	0,86 - 2,59	3,38	1,31 - 8,68	s
Anxiety symptoms	31,8	8,1	4,98	2,17 - 11,40	5,3	3,7	1,35	0,69 - 2,63	3,68	1,27 - 10,66	s
Symptoms of somatisation	29,9	10,8	3,86	1,78 - 8,37	5,9	3,1	1,68	0,85 - 3,33	2,30	0,82 - 6,47	ns
Hostility	38,9	16,2	3,95	1,99 - 7,84	7,2	4,2	1,62	0,90 - 2,92	2,44	0,99 - 6,03	ns
Agoraphobia	34,9	15,3	2,79	1,43 - 5,45	7,8	5,6	1,33	0,77 - 2,30	2,10	0,89 - 4,99	ns
Symptoms of insufficiency	41,2	15,5	3,98	2,06 - 7,67	7,7	6,0	1,27	0,74 - 2,18	3,14	1,34 - 7,35	s
Sleep problems	27,7	8,1	5,32	2,15 - 13,17	7,8	3,4	2,39	1,32 - 4,36	2,22	0,75 - 6,59	ns

[s/ns] Significant (s) or non-significant (ns) differences between OR's from the ethnic minority groups and the Dutch native groups

The Fireworks disaster in Enschede undoubtedly had a major impact on the affected ethnic minority residents. Within the affected minority group, a majority had a general feeling of distress or discomfort: 58–65%. The levels of mental health disturbances indicative of a psychiatric disorder were lower, but even 28–41% of the affected ethnic minorities. Furthermore, our results show that the long-term psychosocial impact of the disaster for affected ethnic minorities is stronger than for affected Dutch natives, even when controlled for financial problems and the use of mental health services.

The long-term differences in impact can be explained by a combination of the *condición migrante* ethnic minority groups lived in[26] before the disaster, and a prolonged, negative spiral of loss of resources described within the Conservation of Resources (COR) theory.[27] The condición migrante refers to the less favorable socio-economic circumstances ethnic minorities live in[28], the stress of living in a country with another culture and the adaptation process to this new culture[29,30], the reason for migration, and being a minority, e.g. in culture, religion and race. The COR theory states that people strive to retain, protect and build resources and that what constitutes the stressor to them is the potential or actual loss of these resources. According to this theory, resource loss is disproportionally more salient than resource gain. Therefore, those who already lack resources are more vulnerable to resource loss.[27]

A disaster with a huge material impact could aggravate the condición migrante. In a powerfully entangled combination with post-traumatic symptoms, it could prevent affected ethnic minorities from investing in their resources again, especially when the affected ethnic minorities have fewer functional skills in the host society.[31] Furthermore, despite living in more collectivistic communities[29], ethnic minority groups' social networks are less adept at dealing with the emotional problems of victims.[32,33]

Limitations

Despite the strengths, some limitations should be considered. We only used self-reported questionnaires. We did not use diagnostic interviews. However, studies have shown that the SCL-90 is a usable instrument for psychological distress in multi-ethnic groups.[34]

The response to this study was rather low. In the first wave (2–3 weeks post-disaster) the estimated response was 30%, with an over-representation of women and ethnic minorities in comparison to the overall population affected by the disaster. Nevertheless, we found no indication that this over-representation affected the prevalence rates for psychosocial problems.[19]

Another methodological issue in studies of ethnic minorities is the possible

differences in response tendencies in questionnaires between different ethnic minorities.[25] Possible response tendencies were neutralized as much as possible in this study by indirectly comparing the affected ethnic minorities with affected Dutch natives.

Despite the design of the study with a control group, we should be cautious if we seek to generalize these findings globally, or even in the Western world. Actually, this counts for many studies with ethnic minorities as their main focus. Every group has its own culture, background and history.

Results show that despite the availability of mental health care systems (which were also accessible to and used by affected ethnic minorities[35]) the impact on an affected ethnic minority community can be profound. Even when we take the methodological issues and the socio-economic situation of immigrants raised by Bonnanno et al. (2010)[11] into account. Therefore, our findings clearly suggest that in post-disaster mental health care programs, special long-term attention should be given to ethnic minorities and immigrants. In the case of Enschede, where the individual post-traumatic problems were recognised by GPs[36] and the majority of the affected ethnic minorities had contact with mental health care services[35], interventions should focus more on the diminution of the vulnerability of the affected immigrant within the fragile community.[37]

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Chapter 3

Turkish immigrant narratives of the fireworks disaster in The Netherlands: A qualitative Study of the psychosocial context post-disaster

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Abstract

Most studies concerning psychosocial problems after disasters are quantitative, epidemiological studies. Epidemiological studies give a clear picture of the health conditions of victims of disasters. In this qualitative study a phenomenological perspective of an understanding of the experience, the disaster and its consequences is presented. The first striking outcome is the prominent role of anger, irritation and hostility in the daily life of those affected. Turkish affected immigrants suffer from these externalising emotions due to interactions within their social system. On the one hand, the presence of anger and irritation is understandable as a result of the psychological processing of traumatic events. On the other hand, these emotions can also be traced back to dissatisfaction and frustration as a result of the disaster. Both the disappointment concerning the fact that such an event took place in The Netherlands, as well as the settlement of the material losses, could enhance these feelings. A second striking outcome is that the participants indicate that their health problems only arose *after the disaster*. This is consistent with the observation that people from non-Western, collectivistic cultures are more inclined to find external explanations for psychological problems. The reason for this external attribution among the Turkish victims may lie in preventing loss of face, social status or stigmatization.

Introduction

> When the disaster took place, I was at home with my wife, parents and brother. Our house bordered upon the factory site through our yard. (...) We heard bangs (...) It turned out to be the depot. We thought: they must have been busy with the fireworks again. (...) At the next bangs, we were all standing in front of the house. We even yelled: run away! to the police, but they just kept standing there. We did run away. At the third bang, we were flung into the air. I saw my brother fall, holding his heart. My father picked him up. I could still see that as well. After that, everything became pitch black because of the dust.
> *Man, second-generation immigrant, 33 years old*

On a sunny Saturday afternoon on 13 May, 2000, a neighbourhood in a town in the eastern part of The Netherlands was startled by a series of bangs filling the air; the noises came from a nearby fireworks depot, and were followed by a huge explosion. 23 people were killed and more than 900 people were injured. The entire adjacent neighbourhood was virtually destroyed. The neighbourhood had housed many people of non-Western origins, particularly Turkish immigrants.

Consequences of disasters

The experience of a disaster is accompanied by an acute disruption of daily life. Next to the actual losses such as a house, infrastructure and loss of finances, disasters may have health consequences during the first days, weeks, months and even for years after.[1] Those affected suffer from anxiety, depressive feelings, (unexplained) medical complaints, fatigue, irritation, sleeping problems and grief.[2,3,4] Cognitive perspectives of trauma show that feelings of powerlessness may occur and familiar ideas and beliefs may be lost.[5] The psychological coping processes after a disaster are characterised by alternating between both denying and reliving the experience and those affected have to deal with painful memories, nightmares, feelings of uncertainty and an absence of safety, sometimes for several years afterward.[6] Epidemiological studies after disasters have shown that ethnic minority victims are especially vulnerable to developing post-traumatic problems.

Consequences of a disaster for Turkish immigrants

A large-scale questionnaire study that followed the Enschede Fireworks disaster with a comparison group confirmed the aforementioned findings. 18 months after the disaster, Turkish victims in particular suffered from serious intrusion

and avoidance reactions (72%), feelings of depression (79%), feelings of fear (80%), hostility/animosity (79%) and somatic complaints (82%).[7] Compared to the differences in health between Dutch affected natives and their reference group, the Turkish affected immigrants had considerably more mental health problems than the Turkish immigrant reference group. The psychological impact of the disaster was ultimately larger for the Turkish victims in comparison to the Dutch victims.[7] Other studies on the Enschede Fireworks disaster showed that the ethnic minorities were at greater risk of developing psychosocial and health problems after a disaster.[8] Even when the situation of the people before the disaster was taken into account[9], the impact of the disaster on mental health was greater for the affected Turkish immigrants than for affected Dutch natives.[7]

A possible explanation for the aforementioned differences is the so-called *condición migrante*[10], or the circumstances in which immigrants are living in The Netherlands. For instance, they can have a lower Social Economic Status (SES)[11] than native Dutch people, and are subsequently confronted with exclusion from society and discrimination. Although SES and ethnicity should not be confused, they may nevertheless cause immigrants to be more vulnerable for the negative consequences of a disaster.[11,12,13] It may be more likely that they become victims of disasters. People with a lower SES frequently live in disadvantaged neighbourhoods, often located close to industrial areas.[14,15]

Additionally, acculturation may influence the psychological consequences of a disaster. Acculturation refers to the social, cultural and psychological processes, which play a part in adapting to the new society and refers to the degree to which norms, attitudes, language and traditions of the original culture are maintained, or are adopted.[16] Acculturation stress refers to the stress that is the consequence of culture change.[17] For instance, the adaptation to the host society depends on, amongst other things, the time the individual has spent in the new country, and the degree to which one can make oneself understood, which subsequently helps the individual to feel at home in his new surroundings.

Problem definition

Quantitative studies give a clear picture of the health conditions of victims of disasters. Furthermore, they provide important statistical evidence about the implication of identified or supposed aetiological factors, but are unable to uncover the actual, personal circumstances or the construction of meanings that lie beneath the gathered "facts" within complex, fluid social contexts. In the present qualitative interview study, we seek to achieve an emic perspective on the understanding of the experience, the disaster and its consequences.

This research focused on the following questions:

- What is the nature and the content of the problems that have resulted from the Fireworks disaster after approximately 3 years, as experienced and reported by the Turkish affected immigrants themselves?
- What are the backgrounds of these problems or complaints, according to those affected?

Method

73 Turkish victims were approached in person by a key person in the Turkish community of Enschede. Eventually, 41 people participated in the interviews. During the research, 5 more Turkish victims presented themselves. Those who refused to participate were asked why they did not want to participate; some stated they did not have time, while others stated they did not have any complaints; others did not want to disclose any information, as the interview did not seem useful to them or due to the fact that they had discussed their problems very often already. Furthermore, some simply did not wish to cooperate, as they felt it would not help them and because they felt they had been treated impolitely by the authorities involved in the aftermath of the disaster.

Sample profile

25 women and 21 men were interviewed. 19 persons were 21–30 years, 13 were 31–40 years, 4 were 41–50 years and 10 were 51–60 years. All interviewees indicated they were Muslims (44 Sunnis, 2 Alevis), with the majority of the participants having been part of the neighbourhood concerned: 14 of the 25 participants lived in the neighbourhood but were not present during the actual explosions. Both first- and second-generation immigrants were represented in the research group, as well as victims with and without mental health problems. This sample of participants is considered to be satisfactory, as the most important characteristics connected with the disaster and the demographic make-up of the population group are represented.[18,19]

Data collection

Considering the purpose of the research, the interview schedule was developed in such a way as to avoid etic constructs: e.g. psychological problems were not defined beforehand. By working in this way, participants were able to indicate, in their own words, precisely what their problems were (if any). In order to give the respondents a loose rein to discuss their experiences in their own words, the interviewers asked generally formulated questions, such as: when you were

living in Roombeek (the affected neighborhood), what did you do? What did a day in your life look like? What was a normal day like before the disaster? and How does that day look now, after the disaster? By adopting this method of questioning, the interviewers subsequently explored the problems mentioned by the participants. Although not specifically asked about, the actual settlement of damages arising from the Fireworks disaster was frequently mentioned in the interviews; in these instances, the legal and financial settlements were an important part of the conversation. The researchers were especially interested in the personal aspects of the settlement if the respondents themselves initiated a conversation on the subject.

The researchers sought to put the participants at ease by first asking the participants about less emotionally-charged subjects, such as their migration to, or their youth in The Netherlands. If the conversation gave cause to do so, the order of the various subjects was changed.

The interview schedule was discussed with a Turkish immigrant psychotherapist/researcher and an employee of the organisation that arranged care after the disaster.

The affected Turkish subjects were interviewed at home or on location, as they preferred. The 46 interviews lasted 1 to 2 hours. In 16 cases, family members were present during the interviews, and spouses were interviewed at the same time. The interviews were conducted by a Dutch researcher who was familiar with the Turkish language, and by a researcher speaking both Dutch and Turkish. 12 interviews were held by one researcher while the others were held by the aforementioned two researchers. The participants themselves could opt for the language of the interviews: 19 chose Dutch, the others chose Turkish. The interviews were recorded and transcribed with the participants' permission; researchers' notes on their impressions, initial findings or special details[20], have been added to the reports.

Data analysis

The interviews were independently transcribed and analysed using a comparative method.[21] At the start of the research, the data collection was of an explorative nature. Next, the interviews were used to verify or refute earlier findings. The situations were categorised based on differences and similarities in the stories, as well as according to the characteristics and backgrounds of the participants. Data collection and the first data analysis took place at the same time, which ultimately led to new questions and insights, and made clear whether the data collection should be continued.

Themes relating to the psychosocial consequences of the fireworks disaster were grouped and compared. The researchers provided coded text fragments, using both theoretical concepts and in-vivo codes. Both theoretical and in-vivo codes were discussed by the authors. In order to study the phenomena, the fragments belonging to a certain theme have been compared. Research data have been categorised and processed with the help of the computer program MaxQDA[22]; see Table 1 for some examples.

Table 1 *Examples of the coding system*

Main code	**Sub code (theoretical and in vivo)**	**Interview fragment**
Health after the disaster	Depressive feelings/ Fatigue	*"I feel wilted"*
	Recovery	*"we have worked hard and therefore we're alright again now"*
	Anger and Aggression	*"a lot has changed after the disaster; I have become more impatient and I can quickly snap and be blunt"*
Acculturation	*loss of roots*	*"after twelve years of being abroad, I'm treated like a foreigner in Turkey"*
	Opposite *loss of roots*	*"the Turkish culture is always open and welcoming. I always feel very much at home there"*

Results

The interviews were held 3 years after the disaster, and the problems described were related to this period. The themes described here are the most mentioned answers by the interviewees to the question of consequences experienced daily after the disaster.

Anger and irritation: "This disaster was caused by human hands"

Anger is the most important and most frequently mentioned psychosocial problem. Some interviewees only noticed they were angry when others pointed it out to them. And in some cases, this anger caused a feeling of division.

> People ask me whether I have a twin sister. One of the twins is very emotional and the other is very aggressive and angry. This change can happen at any moment.
> *Woman, first-generation immigrant, 25 years*

The interviewees indicated that their anger sometimes literally made them sick. They all blamed the disaster for this irritability and these anger attacks. Interestingly, none of them took his or her anger out on him or herself (i.e. self-harm or blame). They mainly discussed anger and rage in connection with their social environment, such as anger directed at their partner, their children, family, clients or co-workers. When this anger and irritation culminated to such an extent, that it started to be directed at their families, some participants sought professional help.

> The feelings of stress and aggression were getting worse. But I just let it go. Only after I was angry at my family, so angry that I hit them, did I look for professional help. I really hated the way I behaved in hurting my family and I became more and more desperate, that I would do something that was irreversible.
> *Man, second-generation immigrant, 41 years*

A frequently-mentioned cause of these feelings of anger was the actual conclusion of the disaster by several governmental agencies. Many interviewees became angry about this subject. They spoke of their frustration about the decisions made by governmental agencies during the disaster, the poor state of the temporary housing, the contact with mental welfare institutions or organisations dealing with personal injury. It was not the trauma of experiencing the disaster itself that caused their irritation and anger towards their loved ones, but – in their eyes – the "disaster after the disaster".

Fatigue and fear: "I feel wilted"

Apart from anger and irritation, the victims mentioned other problems as well. A 56 year-old man stated: "*I used to be a very healthy person, but now after the disaster I feel wilted*". By this, the victim meant he was fatigued, felt depressed.

The fatigue had an effect on his family too. This man felt guilty towards his children: he could not take proper care of them. Second-generation immigrants who have the responsibility of taking care of their parents felt equally bad that they could not properly look after their families anymore. Being a "bad daughter" or an "incompetent son" made them feel guilty and ashamed. Furthermore, they feared the community's opinion of them about not being a good daughter or son anymore.

The participants also frequently mentioned problems concentrating. A woman who was educated in The Netherlands and spoke Dutch very well noticed that her knowledge of Dutch was decreasing. Some were left unable to read books or suffered from a loss of concentration at work. Other, young first-generation immigrants, who were learning Dutch, said that they are unable to concentrate on their education and that also their ability to speak Dutch was declining. For first-generation marriage migrants who did not have a job, this meant that they had to stay at home more, because of the language problems they found it harder to take part in Dutch society. The world they were living in became smaller and more "Turkish". And as a consequence, their social support system declined.

Shame: "In tears, I accepted the money"

A large number of the houses in the neighborhood were entirely destroyed or made uninhabitable by the fireworks disaster. The feeling of shame owing to material damage was mentioned in a number of interviews. Many victims felt it was a disgrace that their house was destroyed in the disaster; that they no longer had their own place to live in or their own personal space. A marriage migrant explained what she meant by this:

> In our culture, not having your own space, your own spot, is one of the worst things that can happen to you. You feel like a tramp and I'm embarrassed by it. Even though, of course, it's not our fault that our house is gone. Perhaps Dutch people can adjust more easily and perhaps they attach less value to it than Turkish people.
> *Woman, second-generation immigrant, 29 years*

Interviewees experienced a fall in societal status, for which they were not responsible. They felt embarrassed that they had to invite friends or family to a temporary house, which was about to be demolished. As a consequence, some of them did not invite any more visitors. They also felt embarrassment by having to accept donations.

> Even when we picked out basic things [such as a couch, a stove], I felt embarrassed. There was a man with a camera walking around and I did not want to be on TV, because I was embarrassed that my family would see that.
> *Woman, first-generation immigrant, 21 years*

Accepting money from individuals was equally difficult for some:

> We arrived [the day after the disaster] at an empty house in a neighbouring city. An old lady rang at our door and just gave us a large amount of money. I was very grateful, please don't get me wrong, but I was so embarrassed when I accepted the money.
> *Man, second-generation immigrant, 29 years*

In tears, the husband and wife embraced the old lady, but the husband could not look her straight in the eyes. The husband of a female respondent *(second-generation immigrant, 28 years)* spoke about the (damaged) second-hand furniture they were given to use following the disaster. Many interviewees could not comprehend this. "That is very difficult in the Turkish culture. It is grieving and offensive to give second-hand clothes and stuff. I understand it's well-intended, but then at least do it carefully."

Some were not very happy with the separate position they had within the Turkish community because of the financial aid they received.

> I used to work and build something up and now that is gone. (...) Everything I buy now is tainted by the thoughts of people who think and say we became rich due to the disaster, even though I lost everything.
> *Man, first-generation immigrant, 62 years*

Family relations: "In bad times, you really get to know people"

In general, several units of an extended Turkish family lived in the affected neighbourhood. In many cases the disaster hit several members of one extended family. As a result, the aftermath of the disaster put noticeable extra pressure on the second generation. Aside from its own problems, the affected second generation had to arrange for the settlement of affected family members who were not able to speak Dutch. Subsequently, participants indicated that caring for their family hampered their daily activities. Sometimes, the disaster made them more aware of their family. One man, who, together with his wife and parents, lived very close to the fireworks depot, had to make many arrangements in connection with his

business in the neighbourhood. His parents were dependent on him, and so he believed it was his duty to arrange many practicalities for them. The pressure to arrange their income through his business, his own housing and the pressure to arrange everything for his parents changed him personally. He said he lost his former rebelliousness and is no longer prepared to "go to any extreme length to be proved right" instead, he first considered the consequences for his family *(man, second-generation immigrant, 33 years)*. Furthermore, sometimes he felt that the pressure was too overwhelming: he had to keep things running not for himself but for his wife, family and parents. The fact that he had to take care of his father made him feel ashamed.

> I feel like my father and I are avoiding each other at the moment, because by seeing each other we are reminded of the disaster. We used to be very close. But after the disaster it fell apart and he is getting worse and worse. (...) Nothing is left anymore of the father I used to look up to.
> *Man, second-generation immigrant, 33 years*

The consequences for family relationships vary significantly. For some, the family bond became stronger, but not all families were so lucky. Some stayed for a time with their family while the houses were demolished. In Turkish culture it is unthinkable not to take your affected family into your home. This resulted in overcrowding of family homes, sometimes for months.

For a number of people, contact with family in Turkey declined due to the disaster. The family in Turkey plays a large role, particularly for many marriage migrants. There, they had a large social system but, in The Netherlands, "we have to manage with people who are here" (*woman, first-generation immigrant, 24 years)*. Here, they are often completely dependent on their families-in-law and their partners. If this contact deteriorates because of a disaster, they become socially cut off and are isolated socially and feel lonely. The deterioration of the financial situation prevented visits to relatives; some had not been to Turkey for years.

Segregation: "Back to your own culture"

Most participants even those who grew up in The Netherlands indicated that the disaster caused them to appreciate their Turkish background more, because family ties were revived after the disaster. One woman rebelled against her family and the Turkish culture during her adolescence by becoming increasingly Dutch and having many Dutch friends. After the disaster, however, she realised she

could potentially lose everything in one blow. Because of the improved contact with her family, she started to appreciate the Turkish culture more.

> Taking a humble position and being considerate of the family. You are not the only one who counts.
> *Woman, second-generation immigrant, 28 years*

Some respondents indicated that they had become more religious since the disaster. "The disaster has been a test of Allah" (*man, second-generation immigrant, 44 years*). Individuals in this situation now tend to go to the mosque more frequently and, in this way, they have revived their connection with Turkish culture too. Others fell back on their social networks and Turkish culture as a result of their fears and depression; they literally stay inside a lot more. Since the greater part of families mainly speak Turkish and in many cases, even the TV is tuned to a Turkish channel, those affected are increasingly separated from Dutch society. One victim who grew up in The Netherlands says she started speaking Dutch less fluently because of her problems. She hardly went outside anymore and she met very few Dutch people.

Participants have lost faith in The Netherlands since the disaster, as their expectations for settlement were not fulfilled. They felt that they were no longer appreciated and were (sometimes unintentionally) discriminated against.

> The day after the disaster we could pick up our stuff from the Red Cross. A Dutch relief worker came up to me and asked for my passport, in the presence of all those other victims. He did apologise later on.
> *Man, second-generation immigrant, 34 years*

One man explained that his attitude towards The Netherlands had changed because of the slow settlement of the material losses from the disaster. The bureaucracy that came along with this is seen by the Turkish victims as something "typically Dutch". In addition, some respondents had the distinct impression that native Dutch people were favoured. A younger brother of an interviewed woman who was present during the conversation, said:

> Previously, before the disaster, I thought The Netherlands was the best country. But after a disaster like this, you can see the true face, and I'm heavily disappointed. Back in Turkey, the system works in a similar way. But here in The Netherlands you don't expect it and that's why I'm more suspicious.
> *Woman, first-generation immigrant, 29 years*

When the participants compared the disaster in The Netherlands with earthquakes in Turkey the following argument was often made:

> After the earthquake in Turkey, the aid was not as good as here of course. I was affected by the earthquake in Adana; we slept outside. If the level of assistance of The Netherlands was like in Turkey it would be a miracle. But here in a modern European country the aid could have been better and should have been better. A country like The Netherlands should really be ashamed that the relief was so chaotic and miserable.
> *Man, first-generation immigrant, 50 years*

Resiliency: "Just tackle the problem and deal with it."
Some respondents had no problems at the time of the interview, e.g. a woman who was raised in The Netherlands and lived with her parents at the time of the disaster. Although she was very near to the explosions, little had changed in her life because of the disaster.

> My day is just the same as before. Just after the disaster (...) it was hectic. Sometimes, I remember the disaster, when I'm driving along the site. But it is not upsetting to me.
> *Woman, second-generation immigrant, 29 years*

Together with her father, she arranged the finances and solved practical problems in their badly damaged home. "Anyway, the way I was raised was that you had to resume the threat or life. Just tackle the problem and deal with it!" Many of the interviewees without problems had a paid job. At times when they do not feel too well, they find it pleasant to work. It provides distraction and they feel supported by their colleagues.

Discussion

Three years later, a disaster can still have a negative impact on the daily life of those affected, which appears to be the case based on the interviews we conducted. Remarks like "the disaster ruined our lives" and "without the disaster, there wouldn't have been so many problems", illustrate this.

The large-scale quantitative health research also showed that many Turkish victims suffered from multiple health complaints, and that these complaints occurred significantly more often with them than with other Turkish immigrants who had not experienced this disaster.[7,8]

The first striking outcome of the qualitative research is the prominent

role of anger, irritation and hostility in the daily life of the interviewees. This is interesting because the quantitative health research, carried out 18 months after the Fireworks disaster[7], showed that strong feelings of anger and irritation occurred to the same extent as other surveyed problems, such as fear and depressive complaints (79%, 81% and 78% respectively). Whereas it is true that various psychological issues are likely to be present to an equal degree, specific emotions connected with aggression clearly caused more problems for those affected.

On the one hand, the presence of anger and irritation is understandable due to the psychological processing of traumatic events: anger is a functional emotional reaction which is connected to the sense of having been victimised by an overwhelming experience, which can hardly be controlled, if at all. Aside from re-experiencing the event and avoidance reactions, increased irritability is a third characteristic reaction after experiencing such events.[5] On the other hand, these emotions can also be traced back to dissatisfaction and frustration caused by the disaster. This concerns both the deep frustration that such an event could take place in The Netherlands and the aftermath of the disaster. Although each shocking event seriously violates implicit presumptions of the relative invulnerability of the victims[23], this violation apparently has an extra dimension for the Turkish victims. For instance, according to the affected The Netherlands has a different position than Turkey: apparently, people have other, higher expectations of The Netherlands ("that cannot happen here"). Victims who were involved in the serious earthquake in Turkey consequently experienced the disaster in The Netherlands differently: "In Turkey, it is normal that things like this can happen." Various participants thought that the aftermath of the disaster, amongst other things, made them particularly sick because of unsettled financial problems. They also had different expectations of The Netherlands. Since the disaster was the result of human shortcomings, they moreover thought that Dutch society would take care of them. Anger mixed with disappointment is sometimes described as feelings of embitterment.[24] The present study shows that the combination of the traumatic experience with negative life events, which are not life threatening and are not experienced every day, may result in feelings of injustice and discrimination.

A second striking outcome is the interviewees' beliefs that their health problems only arose *after the disaster.* They felt that they had few or no problems or complaints before the disaster, and subsequently mainly blame the disaster and the way it was handled for their current problems. For complaints connected to re-experiencing and avoidance, this is plausible. The question remains, however, to what extent this also applies to other problems. Non-victimised

Turkish immigrants had increasingly serious psychological distress than non-victimised Dutch natives. Psychological problems preceding the disaster are therefore likely.[7,9]

We are then faced with the question of how we should interpret these research results. The well-nigh exclusive attribution of distress to the disaster and the handling of the consequences thereof are a form of external attribution. The causes for complaints or problems are put outside the person. This is consistent with the observation that people from non-Western cultures are more inclined to look for externalised explanations for psychological complaints.[24] The reason for this external attribution for Turkish victims is possibly prevention of loss of face, social status or stigmatisation[26]; this can play an important part in collectivistic cultures.[27] Within these cultures in which the individual is subordinate to the collective, a loss of face is an element which is strongly apparent in the foreground.[27] By pointing to the disaster as a cause for their problems, there is a "good reason" to be ill. They are therefore "not crazy" but rather got into trouble as a result of circumstances. The observed shame, which conceals the fear of other peoples' judgment, is also part of a collectivistic culture.[27] However, caution should be exercised so as not to make over-generalisations. The differences are to be considered relative.

It should moreover be noted that the Turkish victims were already in a vulnerable position before the disaster, a *condición migrante*. This context, in which the disaster took place, has both financial consequences and consequences for the social environment of many victims.[27,30] As mentioned before, financial problems may have direct effect on social support. Within Turkish families, parents' expectations with respect to the children regarding care are high.[28] The second-generation children want to and must fulfill these expectations since they are the ones with access to Dutch society.[29] Due to the scale of the disaster, this fragile balance, however, has been shaken. For families this resulted in webs of forced interdependence[27] and loyalties, whereas the care for several people was often placed on single persons. Even though in Turkish culture the parents have a right to be taken care of by their children[28], this puts the elderly in a powerless situation and takes away their autonomy. The same applies for marriage migrants who are also faced with a double task, because they too should take care of their parents-in-law. If they do not properly fulfill these tasks, they are afraid of becoming the victims of community gossip. In taking care for their in-laws, marriage migrants are also dependent on their husbands who have a better access to Dutch society.

A third striking finding of this research is that there is very little reference to physical complaints; this does not mean that Turkish respondents do not

have physical complaints, but it does mean that they do not mention these prominently as being the primary or most serious among their complaints. It is possible that all attention to and information concerning the psychological consequences of the disaster Have broken the taboo to talk about psychological problems and the possible language barrier to describe their problems. The victims have moreover "good reasons" for their psychological complaints; after all, they had experienced a disaster.

This study has its limitations. There was of course a selection in sampling. Due to this procedure findings could possibly be made less generalised. To solve this problem we used the method of purpose sampling. The sample encompasses Turkish immigrants from all age groups, migration groups (older and young first-generation, second-generation immigrants) and both with and without psychosocial problems. Saturation of the relevant subjects occurred: at a certain point, new interviews were no longer seen to be providing new information. We can assume that, with this sampling, we have been able to map the phenomena from different situations, characteristics and backgrounds.

There is, furthermore, the problem of interpretation of findings. The first interpretation of results was discussed with two of the authors. Multi-method triangulation with the epidemiological findings and scientific literature was made. The fact that most participants blamed the disaster for their problems may have had something to do with the timing of the interviews; a number of the interviewees felt that even 3 years after the disaster, nothing had happened. One may then suggest that responses would have perhaps been different if given 1 or 5 years after the event.

Nonetheless, this is one of the few qualitative studies[31,32] among many studies after disasters that has been conducted with quantitative research. Most studies on the psychosocial consequences of disasters are merely epidemiological in nature. An additional qualitative study can provide nuance and meaning to the outcomes of epidemiological research. It is therefore recommended that a similar combination of quantitative research and deepening interviews will be applied to future disasters.

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Chapter 4

Lack of perceived social support among immigrants after a disaster: A comparative study

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Abstract

Background

Disaster research suggests that immigrant groups who are affected by a disaster receive less emotional support than their native counterparts. However, it is unclear to what extent these differences can be attributed to post-disaster mental health problems or whether they were present before the event.

Aims

To examine the association between lack of social support, immigration status and victim status, as well as differences in support between immigrants and Dutch natives with disaster-related post-traumatic stress disorder (PTSD).

Method

Social support and psychological distress were assessed among immigrants and Dutch natives, among affected and non-affected individuals 4 years post-disaster. Post-traumatic stress disorder was examined in the affected groups.

Results

Affected immigrants more often lacked various kinds of perceived social support compared with affected Dutch natives. Remarkably, we found no differences in support between affected immigrants and non-affected immigrants. Immigrants with PTSD differ on only 2 out of 6 aspects of support from the Dutch natives with PTSD.

Conclusions

Results clearly indicate that differences in support between immigrants and Dutch natives are not so much a consequence of the disaster but were largely present before the disaster.

Introduction

Perceived social support is a term encompassing a variety of characteristics of an individual's social world and the relationship between the individual and the social environment.[1] Although definitions vary, social support can be defined as those social interactions that provide individuals with actual assistance or embed them into a web of social relationships perceived to be caring and readily available in times of need. The role of perceived social support has been examined in post-traumatic responses following a myriad of traumatic events.[2] With regard to the effects of disasters on the individual as well as the community, the subjective perception of social support is an influential factor in recovery.[3] Studies undertaken after disasters have shown that social support has a stress-buffering effect for post-traumatic problems.[4,5] Furthermore, perceived lack of social support systems and perceived lack of sharing of emotions have been found to be risk factors for post-disaster mental health disturbances.[6,7,8]

With regard to non-Western ethnic minorities, there are two rather contrasting phenomena. On the one hand, certain groups of non-Western ethnic minorities are considered to live in collectivistic communities[9] and in these communities "the self" is defined as part of a larger group such as the family.[10,11] In the case of emergencies, this would imply that providing social support is more of a compelling duty than a free and voluntary act. People sacrifice their personal interests to benefit the collective, for example the extended family.[12] This suggests that affected members of these communities are likely to receive more social support after disasters than affected Western natives, especially in the long term.

On the other hand, disaster research in Western countries has indicated that disaster victims who were members of ethnic minority groups received less emotional support than their affected counterparts who were members of ethnic majority groups.[13] In addition, empirical studies have shown that they were indeed more at risk than Western natives of developing mental health problems (such as post-traumatic stress disorder (PTSD)) after disasters[14,15] in the short, intermediate and long term.[16] Interestingly, Kaniasty & Norris[17] concluded that lack of social support in the long term is a consequence of mental health problems following a disaster. As a result of more disaster-related problems faced by affected ethnic minorities, they are less likely to receive social support than affected natives.

In line with these contrasting phenomena we tested two hypotheses. The first hypothesis is: affected immigrants receive less social support than non-affected immigrants, and affected Dutch natives receive less social support than

their non-affected counterparts as a consequence of the disaster and its related mental health problems. The second hypothesis is in line with the findings of Kaniasty & Norris[17] that the lack of social support is a result of mental health problems: differences in lack of social support between immigrants and Dutch natives are minimal in affected victims with PTSD. To the best of our knowledge, previous studies have not examined these two related hypotheses in one study, using an immigrant and a native comparison group. Thus, for this purpose we examined lack of perceived social support and severe mental health problems among affected and non-affected immigrants and Dutch natives and their non-affected counterparts 4 years after a major disaster. We focused on long-term experiences because it is especially during this period of time that social support may deteriorate.

Method

Background

On 13 May, 2000, a devastating explosion in a fireworks storage facility occurred in a residential area in the city of Enschede in The Netherlands. As a result of the explosion, 23 people were killed, 900 were physically injured and approximately 500 homes were destroyed or severely damaged. The Dutch government declared it a national disaster and decided to launch the comprehensive and comparative Enschede Fireworks Disaster Study. The medical ethics committee of The Netherlands Organisation for Applied Scientific Research (TNO, Zeist) approved the study protocols, and all of the participants gave their written informed consent.

Procedures

The procedures, methods and non-response rates have been described in earlier studies.[14,18,19] For this reason, the characteristics of the study design are only described briefly below. The study consisted of three waves of assessments: 2–3 weeks, 18 months and 4 years post-disaster. In the first wave all of the adult residents (both immigrants and Dutch natives) of the disaster area were personally invited by letter to participate in the study, and several announcements were made through the local media. The study was conducted among adult residents, passers-by and rescue workers. In the second and third waves a comparison study was carried out.

Immigrants were defined as those who were foreign-born and those who were born in The Netherlands with at least one non-native parent. In this study

the immigrant group contained a large diversity of more than 10 different nationalities (from Afghanistan, China, Iraq, Egypt, Eritrea, Syria, Angola, Liberia, Sierra Leone, Algeria, Bosnia Herzegovina, Iran, India, Lebanon and Mozambique), with the largest group of immigrant victims and controls in our study being people of Turkish origin (43% in the affected group and 58% in the control group). Dutch natives were defined as those individuals who were born in The Netherlands with neither parent born outside of The Netherlands.

The comparison group was adults who had not been exposed to the disaster and who were residents of Tilburg, a town located in another part of The Netherlands with a similar historical background to Enschede. Four districts (postal areas) in Tilburg were chosen as the comparison group; residents from these districts were similar to the Enschede survivors in relation to age and gender composition, educational level, country of origin and general health status. The information was based on figures from the Dutch Public Health Status and Forecast Report.[20] Within each of the districts a sample of 400 people was identified and stratified by gender, age and country of origin. They lived in a comparable residential area (i.e. comparable in relation to the composition of the population and general health status).

Both in the third wave of the main study and in the comparative study the respondents were asked to participate in exactly the same way (letter of invitation, posted questionnaire and personal telephone call). The letters were translated into English, German and Turkish (the language of the largest group of immigrants). The telephone calls were, as much as possible, made by people who could speak Dutch and a specific foreign language. For the present study, data from the third wave of the study were analysed, which was almost 4 years after the disaster (January–March 2004).

Sample

A total of 1567 disaster-affected residents completed the questionnaire in Wave 1. This is an estimated response of 30% of all of the victims in the affected neighbourhood. In Wave 3 the response rate was 69.9% for survivors who responded in both Wave 1 and Wave 3. The immigrant group had a slightly higher response in Wave 1. The response rate of the third wave among the immigrant group was 49% of the immigrant group of the first wave.

For self-reported disaster-related experiences, the respondents and non-respondents from the first and third waves did not differ in the percentage of affected respondents who had to be relocated because of the disaster. Furthermore, both groups were equally exposed to the disaster. For psychological problems, 2–3 weeks post-disaster there were no significant differences between

respondents and non-respondents at the follow-up stage. Furthermore, non-response analyses of the first survey showed that the prevalence rates of mental health problems 2–3 weeks post-disaster were not affected by the individuals' non-response to the survey.[19]

The comparison group comprised 640 non-exposed adult residents of the city of Tilburg, located in another part of The Netherlands. They lived in a comparable residential area, i.e. comparable in the composition of the population and general health status. They participated in the second wave (response 61%) and the third wave (response 78.5%).

Measures

Demographic information concerning gender, age and level of education was obtained for the questionnaire. This, including informed consent, was in Dutch, but it was also available in English, German and Turkish. The questionnaires, including the Turkish questionnaire, were translated and reverse translated according to the procedure of Van de Vijver & Leung.[21]

Psychological distress

The 90-item Symptom Checklist (SCL-90-R)[22,23] was administered to examine psychological distress. The SCL-90-R has a 5-point Likert scale (from 1, "not at all" to 5, "extremely") and assesses symptoms over the previous 7 days. The Dutch cut-off scores for males and females of a normal population were used to identify respondents with severe psychological distress (total score). The internal consistencies were excellent ($\alpha \geq .86$).

PTSD

The 22-item Self-Rating Scale for Post Traumatic Stress Disorder (SRS–PTSD)[24] was administered among the affected residents to assess disaster-related PTSD (based on the criteria of DSM–IV[25]) during the previous 4 weeks. Individuals with a positive score on all 3 subscales: intrusions (a score of at least 1 item from 5 items); avoidance reactions (a score of at least 3 items from 7 items); and hyper-arousal symptoms (a score of at least 2 items from 5 items) are considered to have a PTSD. Cronbach's alpha was excellent ($\alpha = .95$).

Lack of perceived social support

The 34-item Social Support List Discrepancy (SSL–D)[26,27] was administered to all respondents to assess 6 important aspects of lack of perceived social supports:

everyday emotional support, emotional support in response to problems, appreciation of support, instrumental support, social companionship and informative support. This frequently-used questionnaire assesses the extent to which the received support is in accordance with the needs of the respondent. The questionnaire starts with "What is your opinion about the extent to which people... " followed by items such as "(...) are affectionate towards you?", "(...) ask you to join in?", "(...) drop in for a pleasant visit?", "(...) give information about where to get things?". The items have a 4-point Likert scale: 1. "I miss it, I would like it to happen more often"; 2. "I don't really miss it, but it would be nice if it happened a bit more often"; 3. "just right, I would not want it to happen more or less often"; 4. "it happens too often, it would be nice if it happened less often". The item scores were recorded (1=3, 2=2; 3=3, 4=1). All of the Cronbach's alphas were excellent (α ≥ .84).

Resources of social support

Among the affected residents, resources of social support we examined were based on the work of Rime and colleagues,[28] using two related questions: "How many people around you can you count on in the event of problems or difficulties (not related to the Fireworks disaster)?" and "How many people around you can you count on in the event of problems or difficulties (if any) related to the Fireworks disaster?". Responses were made on a 7S-point Likert scale (1, "nobody" to 7, "20 or more different people"). Our cut-off score was 41. People with one or more people they could count on for emotional problems were defined as having a resource for social support.

Data analyses

Chi-squared tests were conducted to assess the differences in the mental health problems experienced by the affected residents and the comparison group in demographic variables. In addition, chi-squared tests were used to examine the differences in sources of support for both groups of affected residents. All of the analyses were carried out using SPSS version 16 for Windows.

With respect to our first hypothesis, the differences in social support between the four study groups were tested by means of a one-way ANOVA. Psychological distress, gender, age and educational level were controlled by means of covariates in the one-way ANOVA. For our second hypothesis, the aforementioned analyses were repeated among both groups of disaster victims with and without disaster-related PTSD.

Results

Demographic characteristics

The four study groups (affected immigrants, affected Dutch natives, comparison immigrants and comparison Dutch natives) did not differ in gender (Table 1). The immigrants had a rather low educational level: about 60% of the victims and the comparison group had attained no more than primary or junior high school levels of education (Table 1). The differences in low educational levels were significant between the immigrant groups and the Dutch natives groups (affected group: χ^2=18.9, d.f.=1, P< 0.001; comparison group: χ^2=9.8, d.f.=1, P< 0.01). The percentages with regard to low education level did not differ significantly between the affected and the non-affected immigrants, or between the affected and the non-affected Dutch natives. In this sample most of the respondents were married or had a permanent partner and there were no significant differences between the four study groups.

Psychological distress and PTSD

4 years post-disaster the majority of the affected residents in the immigrant group (63.4%) had severe psychological distress (Table 1). Compared with the affected Dutch native group (χ^2=108.8, d.f.=1, P<0.001) and the comparison immigrant group (χ^2=16.0, d.f.=1, P<0.001), the affected immigrant group suffered significantly more from psychological distress. The differences in psychological distress between the affected Dutch native group and the comparison Dutch native group were smaller, although significant (χ^2=7.6, d.f.=1, P<0.01). Furthermore, a significantly higher percentage of the affected immigrant group had PTSD compared with the affected Dutch native group (χ^2=105.2, d.f.=1, P<0.001).

Differences in social support and aspects of perceived social support

Approximately 30% of the affected immigrant group could not share their emotional feelings (in general or related to the disaster) with a single person (Table 1). This percentage is significantly higher than that of the affected Dutch native group (4 and 7% respectively).

Table 2 shows that when controlling for psychological distress, gender and age, the differences in lack of perceived social support between the affected immigrant group and the affected Dutch native group remained significant for all types of social support (the F-values range from F=746.2, d.f.=1, P<0.001 for instrumental support to F=17.4, d.f.=1, P<0.001 for informative support). Interestingly, the differences in lack of social support between the affected immigrant group and the comparison immigrant group were not significant.

Table 1 *Demographic characteristics, Social Sources and Support*

	Affected residents				Comparison group				Pearsons		
	ethnic minorities		Dutch natives		ethnic minorities		Dutch natives		χ^2	df	*P*
	N	%	N	%	N	%	N	%			
Gender									0,4	3	ns
Female	123	58,0	427	56,5	66	58,4	295	56,0			
Male	89	42,0	329	43,5	47	41,6	232	44,0			
Age									19,2	6	0,004
18-35	95	44,8	271	35,8	22	36,1	169	32,1			
36-50	72	34,0	257	34,0	24	39,3	169	32,1			
51+	45	21,2	228	30,2	15	24,6	188	35,7			
Educational level									34,3	6	0,000
Primary school/ Junior high	125	61,9	326	44,6	72	64,3	250	48,0			
Senior high/ Professional	57	28,2	244	33,4	27	24,1	169	32,4			
High professional/ university	20	9,9	161	22,0	13	11,6	102	19,6			
Single	20	11,5	127	18,2	10	10,8	77	15,7	7,1	3	ns
Social scources											
Does not have people to count on em problems	56	28,7	33	4,4					106,0	1	0,000
Does not have people to count on em problems disaste	58	30,4	54	7,3					76,5	1	0,000
Psychological problems											
Psychological distress	118	63,4	173	23,6	43,0	39,4	89	17,2	162,1	3	0,000
PTSD	80	41,0	75	10,2					105,6	1	0,000

Table 2 *Association between ethnic group and deficiency of social support 4 years post-disaster*

	Affected residents		Comparison group				
	ethnic minorities Mean (s.d.)	Dutch natives Mean (s.d.)	ethnic minorities Mean (s.d.)	Dutch natives Mean (s.d.)	*F**	df	*P*
Deficiency everyday emotional support	7,35 (2,61) [a]	5,78 (2,22) [bc]	6,20 (2,28) [ac]	5,71 (2,20) [b]	5,89	3	0,001
Deficiency emotional support with proble	14,39 (5,10) [a]	11,15 (3,87) [bc]	12,25 (4,32) [ac]	10,97 (3,62) [b]	7,99	3	0,000
Deficiency esteem support	10,22 (3,66) [a]	8,08 (2,57) [bc]	8,51 (2,76) [ac]	7,81 (2,46) [b]	9,75	3	0,000
Deficiency instrumental support	12,31 (4,11) [a]	9,37 (2,83) [b]	11,02 (3,79) [a]	9,05 (2,53) [b]	25,71	3	0,000
Deficiency social companionship	8,91 (3,16) [a]	7,04 (2,49) [bc]	7,82 (2,91) [ac]	6,90 (2,44) [b]	7,94	3	0,000
Deficiency informative support	7,00 (2,55) [a]	5,59 (1,90) [bc]	5,93 (2,06) [ac]	5,39 (1,79) [b]	8,29	3	0,000

[abc] values with a different character vary significantly (when controled for psychological distress, gender, age and education, p<.05)

* when controled for psychological distress, gender, age and education

Table 3 *Association between ethnic group and deficiency of social support 4 years post-disaster in disaster affected groups with or without PTSD*

	Affected residents with PTSD		Affected residents without PTSD				
	ethnic minorities Mean (s.d.)	Dutch natives Mean (s.d.)	ethnic minorities Mean (s.d.)	Dutch natives Mean (s.d.)	*F**	df	*P*
Deficiency everyday emotional support	8,20 (2,52) [a]	8,08 (2,82) [ab]	6,81 (2,51) [b]	5,52 (2,00) [c]	17,16	3	0,000
Deficiency emotional support with probl.	16,29 (5,07) [a]	15,40 (5,09) [ab]	13,16 (4,79) [b]	10,70 (3,42) [c]	14,59	3	0,000
Deficiency esteem support	12,04 (3,86) [a]	10,69 (3,26) [a]	9,09 (3,08) [b]	7,80 (2,32) [c]	21,90	3	0,000
Deficiency instrumental support	14,28 (4,20) [a]	12,40 (3,67) [b]	11,13 (3,61) [b]	9,05 (2,53) [c]	29,20	3	0,000
Deficiency social companionship	10,30 (3,32) [a]	9,14 (3,03) [ab]	8,11 (2,78) [b]	6,81 (2,33) [c]	13,71	3	0,000
Deficiency informative support	8,14 (2,64) [a]	7,10 (2,37) [b]	6,27 (2,23) [b]	5,42 (1,77) [c]	12,87	3	0,000

[abc] values with a different character vary significantly (when controled for psychological distress, gender, age and education, p<.05)

* when controled for psychological distress, gender, age and education

Differences in perceived social support among individuals with and without PTSD
As expected, the affected immigrant group with PTSD reported the same levels of lack of perceived everyday emotional support, emotional support with problems, esteem support and informative support as the Dutch native group with PTSD (Table 3). However, the levels of a lack of perceived instrumental support (F=6.0, d.f.=1, P<0.05) and informative support (F=3.3, d.f.=1, P<0.05) were significantly different for the two affected groups. This means that the affected immigrant group felt that they would have liked to have received more instrumental support (such as a loan of money or a helping hand) and informative support (such as constructive criticism) than the affected Dutch native group.

In line with our hypotheses and the former analyses with regard to our comparison group, significant differences were found in the group of affected residents without PTSD (Table 3). Among the affected residents without PTSD, the affected immigrant group perceived less emotional support, emotional support with problems, esteem support and informative social support than the affected Dutch native group (Table 3; the F-values range from F=28.1, d.f.=1, P<0.001 for instrumental support to F=5.9, d.f.=1, P<0.02 for informative support).

Discussion

Main findings
This is the first comparative disaster study that has focused on the lack of perceived social support among affected immigrants and Dutch natives, as well as among non-affected residents. Were differences to be found in perceived social support 4 years after a disaster? Were these differences related to psychological symptoms or were they already present? Our results show that, in particular, the immigrant groups lacked social support in general. Our results reveal that the differences in lack of social support (often found in disaster studies) are not so much a result of the fact that immigrants experience relatively more psychosocial stress after a disaster, but originate in the lack of social support for immigrants in general.

This study confirms our first hypothesis: immigrants lacked social support more than native Dutch victims. We found that 4 years after the disaster a third of the affected immigrant group felt that they did not have one single person to talk to and they had no one with whom they could share their emotional problems. This should be considered a devastating decrease of their social support system. Among the affected Dutch native group the percentage was much lower. Furthermore, as expected, the affected immigrant group had a

higher deficiency in social support than the affected Dutch native group.

This raises the question: did this lack of post-disaster social support have a long-term effect on the immigrants in particular? Remarkably, our results show that the affected and non-affected immigrant groups did not differ in deficiency of social support. This is in contrast to our first hypothesis. However, the results confirm the second hypothesis: among a group of disaster victims with comparable severe mental health problems (such as PTSD), the differences in lack of social support between the immigrant group and the Dutch native group were minimal.

Possible explanations

How can these findings be explained? After a traumatic experience such as a disaster, social support is an important aspect of disaster recovery.[8] Received support has been found to increase in the aftermath of a disaster[29] and to be positively correlated with the severity of exposure.[30] At first, just after the disaster, people look after each other, help each other to survive, and in a shattered community it is acceptable to talk about the events and the experiences.[30] However, the availability and quality of social support systems can change in the long term. Often, social support declines as a function of time. The way that social support interacts with mental health problems after a disaster varies over time.[17,31] In the first months after a disaster social support is a buffer for psychological stress. However, Kaniasty & Norris[17] showed that after 2 years, when (for most victims) the symptoms of distress disappeared, the victims with more psychological problems received less social support.

The results of the present study are consistent with the findings of studies by Kaniasty and Norris.[32,33] They showed that after a disaster the victims in ethnic minority groups such as Latino Americans and African Americans received less social support compared with European Americans. They concluded that these differences were because of the differential levels of mental health problems after the disaster. Kaniasty and Norris[17] suggested that a decline in social support in the long term is not uncommon in victims with higher levels of psychological stress. If individuals continue to show signs of severe psychological difficulties, this can infringe on the community spirit of successful recovery and, as a result, the attention and support from the social surroundings decline. Studies in the general Norwegian population have shown that the lack of social support, especially in non-Western ethnic minority groups, is related to a poor mental health outcome.[34] However, this does not explain our finding of the lack of social support in the more healthy affected and non-affected immigrant groups.

Kaniasty and Norris[33] raised the question: why do ethnic minorities not

participate more fully in their evolving altruistic community? This study gives an answer to this question. It is likely that the lack of perceived social support was not because of the deteriorated situation of the immigrants after a disaster. In fact, the results indicate that the social support system of the immigrant group, in general, is not adequate enough, especially when compared with that of the (affected or non-affected) Dutch native groups. In other words, the lack of social support often found in disaster studies is not the result of the fact that the immigrant groups experience relatively more psychosocial stress after a disaster; the differences originate in the lack of social support in the immigrant groups in general. What can explain these ethnic differences in the groups of victims without PTSD? More collectivistic and family-focused cultures foster a focus on groups, contexts and relationships, and personal feelings, and their free expression may be relatively less important. A study by Matsumoto et al.[9] of various cultures showed that people in individualistic cultures endorse more emotional expression in interaction with members of their in-group, whereas people in collectivistic cultures endorse less.

Another important factor is the status of immigrants. Whereas the home culture of many minority groups in Western Europe is rather collectivistic and the need to look after each other is strong, the culture of a migrant may be less connected to this than the native majority. The migration has resulted in a condition distinctive from the homeland culture as well as from the new culture of the host country: the so-called *condición migrante*, meaning the conflict of living between two cultures, in combination with the resulting social isolation, uprootedness and low socioeconomic status.[35,36] A study in Norway found that non-Western migrants had a lower level of social support compared with native Norwegians.[37]

Mediterranean (mainly Turkish and Moroccan) immigrants in The Netherlands tend to have a rural background with a commitment to the extended family and traditional religious practices, and had (and still have) to deal with an urban, secular and individualistic Western society.[38] The stresses and psychosocial problems that these people cope with every day[39] can affect their social structures. A qualitative study among Turkish victims affected by the Enschede disaster[12] in The Netherlands showed that especially the younger first generation (who had migrated from Turkey to The Netherlands in order to marry Turkish Dutch immigrants) might have a small social network. These (mostly) women depended (both socially and economically) on the family of their spouse. With a lack of access to Dutch society they reported that they did not have friends on whom they could rely. Furthermore, their close family lived in Turkey and, as a result of financial problems because of the disaster, they did not maintain much contact with them.

In addition, in the stricken ethnic minority community multiple households of the extended families were affected.[12] It is not surprising, therefore, that there was a lack of social support after the Enschede Fireworks disaster as there were complex practical and financial difficulties that had to be overcome. Most of the affected individuals' houses were largely destroyed. Furthermore, as a consequence of having an immigrant background, people may have had fewer individual resources (and the resources of the family may have been smaller) than the Dutch native victims. Practical problems such as the need to shelter more families caused crowded conditions to develop. Over time these stressful living conditions can result in strained family relations.[40]

Strengths and limitations

Strengths of our study include the large sample size, the inclusion of two non-affected comparison groups, and the use of well-validated instruments. However, some limitations should be noted. The response to this study was rather low. In the first wave (2–3 weeks post-disaster) the estimated response was 30%, with an overrepresentation of women and immigrants in comparison to the overall population affected by the disaster. Nevertheless, we found no indication that this overrepresentation affected the prevalence rates of psychosocial problems.[19] However, in our analyses we controlled for severe psychological problems. This study used self-reporting questionnaires. We did not use a standardised clinical interview (such as the Composite International Diagnostic Interview[41]) to assess PTSD. Guay et al.[8] stated that the use of self-administered questionnaires is a limitation in most studies concerning social support. Despite the fact that the instruments used are well validated and have good psychometric properties, the social support in this study concerned the subjective perception of support. As in other studies, we have no data on provided support as perceived by significant others who have a social system similar to that of our respondents.

It is not clear whether the differences found in this study can be explained by the different cultural background of the respondents or by whether they belong to an ethnic minority. Our study has examined individuals from non-Western backgrounds who are also minority members in a Western setting. It is too complex to separate the effect of being a minority from the effect of ethnocultural factors. Furthermore, concerning the comparisons with the affected immigrants and the Dutch natives, there could be a difference in the expectation of the amount of social support they receive. It is possible that among people with a collectivistic background the level of expectation of social support is higher than that among people in the more individualistic Dutch community. The disappointment could have been amplified when the (collectivistic) community did not meet the expectations of the disaster

survivors. As a consequence, the affected immigrants may have responded more negatively on this issue. However, and this is a crucial strength of this study, with the use of a non-affected comparison group we were able to counterbalance this possible influence. The results clearly suggest that differences in lack of social support between immigrants and Dutch natives 4 years post-disaster are not so much a consequence of the disaster but were largely present before the disaster.

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Chapter 5

Acculturation and post-disaster mental health problems among affected and non-affected immigrants: A comparative study

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Abstract

Background

It is unknown to what extent acculturation among disaster-affected immigrants is associated with mental health problems (MHP) compared to non-affected immigrants.

Method

We examined the associations between acculturation and post-disaster MHP among affected and non-affected immigrants in The Netherlands.

Results

Among the affected group, *keeping norms and values of original culture* and *limited skills to cope with the demands of the new society* were independently associated with PTSD-symptomatology, anxiety, depression, hostility, and somatic problems at 18 months post-event. In the non-affected comparison group no associations were found. Interestingly, levels of acculturation did not differ between both groups, in contrast to MHP.

Limitations

The acculturation levels could be influenced by the experience of a disaster. However, levels did not differ statistically between the study groups. Furthermore, the groups were reasonably small and the response rates were, although not uncommon in health studies among immigrants, relatively low.

Conclusions

The findings of this unique study clearly suggest that post-disaster mental health policies should target low levels of skills to survive in the new society. Furthermore, the acculturation domain of keeping traditional norms and values can be contrary to the Dutch care after a disaster where self-efficacy and individualistic, cognitive functioning are the central goals. Further research is warranted to explore and examine post-event interventions aimed at increasing the levels of acculturation that may facilitate recovery.

Introduction

Acculturation is a concept that refers to the way immigrants or ethnic minorities adjust to the host society. Acculturation is considered to be a concept with various outcomes: integration, separation, marginalisation and assimilation with regard to the host society.[1] It reflects the degree to which the norms, values and traditions of the original culture are retained as well as the degree to which new customs and skills are adopted.[2] Health studies have demonstrated that negative attitudes of immigrants towards the host culture and fewer skills to cope with the demands of the host community are associated with mental health problems (MHP).[3,4,5,6,7,8]

Disasters are sudden, drastic events that immediately threaten life and resources.[9] As a consequence, they put a heavy burden on the adjustment skills of those affected, because the victims have to cope with practical, financial, parenting and other problems. Ethnic minority groups, compared to native or majority groups, are far more at risk of developing post-event MHP.[10,11] These difficulties are related to a combination of demographic characteristics, cultural factors[12], and the level of acculturation.[13] Immigrants who are not fully acculturated in a society will have a higher risk for MHP after a disaster because they lack socio-economic resources[14], are more at risk for MHP before the disaster and have probably less access to resources after the disaster. Yet, it is unknown to what extent the level of acculturation among immigrants is associated with post-disaster MHP. More specifically, whether the associations between acculturation and MHP differ between groups of immigrants that are (not) affected by a disaster. To the best of our knowledge, such comparative studies are not available.

The aim of the present study was to unravel these associations among affected immigrants 18 months post-disaster and among non-affected immigrants in The Netherlands. We hypothesized that disaster-affected immigrants compared to their non-affected counterparts with low levels of acculturation in the host society were more at risk for mental health problems.

Method

Study design

In 2000 (May 13), an immense explosion in a fireworks storage destroyed a residential area of Enschede (The Netherlands), ruining 500 houses, killing 23 people, and injuring over 900 victims. A health study with 3 waves was launched. Data for this study were collected at wave 2 (18 months post-disaster; November

2001). In the first wave (2–3 weeks post-disaster) all of the adult residents (both immigrants and Dutch natives) of the disaster area were personally invited by letter to participate in the study, and several announcements were made through local media.[see 15] The comparison group was included at wave 2 and was drawn from the Registry Office in a comparable residential area in the city of Tilburg (The Netherlands). The comparison sample was stratified on gender, age category and country of migration. Immigrants are defined as those who were foreign-born and those who were born in The Netherlands, with at least one non-native parent. In this study the immigrant group contained a large diversity of more than 10 different non-Western nationalities, with the largest group of immigrant victims and controls in our study being people of Turkish origin.[see 16] A Medical Ethical Committee (TNO, Zeist) approved the study protocols and all participants gave their (also translated in English and Turkish) written informed consent.

Measures

Anxiety, depression, hostility and somatic symptoms among both groups were measured with the Symptom Check List (SCL-90-R).[17,18] Items had 5-point Likert scales and assessed the degree of symptoms over the past 7 days. The internal consistency of the sub scales was good (α≥.91).

Disaster-related PTSD-symptoms were assessed with the Impact of Event Scale.[19,20] Items had 4-point Likert scales and assessed the degree of disaster-related intrusions and avoidance reactions over the past 7 days. The internal consistency of the total scale was excellent (α≥.95).

Acculturation was examined using the Lowlands Acculturation Scale (LAS).[2] It has 5 scales: 1. *Limited skills to cope with the demands of the new society (limited new skills).* 2. *Limited social integration in the new society (limited social integration).* *3. Preservation of traditions of original culture (preservation of traditions).* 4. *Keeping norms and values of original culture (keeping norms and values).* 5. *Loss of original culture.* Items had 6-point Likert scales. A high score on a sub-scale means a low level of acculturation in the Dutch society. The internal consistency for the sub-scales was satisfactory (α≥.71 for *limited social integration* to α≥.84 for *loss*).

The questionnaires were available in Dutch, English and Turkish. The English and Turkish questionnaires were translated and reverse translated.[21]

Data analyses

T-tests were conducted to examine differences in mean scores. Pearson correlations were computed to examine bi-variate associations between

study variables. Multiple regression analyses were conducted to examine the independent associations between acculturation and MHP among both groups separately. At step 1 demographic characteristics and at step 2 the 5 sub-scales of the LAS were entered.

Results

Response

The number of participants in this study was 348. The estimated response of all affected residents at the first wave was 33%. Compared to non-responders, responders were more likely to be women and affected immigrants.[22] The response from the first wave to the second wave for the affected immigrant group (n=221) was 51%. The affected immigrants who completed the second wave survey were not significantly different from non-responders (n=125) on gender and education. Non-responders had, compared to responders, however, less anxiety (t=-2.678, $d.f.$=392, P<.001), depression (t=-2.590, $d.f.$=387, P<.01), hostility (t=--2.957, $d.f.$=395, P<.01) and somatic problems (t=-2.398, $d.f.$=392, P<.05) at the first wave.

Demographics

No significant differences in age, gender and educational level were found between the affected and non-affected group (females: 55.3% versus 51.6%), age (M=42.4, SD=13.05 versus M=41.3, SD=13.89) and educational level (primary school 38.1% versus 36.1%; junior high 26.2% versus 28.6%; senior high/professional 27.6% versus 24.4%; high professional/university education 8.1% versus 10.9%).

Health problems and acculturation level

The affected group, compared to the non-affected responders, had higher scores on all MHP 18 months post-disaster. In contrast, both groups did not differ in mean scores on the LAS sub-scales (Table 1).

Table 2 shows that the domains of *limited new skills* and *keeping norms and values* were independently associated with MHP and PTSD-symptoms within the affected group (anxiety F=3.768, $d.f.$=8, 155, P<.001; depression F=5.215, $d.f.$=5, 153, P<.001; hostility F=5.769, $d.f.$=5, 155, P<.001; somatic problems F=4.320, $d.f.$=5, 155, P<.001) and PTSD-symptoms (F=3.023, $d.f.$=5, 133, P<.01). Among the non-affected group, the five domains of acculturation were not independently associated with mental health problems. The effect sizes (R^2/1-R^2) are under .14 and therefore considered low.

Table 1 *Differences in means (M) and standard deviations (DV) in mental health problems and acculturation between by disaster affected Turkish immigrants and their non-affected counterparts*

	Affected immigrant group		Immigrant comparison group				
	M	SD	M	SD	df	t	sign
Mental health problems							
Anxiety	22,2	11,1	14,7	6,0	326	-6,891	***
Depression	35,7	16,7	26,3	11,2	318	-5,472	***
Hostility	12,0	6,4	8,6	3,4	329	-5,421	***
Somatic problems	28,1	12,6	20,5	7,6	327	-5,981	***
PTSD symptoms	32,4	20,7	-	-			
Acculturation domains							
Limited skills to cope with the demands of the new society	15,8	7,8	16,1	8,1	277	0,283	
Limited social integration in the new society	16,0	5,3	16,4	4,6	280	0,595	
Preservation of traditions of original culture	17,0	5,7	18,0	5,9	277	1,468	
Keeping norms and values of original culture	19,9	7,1	21,3	7,5	272	1,591	
Loss of original culture	23,6	9,2	24,9	9,9	273	1,135	

*p < .05; **p < .01; ***p < .001

Table 2 *Multiple regression analysis of acculturation factors related to mental health problems in by disaster affected non-Western immigrants and their non-affected counterparts*

	Affected immigrant group																			
	Anxiety				Depression				Hostility				Somatic problems				Intrusions & avoidances			
	R^2	adj R^2	β	sign	R^2	adj R^2	β	sign	R^2	adj R^2	β	sign	R^2	adj R^2	β	sign	R^2	adj R^2	β	sign
Step 1: Demographic variables	0,051	0,032		*	0,024	0,005			0,032	0,013			0,049	0,031			0,056	0,035		
Gender			0,04				0,03				0,02				0,03				-0,02	
Age			-0,08				-0,12				-0,17	*			-0,08				0,02	
Education			-0,23	**			-0,13				-0,12				-0,23	**			-0,23	*
Step 2: Acculturation domains	0,170	0,125		***	0,223	0,181		***	0,239	0,198		***	0,190	0,146		***	0,162	0,108		**
Gender			0,00				-0,02				-0,02				-0,01				-0,06	
Age			-0,14				-0,18	*			-0,24	**			-0,12				-0,01	
Education			-0,19	*			-0,07				-0,04				-0,13				-0,18	
Limited skills to cope with the new society			0,19				0,25	*			0,30	**			0,31	**			0,12	
Limited social integration in the new society			-0,15				-0,20	**			-0,14				-0,10				-0,17	
Preservation of traditions of original culture			0,03				0,13				0,02				0,12				0,12	
Keeping norms and values of original culture			0,25	**			0,30	***			0,31	***			0,17	*			0,19	*
Loss of original culture			-0,09				-0,19				-0,12				-0,15				-0,06	

	Immigrant comparison group															
	Anxiety				Depression				Hostility				Somatic problems			
	R^2	adj R^2	β	sign	R^2	adj R^2	β	sign	R^2	adj R^2	β	sign	R^2	adj R^2	β	sign
Step 1: Demographic variables	0,011	-0,019			0,011	-0,019			0,031	0,002			0,065	0,037		
Gender			0,09				0,09				-0,08				0,17	
Age			-0,04				-0,04				-0,15				0,05	
Education			-0,04				-0,03				0,00				-0,16	
Step 2: Acculturation domains	0,076	-0,003			0,100	0,023			0,113	0,038			0,124	0,049		
Gender			0,06				0,06				-0,10				0,11	
Age			-0,02				-0,05				-0,16				0,05	
Education			0,09				0,10				0,10				-0,06	
Limited skills to cope with the new society			0,14				0,22				0,08				0,16	
Limited social integration in the new society			0,00				-0,03				0,05				0,00	
Preservation of traditions of original culture			-0,12				-0,17				-0,27				-0,12	
Keeping norms and values of original culture			-0,09				-0,10				-0,07				-0,20	
Loss of original culture			0,25				0,22				0,36	*			0,16	

*p < .05; **p < .01; ***p < .001

Discussion

As far as we know, this is the first disaster study simultaneously examining the associations between acculturation and mental health problems (MHP) among disaster-affected and non-affected immigrants. The acculturation domain *Keeping norms and values of the original culture* was independently associated with post-disaster MHP in the affected group. *Limited skills to cope with the demands of the new society* was independently associated with depression, hostility and somatic problems. This was not the case for the non-affected immigrants. In the non-affected group acculturation was not independently associated with mental health outcomes.

Findings suggest that the restriction of the ability to manage daily tasks within the host society, such as renting an apartment or arranging insurance, is an important risk factor for MHP in the context of a disaster. Language is a crucial element here – one needs to understand the language of the host country. Especially after disasters with huge material damage these competencies are of utmost importance. Indeed, in other studies disaster-struck ethnic minorities who were not able to speak the majority language (English) or who were not well integrated in the host society showed significantly higher PTSD symptom levels.[13,14,23,24]

The lack of skills may be a sensible risk factor in sight of resources and care after a disaster. Nevertheless, how can the acculturation domain *Keeping norms and values of the original culture* be explained as an influential risk factor for MHP after a disaster? This particular scale measures the ideas and opinions immigrants have about ethical subjects such as *Dutch women behave too freely, Dutch parents give their children too much freedom.* These kinds of traditional norms and values can be connected to communal, collectivistic, family-centered cultures.[25] Mediterranean (mainly Turkish and Moroccan) immigrants in The Netherlands tend to have a rural background with a commitment to the extended family and traditional religious practices.[26] Next to the collection of language, keeping norms and values of the country and culture of origin could be the most important and influential aspects of acculturation. These beliefs and attitudes help shape people's way of looking at themselves and the rest of the world.[27] Besides, these traditional norms and values are almost opposite to the liberal, individualist and humanistic Dutch culture. Regarding the results of the comparison group, the norms and values of the traditional culture are not a risk factor for mental health. However, in case of a collective disaster, where life is under strain and there is a tendency to value one's own traditional culture[28], this could be causing additional acculturative stress. Especially, in Dutch (mental

health) care where self-efficacy and individualistic, cognitive functioning are central goals, there could be a discrepancy between the beliefs the affected immigrants hold on to in order to cope with the disaster.

Despite the uniqueness of our study, some limitations need to be addressed. The acculturation levels could be influenced by the experience of a disaster, differences in level of MHP between the affected and non-affected group or by the fact that the sample consists of a diversity in background. This is probably not the case while the levels of acculturation were comparable in the affected and non-affected immigrant group. Besides, in the design of the study the two groups were stratified on country of origin. However, the groups are reasonably small and the response rates are, although not uncommon in health studies among ethnic minority groups and immigrants[29], relatively low. Therefore, the results should be generalised with care. Future research is warranted to replicate our findings.

Nevertheless, our findings clearly suggest that in post-disaster mental health care programmes, special attention should be given to strengthen the practical coping skills of affected minorities. This is in line with the current focus in post-disaster care on the facilitation of acquisition of essential resources (e.g. housing, insurance).[30] This approach can diminish the extra stress factors, and as a consequence lower the vulnerability for mental health problems after a disaster. The enhancement of *skills to cope with the demands of the new society* could be a powerful intervention. Besides, within the post-disasters mental health care programmes special attention should be for possible cultural biases. The awareness of the possible differences in norms and values of both care-givers and affected immigrants is essential for more successful mental health care after disasters.

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Chapter 6

The correspondence between persistent self-reported post-traumatic problems and general practitioners' reports after a major disaster

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Abstract

Background

Little is known about the correspondence between persistent self-reported disaster-related psychological problems and these problems reported by general practitioners (GPs). The aim of this study is to analyse this correspondence and to identify the factors associated with GPs' detection of persistent psychological problems.

Method

This study was conducted in a sample of 879 adult disaster-affected victims, taken from two longitudinal sources: the Enschede Fireworks Disaster Study and the GP-Monitor Study. Participants filled out a questionnaire 2–3 weeks and 18 months post-disaster and these data were combined with data from a GP-monitor collected up to 18 months post-disaster. The correspondence between persistent self-reported and GP-reported psychological problems was analysed with cross-tabulations. Logistic regression analyses were performed to identify variables which predicted GPs' detection of psychological problems.

Results

The correspondence rate among victims who visited their GP 18 months post-disaster was 60.4% for persistent intrusions and avoidance reactions, 72.6% for persistent general psychological distress and less than 20% for persistent depression and anxiety symptoms or sleep disturbances. Characteristics that predict GPs' identification of post-traumatic reactions or psychological distress were the level of self-reported post-traumatic symptoms/mental health, the number of contacts the victims had with their GP and the level of the victims' disaster-related experiences.

Conclusions

In general, there is a considerable correspondence between GP-reported and persistent self-reported incidences of post-traumatic stress and general psychological distress in disaster-affected victims. However, the correspondence declines in the case of more specific psychological symptoms.

Introduction

Characteristic psychological reactions after disasters and other extreme events are intrusions and avoidance reactions, as described by cognitive theories on trauma.[1,2,3] In addition to these post-traumatic reactions victims may suffer, for instance, from depression, anxiety, hyper-arousal and physical symptoms.[4,5,6] If these reactions are persistent, a post-traumatic stress disorder (PTSD) may develop in time. Co-morbidity of this disorder with other disorders (e.g. depression, substance abuse) is often large.[7] In most cases a (considerable) minority of surviving victims will develop these disorders.[5,8]

In order to receive treatment for post-traumatic disturbances many disaster-affected people will first visit their general practitioner (GP).[9,10] In some European countries, such as The Netherlands and Denmark, a GP functions as the central gatekeeper for more specialised mental health care (this function is regulated by law): if necessary, the GP will refer patients to specialised mental health services. However, after the 11 September, 2001 terrorist attacks in New York up to 64% of the persons with probable PTSD or depression did not seek professional help in the first 6 months.[11] In this context the patients' presentation or GPs' recognition of disaster-related problems is a key issue. Since post-traumatic stress disorders can be cured – evidence-based (short-term) interventions are available for PTSD and treatment may lead to a lower prevalence of PTSD in the long term[12,13] – it is of the utmost relevance that disaster-affected victims with mental health disturbances do receive specialised help.

In general, GPs are regularly confronted with patients who experienced traumatic events.[14,15,16] Research among a general population showed that 28% of victims of traumatic experiences preferred some form of help for their post-traumatic problems.[16] Many studies have been conducted which examined GPs' recognition of depression in the general population. GPs successfully detected depressive symptoms in (only) 36–62% of patients from the general population, who had reported severe depressive symptoms on a questionnaire or in a clinical interview.[17,18,19,20]

Consequently, an important issue concerns which people with mental health problems are detected by the GP and which are not. Several studies determined the characteristics of people whose mental health problems were detected by a GP. Persons with high scores on self-reported questionnaires were best recognised.[19,21,22,23] Socio-demographic variables are also associated with detection. Some studies in the UK and USA found that ethnic minorities with mental health problems were more at risk of *not* being detected[19,24] while other studies did not.[25,26] The study of Nuyen and co-workers[23] found that a low

educational level significantly increased the risk of under-diagnosis.

Furthermore Borowsky et al.[19] found that men (from the USA) were at risk of non-detection while the studies of Bhui and colleagues[25] and Maginn and co-workers[26] found that (British) women were less well detected than men. However, the study of Del Piccolo and colleagues[14] showed that (Italian) women shared their traumatic experiences more with their GP, particularly when they had known their GP for a long time.

Finally, physicians were less likely to detect mental health problems in patients younger than 35[19], whereas older patients were more likely to be recognized.[21,22] Such a difference can also be explained by the fact that visits of patients older than 45 lasted significantly longer than those of younger patients, even when controlling for physical health status.[27] Furthermore, Del Piccolo and co-workers[14] showed that the elderly were more likely to find it appropriate to confide in their GP. In contrast, Maginn and colleagues[26] reported no significant relationship.

Few (empirical) studies focused on using GP information of disaster-affected victims suffering from post-traumatic stress.[28] Donker and colleagues[28] found in a sample of victims affected by a plane crash in The Netherlands that three-quarters of the self-reported physical and psychological symptoms (6 years after the disaster) were reported to the GP. Interestingly, victims attributed their symptoms more to the disaster than did their GP.[28]

The first aim of the present study is to assess the correspondence between persistent self-reported post-traumatic stress responses and mental health problems on the one hand and the GPs' detection of these problems on the other. Furthermore, we examined which patients were more likely to be identified by their physicians as suffering from persistent post-traumatic stress or mental health problems. In this paper we will focus on persistent symptoms, i.e. self-reported problems 2–3 weeks and 18 months post-disaster.

In this study, data are combined from two main sources: a longitudinal health survey in the disaster-affected community and a GP-surveillance study of disaster-affected patients.

Method

Background

On 13 May, 2000 a major disaster occurred in the city of Enschede (152,000 inhabitants) in The Netherlands. The disaster started with exploding fireworks in a fireworks storage and trade company. The company was situated in a residential area and due to the massive explosion the disaster severely damaged or destroyed about 500 houses. 23 persons were killed and over 900 people were

injured. The Dutch government declared it a national disaster and launched a comprehensive health survey.[29]

Procedures

Part of this health survey was the Enschede Fireworks Disaster Study.[30,31,32] At T1, 2–3 weeks post-disaster, affected residents were asked by mail to participate. Furthermore, the study was announced in the local press to encourage affected residents to participate. From October to December 2001 (18 months post-disaster: T2), participants who gave their written informed consent at T1 were asked to participate again.

Another element was the GP-surveillance.[10] Recordings of symptoms and diagnoses by GPs in electronic medical records (EMRs) established before the disaster were maintained throughout the research period (until 1 December 2001) and were used to monitor health problems. For each patient, all contacts and individual diagnoses were registered. All information on symptoms and diagnoses was classified according to the International Classification of Primary Care.[33,34] In the city of Enschede, 44 (73%) out of 60 GPs participated, and 89% of all disaster victims appeared to be registered with these participating GPs.

Finally, the databases of the Enschede Fireworks Study and this GP-monitor were combined. In accordance with Dutch law, a detailed set of rules and regulations to protect the privacy of the respondents was followed, which had been approved by the Dutch Data Protection Authority. Participants in this study were 18 years or older during the disaster and were registered with a GP at least until 18 months post-disaster.

Measures

Questionnaires

Participants filled out an extensive questionnaire at T1 and T2. The questionnaire contained several standardised questions about their educational level (for this study dichotomized in 1=primary or junior high school, 2=senior high/vocational education/university), ethnicity (1=Dutch native, 2=immigrant) and gender (1=male, 2=female).

At T1 disaster exposure was investigated by a list of 21 items (0=no, 1=yes) about what participants had seen, felt, heard or smelled during or immediately after the disaster. For the level of exposure (sum score) the unit of change was set at one standard deviation (rounded off resulting in 5).

Furthermore, sustained injuries or death of a significant other were assessed (1=no injuries or injuries for which no medical treatment was required and no loss of significant other; 2=injuries for which medical treatment by a GP or

hospital, or hospitalization was required, or suffering the loss of a significant other). The city council of Enschede designated a geographical area as the official disaster area. Based upon this classification it was registered whether survivors were forced to relocate after the disaster because their homes had been destroyed or seriously damaged (1=no, 2=yes).

Depressive symptoms, anxiety symptoms and sleep disturbances were measured at T1 and T2 using the Dutch version of the Symptom Check List-90-R.[35,36] Items have a 5-point Likert scale (1=not at all to 5=extremely) and assess the degree of anxiety, depressive symptoms and sleep disturbances over the past 7 days. For the SCL-90-R a score in (or above) the 80th percentile of a Dutch normative sample was used as a cut-off score, indicating a "high" or "very high" score.[35] At all assessment moments, the internal consistencies of both subscales in both groups were excellent (Cronbach's alpha varied from 0.87 to 0.94).

To assess disaster-related intrusions and avoidance reactions the Dutch version of the Impact of Event Scale[37,38,39] was used at T1 and T2. Scores on the 15 items are rated on a 4-point Likert scale (0=not at all to 5=often) and assess the degree of disaster-related intrusions and avoidance reactions over the past 7 days. A cut-off score of 25 was used to distinguish symptoms at a clinical level, indicating post-traumatic stress disorder.[40] At all measurements, the internal consistencies were excellent (Cronbach's alpha varied from 0.90 to 0.94).

GP measures

We used the demographic variables age (in decades) and marital status (1=not being single, 2=being single) from the GP-monitor. ICPC codes P76 (depression), P76.1 (reactive depression), P76.2 (other, not-specified depression) and P03 (feeling down or depressed) were used as the GP-diagnosed counterpart to self-reported depressive symptoms. ICPC-codes P01 (feeling anxiousness, nervousness or tense) and P74 (anxiety disorder or anxiety condition) were used as the diagnosed counterpart to self-reported anxiety symptoms. ICPC-code P06 (insomnia or other sleep disorder) was used as the counterpart to self-reported sleep problems. The ICPC-code P02 "psychological crisis/temporary stress reactions" constituted the diagnosed counterpart to self-reported post-traumatic stress reactions.

A number of diagnoses and symptoms pertaining to psychological and social problems were clustered into one composite variable. This so-called psychosocial cluster comprised ICPC codes relating to psychological complaints, fear of developing a somatic disease (e.g. cancer) or a somatic disease with a psychological component (e.g. hyperventilation). This cluster was used as a counterpart to the SCL-90-R total score.

In this paper, only new diagnoses (i.e. new cases) were studied, so "re-diagnoses" from before the disaster were excluded. Thus, a distinction could be made between (1) no contact with a GP; (2) contact with a GP with a specific diagnosis or symptoms corresponding the self-reported problems; and (3) contact with a GP without a specific diagnosis or symptoms corresponding the self-reported problems. The term diagnosis in this paper includes both symptoms and diagnosed disorders.

Furthermore, the number of contacts a patient had with their GP from the disaster until 1 December 2001 was counted.

Analysis

To study possible differences between the sample and all disaster-affected residents who filled in a questionnaire on T1, we used *t* tests and χ^2. The correspondence between persistent self-reported symptoms and those diagnosed by a GP was analysed by comparing the high IES and SCL-90-R scores with the GPs' diagnoses by means of cross-tabulation. With respect to persistent self-reported mental health problems, 4 temporal score patterns were discerned (T1–T2): (1) low-low, (2) high-low, (3) low-high, and (4) high-high.

A series of multiple logistic regression analyses were used to test the predictive value for GP-diagnosed counterparts of self-reported mental health problems, the number of GP visits, demo-graphic characteristics and disaster experiences. The self-reported mental health problems were entered in the analyses as: none, not persistent, and persistent. The dependent variable was the specific GPs' reported symptoms and diagnoses. At step 1 (Model 1) selfreported mental health problems and number of GP visits were entered ; at step 2 (Model 2) disaster experiences were entered; and at step 3 (Model 3) demographic characteristics [e.g. age, gender, foreign ethnicity, marital status (single) and educational level] were entered into the model.

Results

Response

A total of 1,567 disaster-affected residents filled out the questionnaire at T1 (estimated response=30%) and at T2 1,116 survivors responded (response of the second wave was 71.2%). In total 879 of these respondents were registered in the GP-monitor as well. This constitutes the sample of this study. Of the responders to both the first and second wave (n=1,116), 237 victims were not registered in the GP-monitor.

The differences between our sample (the group responders at T1 and T2 who

were also registered in the GP-monitor) and the non-responders at T2 (n=688) are now described. There were differences in age (t=-6.86, P=0.001), ethnicity (χ^2=67.70, P<0.001), gender (χ^2=7.98, P<0.01), and marital status or longstanding relationship (χ^2=9.82, P<0.01) between the responders (who were also registered in the GP-monitor) and non-responders at the second wave. The former group was older, contained fewer migrants, more males and fewer singles than the latter group (at T2). There were no differences in educational level.

Concerning self-reported disaster-related experiences the two groups did not differ in the percentage of affected respondents who had to be relocated due to the disaster. Furthermore, both groups were equally exposed to the disaster. Concerning psychological problems 2–3 weeks post-disaster (T1), there were no significant differences between responders and non-responders at follow-up. Furthermore, non-response analyses for the first survey showed that the prevalence rates of mental health problems 2–3 weeks post-disaster were not affected by the non-response.[41]

Characteristics of sample

The mean age of our sample was 44.4 years (SD=15.1); 43.9% were female, 82.6% were married or living with a partner and 21% were migrants. For 52.1% the highest level of education was primary school or pre-vocational secondary, for 45.8% this was pre-university or vocational education or university.

Approximately 10% of the affected residents reported physical injuries or the loss of a significant other and 19.2% had to be relocated in the aftermath of the disaster. In the 18 months after the disaster the mean number of contacts with a GP was 10.7 (SD=9.8).

At T1 76.3% of the sample showed a high level of self-reported intrusions and avoidance reactions and 46.9% of the sample reported psychological distress (i.e. high SCL-90-R scores), such as depressive (54.6%) or anxiety (49.1%) symptoms, and sleep disturbances (55%). At T2 42.5% of the affected residents reported a high level of intrusions and avoidance reactions. The percentage of affected residents with psychological distress declined to 34.6% at T2. Furthermore, at T2 37.4% of the sample showed depression symptoms, 33.5% showed anxiety symptoms and 38.8% had sleeping disturbances.

Correspondence between persistent self-reported and GP-reported psychological problems

As shown in Table 1, 169 of the 280 affected residents (60.4%) with a high level of self-reported intrusions and avoidance reactions at both T1 and T2 were diagnosed with "psychological crisis/temporary stress reactions", while 36.8%,

visiting their GP, received another diagnosis. In 15.2% (*n*=24) the GP diagnosed "psychosocial crisis/temporary stress reactions" while the respondents did not show a high level of self-reported intrusions and avoidance reactions at T1 and T2. However, we are not sure if these cases can be considered as "false positives", because a patient could have been correctly diagnosed for post-traumatic stress in between the two waves. Furthermore patients could have reported intrusions and avoidance reactions to the GP that originated from other traumatic events. The GP did not report any post-traumatic stress symptoms in 68.4% of the sample responders, with no self-reported intrusions and avoidance reactions on both waves.

Table 1 *Rates of GPs' detection of self-reported post-traumatic stress and general mental health in disaster-affected residents*

		Contact with GP							
				Contact Yes Diagnosed couterparts[2] Yes		Contact Yes Diagnosed couterparts[2] No		Total group (N = 879)	
Self-report variable	Pattern[1]	No contact							
		n	Row %	n	Row %	n	Row %	n	Column %
IES	Low-low	26	(16.5)	24	(15.2)	108	(68.4)	158	(21.1)
	High-low	15	(5.4)	95	(34.1)	169	(60.6)	279	(37.4)
	Low-high	1	(3.4)	12	(41.4)	16	(55.2)	29	(3.9)
	High-high	8	(2.9)	169	(60.4)	103	(36.8)	280	(37.5)
	Total	50	(6.7)	300	(40.2)	396	(53.1)	746	(100.0)
SCL-90 Depression	Low-low	30	(9.9)	9	(3.0)	263	(87.1)	302	(41.3)
	High-low	15	(8.9)	13	(7.7)	140	(83.3)	168	(23.0)
	Low-high	3	(7.0)	3	(7.0)	37	(86.0)	43	(5.9)
	High-high	5	(2.3)	32	(14.7)	181	(83.0)	218	(29.8)
	Total	53	(7.3)	57	(7.8)	621	(85.0)	731	(100.0)
SCL-90 Anxiety	Low-low	31	(8.9)	5	(1.4)	312	(89.7)	348	(45.7)
	High-low	13	(7.8)	12	(7.2)	142	(85.0)	167	(21.9)
	Low-high	5	(10.9)	4	(8.7)	37	(80.4)	46	(6.1)
	High-high	5	(2.5)	40	(20.0)	155	(77.5)	200	(26.3)
	Total	54	(7.1)	61	(8.0)	646	(84.9)	761	(100.0)
SCL-90 Sleep disturbances	Low-low	35	(11.8)	7	(2.3)	255	(85.9)	297	(37.9)
	High-low	5	(2.5)	15	(7.6)	177	(89.9)	197	(25.1)
	Low-high	2	(3.2)	7	(11.1)	54	(85.7)	63	(8.0)
	High-high	12	(5.3)	46	(20.3)	169	(74.5)	227	(29.0)
	Total	54	(6.9)	75	(9.6)	655	(83.6)	784	(100.0)
SCL-90 Total score	Low-low	34	(10.7)	117	(36.8)	167	(52.5)	318	(52.6)
	High-low	8	(7.5)	57	(53.3)	42	(39.3)	107	(17.7)
	Low-high	3	(9.1)	20	(60.6)	10	(30.3)	33	(5.5)
	High-high	6	(4.1)	106	(72.6)	34	(23.3)	146	(24.2)
	Total	51	(8.4)	300	(49.7)	253	(41.9)	604	(100.0)

[1] The pattern is the level of severe symptoms on the questionnairs 2-3 weeks and 18 months post-disaster.

[2] The GP recorded couterparts of the concerning psychological problems

The same pattern is observed in the percentages of respondents with a persistent high level of psychological distress (i.e. SCL-90-R totalscore) and their GP detection rates. The agreement percentage between residents' self-reported psychological distress and GP-diagnoses was 72.6%. Furthermore, the number of patients with high self-reported psychological distress at both times who were not diagnosed with psychological problems by their GP was 23.3% (*n*=34). However, the percentage of respondents without self-reported psychological distress, but with a psychological diagnosis from the GP, was 36.8%.

The pattern of recognition rates of specific persistent self-reported psychological problems, such as depressive and anxiety symptoms and sleep disturbances, was found to be different. Only 14.7% (*n*=32) of participants with high depression scores at both times were diagnosed with depressive symptoms by their GP. A similar pattern was found for respondents who had high scores of sleep disturbances or anxiety at both times: about 20% were diagnosed as such by their GP (sleep disturbances, *n*=46/anxiety, *n*=40). The percentages of participants with high levels of depressive or anxiety symptoms or sleep disturbances that were not diagnosed as such were 83%, 77.5%, and 74.5% respectively. The percentages of respondents with a GP diagnosis while not having a high self-reported score were small (see Table 1). Furthermore, only less than 5% of the participants with persistent mental health problems did not visit their GP.

Factors associated with a GP's detection of post-traumatic stress and general mental health

Multivariate logistic regression analyses revealed that participants with a persistent high level of self-reported intrusions and avoidance reactions who visited their GP frequently were more likely to receive a diagnosis for "psycho-social crisis/temporary stress reactions" (Model 1: $\Delta\ \chi^2$=41.1, *P*=0.001). Secondly (Model 2), we entered three disaster-related experiences in the model. Being relocated after the disaster, the degree of exposure to the disaster, and sustaining physical injuries or losing a significant other were significantly associated with GP-reported post-traumatic stress (Model 2: $\Delta\ \chi^2$=37.0, *P*=0.001). Demographic characteristics (Model 3) did not show effects on the registration of post-traumatic stress by the GP, as shown in Table 2. The magnitude of the odds ratios was hardly affected (in Table 2 only the results of the third model of each mental health problem are shown).

Table 2 *Results of third model of multivariate logistic regression analyses for factors associated with the GPs' detection of persistent post-traumatic stress and co-morbid general mental health*

	GP-recorded avoidance & intrusions[a]	GP-recorded psychosocial health[b]	GP-recorded depressive symptoms[c]	GP-recorded anxiety symptoms[d]	GP-recorded sleep disturbances[e]
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Contact with GP	1.07 (1.05-1.10)***	1.11 (1.08-1.15)***	1.08 (1.05-1.12)***	1.03 (1.00-1.06)*	1.03 (1.01-1.06)**
Corresponding questionnaire	1.80 (1.37-2.36)***	1.62 (1.25-2.11)***	1.99 (1.29-3.07)**	3.47 (2.19-5.50)***	2.89 (1.95-4.28)***
Relocation	2.33 (1.48-3.97)***	2.23 (1.28-3.87)**	0.95 (0.43-2.07)	1.05 (0.51-2.15)	1.09 (0.59-1.99)
Exposure	1.43 (1.18-1.71)***	1.40 (1.14-1.71)**	0.96 (0.71-1.29)	0.94 (0.72-1.25)	0.96 (0.75-1.22)
Injuries or loss sign. other	2.00 (1.12-3.55)**	1.55 (0.77-3.10)	1.13 (0.47-2.73)	2.45 (1.11-5.42)*	0.96 (0.44-2.10)
Ethnicity (migrants)	0.70 (0.42-1.52)	0.77 (0.43-1.38)	0.65 (0.28-1.51)	0.78 (0.37-1.63)	0.95 (0.51-1.77)
Gender (females)	1.13 (0.78-1.64)	1.36 (0.91-2.04)	1.16 (0.59-2.27)	2.90 (1.39-6.02)**	1.27 (0.73-2.21)
Age (older)	1.00 (0.87-1.14)	1.01 (0.87-1.17)	0.98 (0.77-1.25)	1.04 (0.82-1.31)	0.90 (0.74-1.10)
Marital status (single)	1.18 (0.73-1.91)	1.47 (0.87-2.48)	1.14 (0.53-2.47)	1.36 (0.65-2.87)	1.04 (0.54-2.00)
Educational level (high)	1.05 (0.71-1.53)	0.80 (0.52-1.22)	3.42 (1.63-7.17)**	0.68 (0.34-1.36)	1.04 (0.60-1.82)

OR, Odds ratio; CI, confidence interval

* < .05 ** < .01 ***<.001

[a] Corresponding questionnaire is IES

[b] Corresponding questionnaire is the SCL-90 total score

[c] Corresponding questionnaire is the subscare depression of the SCL-90

[d] Corresponding questionnaire is the subscale anxiety of the SCL-90

[e] Corresponding questionnaire is the subscale sleep disturbances of the SCL-90

Concerning the GPs' recordings of psychological problems, the first two models are significant as well (Model 1: $\Delta\ \chi^2$=28.2, *P*=0.001; Model 2: $\Delta\ \chi^2$=21.8, *P*=0.001). In addition to the total SCL-90-R score of the participants, the number of contacts with a GP and disaster-related experiences, such as relocation and the level of exposure to the disaster, were significantly associated with the registration of psychological problems by a GP. However, demographic factors and injuries or loss of significant others did not influence the GPs' recordings of general mental health.

Regarding specific psychological problems, the level of self-reported depressive symptoms, anxiety and sleep disturbances and the number of visits paid to a GP predicted the GPs' recording the corresponding diagnosis/ symptoms (Model 1 depressive symptoms: $\Delta\ \chi^2$=10.2, *P*=0.01; Model 1 anxiety: $\Delta\ \chi^2$=34.4, *P*=0.001; Model 1 sleep disturbances: $\Delta\ \chi^2$=34.5, *P*=0.001). In contrast to post-traumatic intrusions and avoidances and psychological problems in general, disaster-related experiences were of little importance for the specific psychological problems.

As shown in Table 2 the third step (Model 3) significantly contributed to GP's recording of depression and anxiety symptoms. A higher level of education increased the GPs' registration of depressive symptoms while being a female victim increased the registration for anxiety symptoms.

Compared with self-reported psychological problems, the number of contacts and disaster-related experiences, demographic factors were of little importance in this study. For example, having a foreign ethnic background did not significantly influence the GPs' reports concerning mental health problems.

In addition, we re-analysed our data with an IES cut-off score of 35. As expected, there were differences in prevalences between both cut-off scores on both T1 and T2. With a cut-off of 25 and with the cut-off of 35, 280 (37.5%) and 164 (22%) respectively had high scores on both T1 and T2. However, the correspondence rate was hardly affected by the higher cut-off scores. With cut-off score 25 a high-high score on the IES corresponded in 60.4% with the GP-diagnosis and did not correspond in 36.8% of the group with the GP-diagnosis. In the case of the cut-off score of 35 these percentages are 62.8% (correspondence) and 34.1% (non-correspondence) respectively. Further-more, the magnitude of the odds ratios was not affected.

Discussion

The correspondence rate of the GP-reported and self-reported persistent psychological problems was 73% in the period 1.5 years post-disaster. Less than 5% of the participants with high levels of mental health problems on both waves did not visit their GP. Most affected residents with persistent psychological problems had contact with the GP.

Compared with the recognition of depression in the general population (36–62%[17,18,19,20]) the correspondence between self-reported and GP-reported psychological problems appears reasonably high. However, studying the symptoms specifically the correspondence rapidly diminished. With a correspondence rate of 60%, disaster-related intrusions and avoidance reactions were the specific symptoms most detected. However, GPs detected persistent depression, anxiety symptoms and sleep disturbances in less than a fifth of the cases. Non-persistent mental health problems were poorly detected. How can the different correspondence rates be explained?

First, GPs are generally educated and trained physicians. They have to be able to recognize both mental health problems and physical problems, to give natal and palliative care, and so on. For a GP it is sufficient to recognize mental health problems or disorders in general, so that they can refer their patient to specialized mental health services if necessary.

Secondly, different sources of data collection may explain the differences in correspondence rates for specific psychological problems. The self-report questionnaires assess psychological problems in a structured way. We cannot expect a GP to take an extensive psychological anamnesis in a limited period. In most cases a GP writes down a few codes, which probably reflects the most important or more pronounced problem. Furthermore, the different threshold that is being used by the GP compared with the threshold of the questionnaire may account for the variation between self-reported symptoms and GP-diagnosis. This is partly reflected in the relatively low correspondence rates with respect to non-persistent psychological problems.

Additionally, when physical symptoms are also discussed during the consultation, patients are less likely to have their depressive symptoms recognized.[41] Some patients with psychological problems tend to present their somatic symptoms first and only mention their psychological problems late in the consultation.[41] Kessler and colleagues[18] showed that the different styles in attribution of symptoms were associated with the detection rates of anxiety and depression. Patients who explained the cause of their problems in a psychological way were more likely to get a psychological diagnosis than patients who had

a normalizing attribution-style. A normalizing style of attribution had the opposite effect: the stronger a patient's tendency to normalize or minimize his or her symptoms, the less likely they were to be considered depressed or anxious by their GP (Kessler et al. 1999).

Our results suggest that GPs were more likely to identify psychological problems in patients with high levels of self-reported psychological distress who paid a higher number of visits to them. The same pattern is seen with regard to depressive problems, anxiety and sleep disturbances.

We found no indications that the GPs are influenced by individual patient characteristics (e.g. age, marital status and gender) in diagnosing mental health problems. Our finding that immigrants in our sample were not relatively under- or over-diagnosed complies with other studies.[19,24,25,26] Unfortunately, we were not able to distinguish between subgroups of immigrants, owing to the low sample size. Previous studies revealed differences between ethnic minority groups.[26]

However, survivors who were forced to relocate and survivors with high disaster exposure were more likely to be registered by the GP as suffering from psychological crisis/temporary stress reactions and psychosocial problems than other survivors. This finding indicates that the GP diagnosis is partly affected by the survivors status (whether he or she was relocated or highly exposed). It is unknown whether this can be attributed to bias in the GP (for example because the GP was aware of this status and therefore was more sensitive to these problems), reluctance of survivors who were less exposed to the disaster to speak about their post-disaster mental health problems or an interaction between both.

A few study limitations should be noted. With regard to the longitudinal study among the affected residents, the estimated response at T1 was relatively low (30%) with an over-representation of women and immigrants in comparison with the overall population affected by the disaster. However, we found no indication that this selection affected the prevalence rates of problems at T1.

In this study no standardized clinical interviews (such as CIDI) were conducted and the measurement of psychological distress by questionnaires was limited to two moments.

Approximately one-third of the participants who did not express any psychological distress at 2–3 weeks and at 18 months post-disaster on the self-report questionnaires were diagnosed as suffering from psychological problems by their GP. We are not sure if these cases can be considered as "false positives". There is a chance that a patient could have been correctly diagnosed for psychological problems in between the two waves.

In conclusion, the results of our research indicate that GPs function as

reasonably good gate-keepers for mental health services after a disaster: less than 5% of the participants with persistent psychological problems did not visit the GP. The correspondence between GP-reported and self-reported post-disaster mental health problems was hardly affected by gender, ethnicity or education. Presumably, GPs pay special attention to the affected victims' psychological health after such a dis-aster. However, GPs do have to be aware that information about the disaster experiences of their patient may affect their diagnosis.

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Chapter 7

Conclusions and discussion

7.1 Preliminary

The rationale for this study is threefold:

1) the lack of knowledge concerning psychosocial consequences in a disaster affected ethnic minority community in a West European setting
2) the vulnerability of ethnic minorities after disasters
3) the relative lack of attention to the ethnic minority point of view concerning psychosocial consequences of a disaster

Data of the second and third wave of the Enschede Disaster Study[1] including the qualitative interview study among Dutch Turkish disaster victims, and the data from a GP-monitor after the disaster were used. This thesis is one of the few and possibly even the first published study that compares disaster-affected minorities to non-affected ethnic minority groups.

7.2 Conclusions

1) The psychosocial impact 4 years after the disaster is higher for affected ethnic minorities than for affected Dutch natives

The impact of the disaster on mental health problems and PTSD was found to be quite profound. 58–65% of the ethnic minority group suffered from mental health problems (compared to 16–33% of the affected Dutch native group). When adjusting for the cut-off scores to the 95% percentile, still 28–41% of the affected ethnic minority group had mental health problems indicative of a mental disorder compared to 5–8% in the affected Dutch native group. Almost 40% of the ethnic minority group suffered from a PTSD 4 years post-disaster.

These rates are quite alarming, especially 4 years after the disaster. General studies on PTSD after disasters show that 10–20%, but rarely more than 30%, is or has been affected.[2] Compared to other studies among ethnic minorities, these levels of psychological complaints are indeed quite substantial: for ethnic minorities the PTSD-rates more than a year after a disaster varied from 10% (hurricane Ike)[3] up to 31% (for Hispanics, 6 years after September 11 attacks).[4] Studies showed that 39% of earthquake-affected people in Turkey had a PTSD even 20 months post-disaster.[5]

Is the impact of a disaster, as far as mental health problems are concerned, stronger for affected ethnic minorities than for comparable Dutch natives? Because of possible cross-cultural differences, it is doubtful whether levels of psychological problems in the one group may be directly compared to levels in the other group. There could be possible differences in response tendencies in the

questionnaires between ethnic minorities.[6] By *indirectly* comparing the affected ethnic minorities to affected Dutch natives, possible response tendencies were neutralised as much as possible. Consequently, the two affected ethnic groups were not directly compared, but indirectly through the use of their comparison groups. The results show that there are indeed differences in the psychosocial impact of the disaster between the ethnic minorities and the Dutch natives.

Notwithstanding the cautious and careful comparisons, the question remains: do these results have the same meaning for different ethnic groups? Do the mental health questionnaires measure the same psychological concepts in ethnic minorities when compared to the Dutch natives? The results concerning mental health outcomes are partly confirmed by the other studies presented in this thesis. In the qualitative interviews similar problems arose. The interview study showed nuances and additions to the self-registered psychological problems, however, the concepts endorsed in the standardised questionnaires were confirmed. The qualitative results endorse the results from the questionnaires.

2) Prominent roles of anger, and hostility in the daily life of the affected Dutch Turkish

To have a good understanding of the psychosocial consequences of a disaster it is important to complement quantitative findings with in-depth, qualitative research. Especially with ethnic minorities in Western Europe, the so-called etic way (perspective of the researchers) of research by means of standardised questionnaires (see Chapter 1) can easily overlook specific ethno-cultural aspects. The striking outcome of the qualitative study among Dutch Turkish affected was the prominent role of anger, irritation and hostility in the daily life of those affected. The respondents explicitly reported that these problems occurred only after the disaster.

On the one hand, the presence of anger is understandable as a result of the psychological processing of traumatic events.[7] On the other hand, these emotions can equally be traced back to dissatisfaction and frustration as a result of the disaster. This concerns both the disappointment about the financial settlement after the disaster and the compensation of the material losses. A previous quantitative study among Dutch Turkish affected by the Enschede disaster, carried out 18 months after the fireworks disaster[8], and the study of Chapter 2, 4 years after the disaster, show that strong feelings of anger and irritation occurred to the same extent as other surveyed problems, such as fear and depressive complaints.

3) Affected ethnic minorities experienced greater lack of social support than affected Dutch natives 4 years after the disaster. This lack of social support probably existed before the disaster.

Some of the interviewees mentioned that the family ties might have been strengthened as a result of the disaster. After the disaster, Dutch Turkish victims became more aware of their family bonds. The bonds became closer. However, others mentioned that family ties deteriorated after 3 years. Just after the disaster, some respondents were forced to live with members of their family for some time. They mentioned that for these relatives, it was not an option to let their victimised families stay with others in a centrally organised relief centre. Some, however, mentioned that to depend heavily on relatives and stay with these relatives for periods of weeks had its negative effects on the social support systems. Because of these contradictory reports, we studied (perceived) social support in the affected ethnic minority community 4 years post-disaster. Results of the questionnaire study clearly indicate that differences in support between ethnic minorities and Dutch natives were not so much a consequence of the disaster but were largely present before the disaster.

Our findings suggest that the differences in lack of social support (often found in disaster studies) are probably not a consequence of the fact that immigrants experience relatively more psychosocial stress after a disaster (as is stated by other studies)[9], but that such differences originate from the lack of social support for immigrants in general. It was found that 4 years after the disaster, a third of the affected ethnic minority group felt that they did not have one single person to talk to and with whom they could share their emotional problems. Among the affected Dutch native group this percentage was significantly lower. Furthermore, as expected, the affected immigrant group perceived a higher deficiency in social support than the affected Dutch native group. The interviews illustrated the lack of perceived social support (see Chapter 3): e.g. some young first generation Turkish interviewees had their specific vulnerabilities concerning social support: the marriage migrants that were interviewed, spoke about the loneliness in their life. Due to language problems, they depended heavily on their second-generation husbands or wives and in-laws. Some of them were not on good terms with their in-laws. And due to the disaster there was no money to visit their families and friends in Turkey.

The perceived lack of social support was most likely not caused by the disaster. In fact, the results indicate that the social support system of the immigrant group is not adequate, especially when compared to that of the (affected or non-affected) Dutch native groups. In other words, the lack of social support often found in disaster studies is not the result of immigrant groups experiencing

relatively more psychosocial stress after a disaster; the differences originate from the lack of social support in the immigrant groups in general.

What is the possible explanation for these ethnic differences between the groups of victims without PTSD? More collectivistic and family-centered cultures foster a focus on groups, contexts and relationships, and personal feelings, and their free expression may be relatively less important. A study by Matsumoto et al.[10] of various cultures showed that people in individualistic cultures use and support more emotional expression in interaction with members of their in-group, whereas people in collectivistic cultures use less.

4) Acculturation of ethnic minorities after the disaster is associated with psychological problems 18 months after a disaster

One central theme concerning ethnic minorities and mental health is adaptation to the majority culture. Our cross-sectional study revealed that 18 months post-disaster, there was an association between the acculturation domains of *keeping norms and values of original culture* and *limited skills to cope with the demands of the new society* and post-disaster mental health problems. The non-ability to manage daily tasks within the host society, such as renting an apartment or arranging insurance, was linked to mental health problems in the context of a disaster. Furthermore, ideas and opinions of immigrants about ethical subjects such as *Dutch women behave too freely, Dutch parents give their children too much freedom* were associated with mental health problems 18 months post-disaster. Remarkably, in the non-affected comparison group no such associations were found. Furthermore, mean scores on acculturation did not differ between ethnic groups. Therefore, we assume that the acculturation levels were not influenced by the experience of a disaster in contrast to what some interviewees in the qualitative analyses alleged: there could also be a tendency for separation from the native Dutch community after the disaster. Some second-generation immigrants spoke about the tendency to return to their Turkish culture and find their roots. One of the reasons was to strengthen the connection between family and to have more social support.

5) The General Practitioners recognised the majority of disaster related post-traumatic symptoms

To act as a proper gatekeeper to the mental health services, a GP should well recognise the problems so that a proper referral to more specialised care may be given. The GP-monitor study showed that in 60% of the specific post-disaster mental health problems such as disaster related intrusions and avoidances and in 73% of general mental health problems the GP made the correct diagnosis.

More importantly for this thesis, the correspondence between GP-reported and self-reported post-disaster mental health problems was hardly influenced by ethnicity. This means that self-reported disaster related post-traumatic symptoms, depression and anxiety symptoms, and sleep disturbances were equally recognised in both ethnic minorities and Dutch natives. Moreover, fewer than 5% of the participants with persistent psychological problems chose not to apply for to their GP. This means that the vast majority of member of the affected group did see a GP. We may conclude that the mental health problems of affected ethnic minorities were recognised in the majority of the cases. Recognising mental health problems could lead to a referral to specialised mental health services. This was not included in the studies presented in this thesis. However, we may assume that mental health services were readily accessible to affected ethnic minorities, as was shown in the study of Van der Velden et al. (2007)[11] and Chapter 2: ethnic minorities used more mental health care than Dutch natives.

7.3 Explanations of the psychosocial impact for disaster affected ethnic minorities: the fragile equilibrium of the *condición migrante* collapsed

Some of the result of this thesis are quite puzzling. How can we explain these high levels of mental health problems in the ethnic minority group? Unfortunately there is no answer in the presented studies of this thesis. However, we can find answers in the concept of the *condición migrante*: the possible disadvantaged situation the individual ethnic minority or immigrant lived in before the disaster. The fragile context of their social surrounding before the disaster create vulnerability post-disaster, and the community dynamics after a disaster can create extra stress. The negative spiral ethnic minorities may experience may be explained with the Conservation of Resource (COR) Theory of Hobfoll.

7.3.1 The individual in its social surroundings

One of the striking outcomes of the qualitative study of the Dutch Turkish victims was the frequent attribution of the problems to the disaster: a full dependency to their malaise "*Everything used to be good, and now...*". The disaster was blamed for their misery. This could well be the case, of course, for the affected Dutch Turkish victims. However, the studies in Chapter 2 and 4 showed that the situation of the ethnic minorities before the disaster was also not good. The ethnic minority comparison group in Tilburg had equally high levels of psychological problems when compared to their Dutch counterparts. Chapter 2 showed that almost two-thirds of the affected ethnic minority group had a variety of mental health disturbances.

Similar phenomena of unspecific dysthymic feelings were described in the elaborate study of Erikson about the Buffalo Creek disaster, in 1972. A black avalanche of water and mine waste resulting from a dam break caused a mountain village to vanish, killing 125 people and leaving more than 4,000 people homeless. Erikson wrote:

> Half seriously, half in jest, some doctors referred to their malady as a chronic, passive dependency syndrome [...] In a sense, illness or infirmity comes to serve as a recognisable name for the otherwise vague maladies that plague people. [...] To be ill in some defined way (or to be known by some other negative quality) is often better that to be nothing all.[12, p.112]

In line with the comparison of the situation after the Buffalo Creek two important issues should be taken into consideration: the notion of external locus of control and the appraisal of mental health problems and post-traumatic embitterment.

Striking in the interview study is that the perspective of the affected ethnic minorities was often an external attribution of problems. This is consistent with the observation that people from non-Western cultures are more inclined to find externalised explanations for psychological complaints.[13] The importance of this external attribution may be caused by a wish to prevent a loss of face, social status or stigmatization.[14] This may play a prominent role in collectivistic cultures. In these cultures the individual is (so to speak) ancillary to the collective and loss of face is consequently much more apparent. By pointing to the disaster as a cause for their problems, there is a "good reason" to be ill. They are therefore "not crazy" but rather got into trouble as a result of external circumstances.

Embitterment

The high levels of mental health disturbances and using the disaster as an excuse for mental health problems could be explained by the concept of post-traumatic embitterment.[15] Bitterness and embitterment has long been a familiar concept in the literature of psychosocial consequences of disasters, wars and other critical incidents. The notion of post-traumatic embitterment was initially described following the fall of the Berlin Wall. East German immigrants with high expectations for the new Germany were disappointed by West German welcome or rather non-welcome. After a few years they developed mental health problems and professional and individual changes were observed. Linden attributed these mental health problems to embitterment.

> Embitterment is an emotion encompassing persistent feelings of being let down, insulted or being a loser, and of being revengeful but helpless. Embitterment as a state of mood is distinct from depression, hopelessness, and also anger as such, though it can share common emotional features or go parallel with each of these other emotions." [15, p.197]

Similar feelings of embitterment are also found in the traditional West European immigrant groups (e.g. Turkish immigrants in Germany).[16] The fragile position of migrants, in a relatively new society, could be responsible for these findings.

This bitterness could also be an explanation for the severe impact for ethnic minorities after the Enschede disaster. In a recent study of Kaniasty (2012), the concept of post-disaster bitterness is presented.[17] Some of the interviewees in Enschede submit that their expectations of the Dutch disaster (mental health) care were high. "*In The Netherlands everything is managed so well, why do I still have these problems 3 years after the disaster?"* Also Kaniasty found that in the 1997 flooding in Poland, the indicators of post-disaster social bitterness was associated with the perceptions of community cohesion: participants who were more dissatisfied with post-flood aid reported lower levels of community cohesion.

This embitterment might be caused by high expectations of the disaster care, combined with the appraisal of the disaster. Appraisal is a process, reflecting ones subjective perception, interpretation and evaluation of the event. Researchers, policy makers and mental health professionals may see the Enschede disaster as a single traumatic event.[18] The aftermath of the Enschede disaster seen against the background of the condición migrante may however be equally or even more stressful for affected individuals than the disaster itself. Still, we have to be careful to exclusively attribute bitterness to affected ethnic minority groups. Embitterment may also be seen in disaster-affected ethnic majority groups.[39]

Regarding embitterment, could PTSD with its cluster of three symptoms (intrusions, avoidances and hyperarousal[19,20]) as a consequence be too narrow? Or could these long-term problems be understood within the stress sensitization perspectives? Stress sensitization indicates enhanced reactivity of the individual to new stressors following prior exposure to severe stressors that may explain progression of distress over time.[21] Again, these discussions should of course not be limited to the cross-cultural field.[see 7]

Culture: collectivism-individualism paradigm

Both the external locus of control and the appraisal of the affected victims that all problems were due to the disaster, may be explained by the more collectivistic

cultures Turkish and North African ethnic minorities live in. In explaining the results of our studies, we often refer to the individualism-collectivism dichotomy. E.g. we linked the perceived lack of social support among the ethnic minorities to more collectivistic and family-focused cultures: a focus on groups, contexts and relationships, whereas individual feelings and their free expression could be relatively less important.

The individualism-collectivism is a widely used notion[22] to explain the differences between mental health14 after disasters.[23] There is, however, a debate on the usefulness of individualism-collectivism dichotomy. Is it not too diffuse and inclusive?[24] According to Triandis and Suh (2002)[25] and further elaborated in Kağitçibaşi (2011)[24] the individualism-collectivistic dichotomy is related to the emphasis on aims: the aims of the group versus the aims of the individual. With regard to this distinction, Markus and Kitayama (1998) proposed a two-dimensional model for cross-cultural differences in the "self".[26] The two are defined as either autonomy or social relatedness. The one is stimulating independence and the other is stimulating interdependence. In order to describe these individual dynamics of affected ethnic minorities, these (so-called) independence family models could be applied. The individualism-collectivism dichotomy refers to more than dependencies in family structures: it refers to power and gender structures, femininity and masculinity etc. In this thesis we use it especially in the context of the in- and interdependencies in families. In attributing all negative consequences of their daily life to the disaster, the affected individuals do not have to blame their less promising community and family structures.

One of the striking outcomes of Chapter 5 is the relationship between the acculturation factor "Norms and Values" and mental health problems after a disaster. In the interview study of Chapter 3, some second-generation respondents noted that contact with their original culture played a fundamental role in re-establishing their social system. This second generation is caught in between two cultures. On the one hand being and feeling Dutch in the public domain such as at work and school and on the other hand feeling Turkish and adopting the traditional values from their parents' culture.[27] A substantial part of the second- and third-generation Dutch Turkish community has its circle of friends and contacts in their home culture. A recent study, moreover, show that their acquaintances become increasingly mono-cultured (from their home culture).[28] These multiple roles people play in society may result in more friction, which may cause more problems, especially after a disaster when life is under additional strain.

7.3.2 The conservation of resource theory

The described dynamics of lack of social support before the disaster, the expectations that were not fulfilled after the disaster may be translated into general feelings of embitterment after the disaster, the external locus of control of disaster-related problems which result in a complete lack of control in one's life, can be explained by the Conservation of Resource (COR) Theory of Hobfoll.[29] Combined with the history of cultural bereavement of an immigrant (see Eisenbruch[30]), the possible up-rootedness of immigrants, the disaster experience eventually ends in a negative cycle of resource losses. Eisenbruch states that cultural bereavement is the experience of the uprooted person resulting from the loss of social structures, cultural values of the majority, and self identity: the person continues to live in the past.[30] With the disasters' destruction of their house including their homelands' physical memories, some affected were uprooted for a second time in life. This is in line with the COR-theory, that loss is more potent than gain. Cycles of loss will consequently have greater impact and will be easier accelerated.

How may these cycles be prevented? Affected people have to invest in recourses, such as adapting in the host society with good knowledge of language, which gives an easier access to care. This access to care after disasters leaves no room for the feeling that certain groups are missing out on care. Another resource is having a job, which gives people a distraction from their problems at home. Disaster-affected people with a job have a broader and less vulnerable network in the host community.

After the disaster, some of the Dutch Turkish affected were inclined to return to their own culture: this could also be connected to the Conservation of Resources Theory of Hobfoll. In general more than half of the Dutch Turkish immigrants identify primarily with Turkey and more than 25% with both Turkey and The Netherlands.[28] Studies show that almost 50% of the second and third generation does not feel accepted in The Netherlands. Still, the majority feels at home in The Netherlands. Within the highly educated second generation, there is an "integration paradox": they are better acculturated and adapted to The Netherlands than the other generations of immigrants; however, they feel the least accepted.[28,31]

Not feeling accepted in The Netherlands, could affect the mindset of the expectations after a disaster. By settling again in the original, traditional culture of interdependencies, and separating oneself from the Dutch independent culture, the social support systems, can be put into position.

7.3.3 Community after a disaster

Another explanation of these long-term and serious problems can be found in the consequences of the deconstruction of social structures. The classic French sociologist Durkheim connected a higher rate of suicides in Germany to the deconstruction of Protestant societies in his Anomie theory as early as 1890.

Could the deconstruction of the ethnic minority community be an explanation for the higher impact of the disaster? The study after the Buffalo Creek disaster showed the same phenomena. Erikson submitted that especially in interdependent, collectivistic communities "*the larger collectivity around you becomes an extension of your own personality, an extension of your own flesh. This means that not only are you diminished as a person when that surrounding tissue is stripped away, but that you are no longer able to reclaim as your own the emotional resources you invested in it.*" [12, p. 191.] He states that to be *"neighbourly"* is not a quality someone could carry with him or her into a new situation. "*The old community was your niche in the classic ecological sense, and your ability to relate to that niche is not a skill easily transferred to another setting.*" [12, p.191.] Would this exclusively apply for the ethnic minority group or could this also be relevant for the Dutch native community as well? To answer this question a further question should be asked: is it the traumatic nature of a disaster, or is it merely the effects of the aftermath of the disaster? The Enschede disaster destroyed the community and as a consequence people had additional stressors. But the same patterns were seen in non-traumatic disasters such as the Exxon Valdez Oil Spill in Alaska, where 600 community residents were exposed, as well.[32] The ethnic minority (the Alaskan natives) was at much higher risk for psychological problems than the Caucasian Americans. The reason was that the destroyed natural resources were not simply a means of economic sustenance but also a way transmitting traditional values and culture to the next generation. In Enschede, the loss of community in the neighbourhood might have added to the vague feelings of uprootedness which could have already been there before the disaster. After the disaster of Enschede, the government put a lot of effort in the reconstruction of the neighbourhood. However, with the reconstruction, the community or neighbourhood for the ethnic minority groups was not necessarily restored.

7.4 Methodological deliberations

Many problems such as the bias of the sample, the instruments etc. have to be taken into account when carrying out cross-cultural research. Most health studies are not carried out by cross-cultural psychologists, particularly in case of a disaster in Western Europe. Multiple agencies were working on the Enschede

disaster. This is not unusual in similar West Europe cases. In Enschede, the main type of research was epidemiology. Their very strict ways of sampling may be disadvantageous to the optimal involvement of ethnic minorities in the health studies.[33] This (in its turn) could have negative influences on health studies after disasters. There is a risk that ethnic minorities are not at all or only scarcely represented. Second, mostly easily accessible Western instruments were used. For practical reasons, when a disaster study has to be organised in a very short time, it is difficult to examine the cross-cultural validation of instruments. In the case of Enschede, 2–3 weeks after the disaster the first wave already was conducted among 4,456 victims, with a response of 26%.[34]

Fortunately, in the Enschede Disaster Study the main focus of the study was not primarily epidemiological: the questionnaire studies contained several psychological and social-validated questionnaires. Furthermore, our instruments were already validated in different studies with ethnic minority groups; e.g. the PTSD Self Report Scale and the IES were already used in several ethnic populations.[35,36] Furthermore, the use of different methods of research (GP monitor/questionnaires/qualitative research) is very suitable for research among ethnic minorities. It can be considered as triangulation of the results[37]: the same patterns of results were shown in the self-reported questionnaires, the observation of the GPs (recognition of the IES and SCL-90 results), and the answers the affected people gave in the interviews largely correspond with the results of the questionnaires. The best option to optimise the triangulation would have been to include clinical interviews.

A limitation in our study was the way the qualitative study was designed. We restricted the research to one ethnic group: the affected Dutch Turkish population. This was the largest ethnic group in the affected neighbourhood and the largest ethnic group in the study. It limits the research, however, to one perspective. Several cultural groups were not interviewed. This could colour our results. Furthermore, there was no Dutch reference group. The results in the Dutch Turkish group may be not so different from the native Dutch perspective. E.g. in other traumatic settings, victims have high (even overstretched) expectations of disaster care, too. Some authors refer in this case to the victimised society[38,39], however, others doubt this suggestion.[40] Is it preferable that qualitative studies are only limited to ethnic minorities affected by disaster? Probably not, considering that in Western populations, qualitative research could provide insight into phenomena that change over the years.

Another problem in the sample was the number of affected ethnic minorities. In the first wave the response was fine compared to the Dutch native affected. However, the non-response between the first, second, and third wave was profound. Consequently, the group was too small to be split in mono-ethnic groups. The Dutch Turkish group was the only group that could be independently used. However, due to the fact that this group was also quite small, we chose to do all analyses with the entire ethnic minority group. The second problem of the non-response (as a consequence of the relatively small sample) is that we could not study longitudinal differences within the affected ethnic minority group. There was a gap between the sample of the second and third wave.

With regard to the universalists-relativists discussion introduced before, we included both the *emic* and the *etic* side of research because of the mixed-method design. Research in the context of a national disaster, however, makes pragmatists of all researchers. Furthermore, as all studies in non-Western communities show (see Table 1 in Chapter 1), general concepts such as PTSD, anxiety and depression are used quite universally. We always have to be cautious, though, that no specific themes or dynamics that are important in non-Western or immigrant cultures are missed.

7.5 Implications for programmes for disaster-affected ethnic minorities and suggestions for further research

After the disaster in Enschede more than half of the affected ethnic minority groups applied for mental health care (see Chapter 2 and Van der Velden et al., 2007).[41] Still 40% had symptoms of a PTSD after 4 years. An explanation could be that the individual, Western treatment is not always suitable for migrant groups from a collectivist culture. The underlying beliefs of the available treatments do not always fit into the worldview of the immigrant or ethnic groups.[42] Within collectivist cultures healing means that the groups' interests are represented and not merely the individuals' health. This can conflict with the targets of Western therapies, that are more oriented toward individuals. The Western talking-cure is, moreover, not always seen as best for ethnic minorities. Although this may also be true for affected Dutch natives, migrants from more traditional, rural areas may be less accustomed to talking (frequently) to a relative stranger about their mental health problems.

Does this imply that evidence-based trauma therapies such as EMDR combined with CBT are not suitable for ethnic minorities? Such therapies must of course be studied further and possibly adapted to the needs of the ethnic

minority groups.[43] Special attention is needed in therapy for coping with specific problems often seen in ethnic minorities (see for an overview Knipscheer et al., 2012)[44]: e.g. to the mobilisation of social support systems in collectivistic, interdependency social systems. The focus on successful mobilization of social support is important because it helps the survivors in their recovery efforts and it allows them to appraise their social worlds as reliable, caring, and trustworthy.[45] Further attention should be paid to the management of expectations of the therapy; activating and regaining control over one's own life. Finally, attention should be given to externalisation e.g. in anger management. Thus, the self-efficacy of those affected may be enhanced in terms of regaining control of their problems by supporting of their social system. In the more individual or group orientated therapies, much can be learned from refugee therapies and general intercultural therapies.

The findings of this study clearly suggest that post-disaster mental health policies should concentrate on those people with low levels of skill to survive in the new society. This is in line with the current focus in post-disaster care on the facilitation of acquisition of essential resources.[2,46]

In the first days and weeks after a disaster, victims need practical support, reliable information about their relatives, about the disaster, the reunion with loved ones, and attention and recognition of the experience of the disaster etc. Where necessary post-disaster care has to provide for these needs, offering food, safe shelter, an (online) Information and Advice Centre, commemoration ceremonies or the facilitation of contact between the victims. Providing these services for the victims' needs will result in a reduction of stress. With the reduction of stress after the disaster, the vulnerability to mental health problems will decline.[46] However, victims with low levels of skill to survive in the new society may need more attention.

The acculturation domain of keeping traditional norms and values is, however, contrary to the Dutch care system after a disaster where self-efficacy and self-oriented cognitive functioning are central goals. There could be a discrepancy with the beliefs the affected immigrants hold on to, in order to cope with the disaster. In disaster health programs creating awareness with the healthcare professionals is a start.

In these post-disaster programs there should furthermore be attention to the "caretakers" of the families. They form the bridges between the two cultures. Especially when there is much damage and consequently much paperwork, they deserve extra attention. These second- and third-generation immigrants are the connection to the other members in the family who are in less contact

with Dutch society (and in specific, disaster-related programs). In case of the Enschede disaster, the second and third generations could be considered the backbone of the system. When they collapse, their family may collapse too.

It is consequently important to activate work-related programs into disaster mental health care. The affected ethnic minorities with jobs tend to be more resilient. Interviewees mentioned that work was a helpful way to overcome their problems. It changed their focus from the disaster to the future, and gave them a distraction. We did not elaborate on this topic, due to the rather small group of affected ethnic minorities that had a paid job in this sample. However, work as mediator for resiliency after a disaster is an interesting subject and should be studied further in ethnic minority groups, as well as in the ethnic majority.

Dealing successively with the negative community dynamics described before is difficult. Several programs were launched in Enschede after the disaster. There were community programmes for women who were affected, programmes to bring affected victims into the mental health care system and yet some people suffering from mental health problems were not reached. The question arises if with these programmes affected victims may be reached at all. In Enschede, the neighbourhoods' reconstruction, the compensation of the financial losses or the remembrance services could also be seen as powerful community interventions for the reduction of extra stressors. Apparently, for a significant group of affected ethnic minorities the reconstruction and these activities (including mental health care services) were not sufficient. With an emphasis on post-disaster psychological problems, other poignant problems more or less specific to ethnic minorities, such as loyalty towards their family, having less access to practical resources due to less access to the Dutch society or a smaller social system, might have been missed. It is however questionable whether these problems can be solved at all. Such problems may become even more difficult if the affected people feel that society considers them as a minority, or if the affected are (and were) disappointed in their own lives. A programme after a disaster must set boundaries for what can be achieved.

Nowadays, other media may be more effective in reaching these ethnic minority groups, such as internet or social media.[47] Young people who have an interdependent family structure especially use the internet to discuss problems anonymously without their parents' or other relatives' knowledge. These communities can be facilitated and established. Other portals to reach the target groups are schools and public child care bureaus. Parents can be easily reached through these organisations and institutions.

The general message of disaster programmes is to focus on the sense of self-

control regarding the interdependent structures people live in: "Only when you take care of yourself, you can take care of your family!"

7.6 Concluding remarks

A disasters' impact is large for immigrants or ethnic minorities. This study shows that, notwithstanding the pre-existence of additional mental health problems in an ethnic minority culture and notwithstanding negative effects of socioeconomic differences, the psychosocial consequences of a disaster for immigrant victims exceed those for Dutch natives. The vulnerable background of these affected could catalyze the extra negative impact on the long term. Other studies have already shown e.g. a lack of social support after disasters in heavily affected communities with severe mental health complaints (see the studies of Kaniasty and Norris).[48,49] In our papers on ethnic minorities, we show that this is mainly due to lack of social support preceding the disaster. The community's role could have an effect, which is thus far unknown. In the elaborate study of Hobfoll et al. (2007), the authors emphasize connectedness and collective efficacy.[50] Mental health care after disasters is nowadays increasingly focused on the individual. Interventions after a crisis or disaster are often formulated in terms of the individual post-traumatic problems. For the treatment of post-disaster mental health problems or disorders these mental health services have to be culturally competent and easily accessible to ethnic minority groups. Individual support and health care, provides a valuable resource after a disaster. However, it should be a part of the entire picture of care offered to an affected ethnic minority community. Attention should also be focused on rebuilding the community and pre-existing social structures. Then, through finding a common identity, a community can invest in its own regeneration.

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Chapter 8

Samenvatting

[Summary in Dutch]

Hoofdstuk 1 Introductie

Het ervaren van een ramp (een levensbedreigende situatie, letsel of zelfs de dood van dierbaren) kan effect hebben op het psychologische welzijn. Ook de nasleep van een ramp, zoals ernstige (soms permanente) fysieke problemen, materiële schade, verhuizen en mogelijke financiële problemen kan langdurig zijn. In de afgelopen jaren zijn er steeds meer studies gepubliceerd over de psychosociale gevolgen van een ramp. Van deze groeiende hoeveelheid onderzoeken ging slechts een deel specifiek over de gevolgen voor niet-westerse bevolkingsgroepen: etnische minderheden in de westerse samenlevingen of de bevolking van niet-westerse landen.

Hoewel lang aangenomen is dat etnische minderheden een kwetsbare groep zijn, die extra gevoelig is voor psychische klachten na een ramp, blijkt dit beeld niet altijd te kloppen. Het overzicht van studies van getroffen etnische minderheden in westerse landen dat in de inleiding van deze dissertatie gepresenteerd wordt, laat een gevarieerd beeld zien. Een aantal studies toont significante verschillen aan tussen de etnische groepen onderling. De studies waaruit blijkt dat er geen significante verschillen zijn tussen de etnische groepen, werden soms gecorrigeerd voor demografische gegevens, soms gecorrigeerd voor de aanwezigheid en blootstelling aan de ramp, of beide. De meeste van deze rampenstudies zijn uitgevoerd in de Verenigde Staten en daarnaast recentelijk steeds meer in China, en in mindere mate in Latijns-Amerika, India en het Midden-Oosten. In West-Europa is het aantal rampenstudies over niet-westerse allochtone groepen (zoals Turkse of Noord-Afrikaanse arbeidsmigranten of migranten uit de voormalige West-Europese koloniën) beperkt.

In deze dissertatie staan de psychosociale gevolgen voor getroffen etnische minderheden van de Vuurwerkramp te Enschede centraal. In de dissertatie wordt gebruikgemaakt van drie methoden van onderzoek: een vergelijkend vragenlijstonderzoek, een kwalitatief onderzoek en een huisartsenmonitor. In het hier gepresenteerde vragenlijstonderzoek zijn diverse vragenlijsten, zowel over fysieke als over psychosociale kwesties, onder allochtone en autochtone getroffenen van de Vuurwerkramp verspreid, zowel drie weken als achttien maanden als vier jaar na de ramp. Daarbij is bij de tweede en derde meting gebruikgemaakt van niet-getroffen vergelijkingsgroepen. Drie jaar na de ramp is een kwalitatief onderzoek uitgevoerd bestaande uit interviews met Turks-Nederlandse getroffenen. Tot slot zijn gegevens uit de huisartsenmonitor gebruikt: dit zijn de rapportages van de huisartsbezoeken van de getroffenen.

In het vergelijkend onderzoek van Hoofdstuk 2 staat de vraag centraal of er inderdaad verschillen zijn in psychosociale gevolgen van een ramp tussen allochtone en autochtone Nederlanders.

Hoofdstuk 3 beschrijft een kwalitatief onderzoek onder een groep Turks-Nederlandse getroffenen. De meeste studies met betrekking tot psychosociale problemen na rampen zijn kwantitatieve studies. Kwantitatieve studies geven een duidelijk beeld van de gezondheidstoestand van slachtoffers van een ramp. Dit kwalitatieve onderzoek heeft een fenomenologisch perspectief over de ervaringen van de getroffenen van Turkse komaf. Wat voor problemen ervaren deze getroffen immigranten uit een niet-westerse cultuur na een ramp? Zijn deze ervaringen vergelijkbaar met de westerse concepten die worden gebruikt in kwantitatief onderzoek?

In de hoofdstukken 4 en 5 ligt de focus op de situatie van de immigranten na een ramp. Zowel het sociale steunsysteem vier jaar na de ramp als acculturatie met de Nederlandse samenleving achttien maanden na de ramp werden onderzocht. Zijn er verschillen waar te nemen in de ervaren sociale steun tussen allochtone en autochtone getroffenen? En zijn er verschillen te ontdekken in acculturatie tussen getroffen en niet getroffen allochtonen?

Hoofdstuk 6 gaat over de correspondentie tussen aanhoudende zelf gerapporteerde posttraumatische problemen en de verslagen van de huisartsen van de getroffenen. Komen de resultaten wat betreft psychische klachten uit de vragenlijsten overeen met hetgeen de huisarts rapporteert?

Gepresenteerde studies: Hoofdstuk 2 tot en met 6

Zijn er verschillen in posttraumatische problemen tussen etnische groepen?
In een steekproef onder bewoners van de getroffen wijk in Enschede onderzochten we of er verschillen waren tussen een groep allochtone getroffenen en een (op rampvariabelen gematchte) groep autochtone getroffenen vier jaar na de ramp. Om eventuele antwoordtendenties van de vragenlijsten te voorkomen, zijn de resultaten van de allochtone en autochtone getroffenen niet rechtstreeks met elkaar vergeleken. Wellicht vullen autochtone Nederlanders de vragenlijsten anders in dan etnische minderheden. Er is een vergelijking binnen de etnische groepen gemaakt en de verschillen zijn met elkaar vergeleken. Zo zijn de verschillen tussen de allochtone getroffenen- en vergelijkingsgroep vergeleken met de verschillen tussen autochtone getroffenen- en de vergelijkingsgroep.

De psychosociale impact van de ramp bleek groter voor de getroffen allochtone groep dan voor de getroffen autochtone groep. Deze analyse is ook

met een hogere cut-offscore van de vragenlijsten uitgevoerd (indicatief voor een stoornis). Ook hier zijn (hoewel iets minder uitgesproken) dezelfde uitkomsten te zien. Ook controle op contact met de GGZ of op financiële problemen resulteerde in dezelfde tendenties. De Vuurwerkramp in Enschede had een grotere impact op de betrokken etnische minderheden dan op de etnische meerderheid.

De psychosociale weerslag van de vuurwerkramp Enschede: het verhaal van de Turks-Nederlandse getroffene

In de door de vuurwerkramp in Enschede getroffen wijk woonden veel Turks-Nederlandse migranten. In deze studie, gebaseerd op kwalitatief onderzoek, staan de klachten en problemen van deze groep centraal. Veel genoemde problemen zijn woede, schaamte, angst, depressieve gevoelens en slaapstoornissen. Volgens de getroffenen zijn deze klachten niet alleen rechtstreeks het gevolg van hun ervaringen tijdens de ramp, maar ook van de nasleep. Ze schrijven deze problemen toe aan zowel het verlies van hun huis en emotioneel belangrijke eigendommen als aan het verblijf in een vervangende woning, financiële problemen en de slechte afhandeling daarvan door de overheid. Het welhaast exclusief toeschrijven van klachten aan de ramp en de afhandeling ervan is te zien als een vorm van externe attributie: de oorzaken worden buiten de persoon zelf gelegd. Daarbij zijn familieverhoudingen onder druk komen te staan, onder meer door tijdelijk verblijf bij familie kort na de ramp en door de zorg voor getroffen familieleden. Door de omvang van deze ramp is het fragiele evenwicht, waarin veel (eerste- en tweedegeneratie-)migranten samen met hun familie leven, aan het wankelen gebracht. Een laatste opvallende bevinding is het relatief geringe aantal verwijzingen naar lichamelijke klachten door de getroffenen. Dit betekent niet dat deze er niet zijn, maar dat de psychische problemen meer op de voorgrond waren. Het beeld van de "somatiserende" migrant werd door deze studie niet bevestigd.

Gebrek aan ervaren sociale steun vier jaar na een ramp: vergelijkende studie tussen allochtone en autochtone getroffenen

In een steekproef van getroffenen van de Vuurwerkramp in Enschede blijkt dat vier jaar na de ramp allochtone getroffenen minder emotionele steun ervaren te ontvangen dan autochtone getroffenen. Hoewel andere studies dezelfde patronen bij door ramp getroffen etnische minderheden laten zien, is het onduidelijk in hoeverre deze verschillen in ervaren steun kunnen worden toegeschreven aan een ramp. Hangt het mogelijk gebrek aan ervaren steun samen met het hebben van meer psychische problemen na de ramp, of was er misschien voor de ramp al een gebrek aan sociale steun?

Deze studie onderzocht het verschil in het gebrek aan sociale steun tussen allochtone en autochtone getroffenen en hun vergelijkingsgroepen. Daarnaast werd ervaren sociale steun onderzocht bij groepen met en zonder een posttraumatische stressstoornis (PTSS). De ervaren sociale steun en psychische klachten werden gemeten bij allochtone en autochtone Nederlanders, zowel onder de getroffenen als bij hun vergelijkingsgroep vier jaar na de ramp. PTSS is gemeten bij de getroffen groepen.

De eerste opvallende uitkomst betrof het resultaat op de vraag: "Heeft u in ieder geval een of meer persoon met wie u uw (emotionele) problemen kunt delen?"; er was namelijk een significant verschil tussen de allochtone en autochtone getroffenen die met een of meer mensen hun emotionele problemen in het algemeen of met betrekking tot de ramp konden delen en zij die dat niet konden. Slechts 6% van de autochtone getroffenen had niemand om hun emotionele problemen mee te delen, versus bijna een derde van de allochtone getroffenen.

Verder laat deze studie zien dat allochtone getroffenen vaker verschillende vormen van sociale steun misten in vergelijking met de autochtone getroffenen. Met een vragenlijst zijn zes vormen van ervaren gebrek aan sociale steun gemeten: o.a. gebrek aan dagelijkse emotionele interacties, gebrek aan instrumentele interacties en waarderingssteun. Opmerkelijk genoeg waren er geen verschillen in ervaren steun tussen de allochtone getroffenen en hun vergelijkingsgroep. Binnen de groep getroffenen met PTSS waren er weinig verschillen tussen allochtoon en autochtoon. Op slechts twee van de zes manieren van ervaren steun verschilden allochtone en autochtone getroffenen met PTSS van elkaar. In de groep zonder PTSS was echter wel een verschil te zien.

De resultaten van deze studie laten duidelijk zien dat de verschillen in ervaren steun tussen allochtonen en autochtone getroffenen niet zozeer een gevolg van de ramp zijn, maar in ruime mate aanwezig waren vóór de ramp.

Acculturatie en psychische problemen achttien maanden na een ramp: een vergelijkende studie tussen allochtone getroffenen en een niet-getroffen vergelijkingsgroep

In een steekproef van allochtone getroffenen en hun niet-getroffen vergelijkingsgroep is bestudeerd in hoeverre een verband bestaat tussen de mate van acculturatie in de Nederlandse samenleving en psychische problemen. Studies laten zien dat er inderdaad een verband kan zijn tussen de mate van acculturatie en psychische problemen, maar in hoeverre dat na een ramp geldt, is vooralsnog onbekend. Uit deze studie bleek dat in de getroffen groep normen en waarden van de oorspronkelijke cultuur en beperkte praktische

vaardigheden voor het leven in de nieuwe maatschappij samenhingen met specifieke posttraumatische symptomen, angst, depressie, vijandigheid en somatische problemen. In de niet-getroffen vergelijkingsgroep werden deze associaties niet gevonden. Uitkomsten op de acculturatielijst kunnen wellicht beïnvloed zijn door de ervaring van de ramp. Opvallend is echter dat het niveau van acculturatie niet significant verschilt tussen beide groepen, in tegenstelling tot de mate van psychische problemen. De allochtone getroffen groep had meer psychische problemen dan haar vergelijkingsgroep.

Het is niet onlogisch dat het gebrek aan vaardigheden in de nieuwe samenleving samenhangt met ervaren psychische problemen na een ramp. Bij de Vuurwerkramp, die veel materiële schade veroorzaakte, moest naderhand veel worden geregeld. Hierbij komt een goede beheersing van de Nederlandse taal etc. goed van pas.

Wat betreft beleid voor nazorg na een ramp is het belangrijk dat het verhogen van deze vaardigheden een verbetering zou kunnen betekenen. Met het verhogen van deze vaardigheden kunnen additionele stressoren die het regelen van veel praktische zaken vermoeilijken, worden verlicht.

Correspondentie tussen zelf gerapporteerde psychische klachten van getroffenen en door de huisarts gerapporteerde psychische klachten

Deze studie werd uitgevoerd bij een steekproef uit de door de Vuurwerkramp getroffen slachtoffers, afkomstig uit twee longitudinale bronnen: het vragenlijstonderzoek en de huisartsenmonitor.

Er is weinig bekend over de correspondentie tussen door getroffenen zelf gerapporteerde psychische problemen en deze problemen gerapporteerd door hun huisarts na een bezoek. Het doel van deze studie is om deze correspondentie te analyseren en de factoren die samenhangen met de monitor van huisartsen te identificeren.

De deelnemers vulden twee tot drie weken én achttien maanden na de ramp een vragenlijst in en de verkregen gegevens werden gecombineerd met gegevens die in de huisartsenmonitor verzameld waren tot achttien maanden na de ramp. De correspondentie tussen de aanhoudende, zelf gerapporteerde problemen en de door de huisarts gemelde psychische problemen werd geanalyseerd.

Ongeveer twee derde van de aanhoudende, zelf gerapporteerde posttraumatische klachten achttien maanden na de ramp werd door de huisarts van de getroffenen herkend. Dit gold voor 72,6% van de algemene psychische problemen en in minder dan 20% van de gevallen gold dit voor specifieke psychische problemen, zoals depressie en symptomen van angst of slaapstoornissen. Er is een grote overeenkomst tussen de door de huisarts

gerapporteerde klachten en zelf gerapporteerde posttraumatische stress en algemene psychische klachten van de getroffenen. De correspondentie neemt af bij meer specifieke psychologische problemen. Opvallend voor deze dissertatie is dat er geen significante etnische verschillen zijn. De huisarts herkent in even grote mate psychische klachten bij allochtone als bij autochtone getroffenen. Ook voor allochtone getroffenen is de huisarts een goede poortwachter voor de psychische gezondheid na een ramp.

Hoofdstuk 7 Discussie

Wat is de verklaring voor de grotere impact van een ramp voor allochtone getroffenen? Er kan geen pasklaar antwoord gevonden worden in de gepresenteerde studies. Toch kan er een verklaring gevonden worden met behulp van de *condición migrante:* de mogelijke nadelige situatie van de individuele etnische minderheid of migranten voor de ramp, in de kwetsbare context van hun sociale omgeving die na de ramp extra onder druk kwam te staan, in combinatie met de dynamiek van de gemeenschap na een ramp. Met behulp van de Conservation of Resource (COR) Theorie van Hobfoll kan de negatieve spiraal waarin allochtone getroffenen terecht kunnen komen worden uitgelegd.

Het individu in haar sociale context

Uit de interviews kwam naar voren dat de problemen van de getroffenen direct te herleiden waren tot de ramp. Andere studies binnen Enschede hebben laten zien dat bijvoorbeeld de Turkse getroffenen, maar ook de allochtone vergelijkingsgroep al voor de ramp meer problemen hadden. Deze attributie van problemen aan de ramp is in overeenstemming met de waarneming dat mensen uit niet-westerse culturen meer geneigd zijn om geëxternaliseerde verklaringen voor psychische klachten te vinden. Het belang van deze externe attributie ligt er mogelijk in dat ze geen gezichtsverlies lijden en/of op deze manier verlies van sociale status of stigmatisering kunnen voorkomen. Door te wijzen op de ramp als een oorzaak van hun problemen is er een "goede reden" om ziek te worden. Ze zijn daarom "niet gek", maar eerder in de problemen geraakt als gevolg van externe omstandigheden. Die kunnen tot gevolg hebben dat zij de controle over hun eigen leven verliezen.

De mate van psychosociale problemen en het gebruik van de ramp als een excuus voor de psychische problemen kan verklaard worden door het concept van posttraumatische verbittering. Deze verbittering kan worden veroorzaakt door een combinatie van te hoge verwachtingen van de nazorg bij rampen en de *appraisal* van de ramp. Deze appraisal is een proces dat te maken heeft met

de subjectieve waarneming, interpretatie en evaluatie van de ramp. Terwijl de ramp na de explosie en het succesvol onderbrengen van alle getroffenen voor hulpverleners, ambtenaren of beleidsmakers voorbij is, kunnen getroffenen zelf dit heel anders ervaren. Doordat ze geen erkenning krijgen voor *hun* ramp, kunnen gevoelens van verbittering wellicht worden verhoogd.

Zowel de externe *locus of control* als de appraisal van de getroffenen dat alle problemen aan de ramp te wijten zijn, kan worden verklaard door de meer collectivistische culturen van Turkse en Noord-Afrikaanse migranten. Zo is het gebrek aan sociale steun dat allochtone getroffenen menen te ervaren te verklaren door de collectivistische en familiegerichte culturen: zij zijn meer gericht op groepen, context en relaties, terwijl de individuele gevoelens en vrijheid van meningsuiting relatief minder belangrijk zijn. Getroffenen hoeven de negatieve gevolgen voor hun dagelijks leven van de ramp niet toe te schrijven aan hun omgeving.

Het gebrek aan sociale steun voor de ramp en de verwachtingen waaraan niet is voldaan na de ramp, worden vertaald in een algemeen gevoel van verbittering. De externe locus of control van aan de ramp gerelateerde problemen, die resulteren in een volledig gebrek aan controle in iemands leven, kan worden verklaard door het Conservation of Resource (COR) Theorie van Hobfoll. Hobfoll beschrijft dat een cyclus van verlies bij een grotere impact makkelijker versneld kan worden. De situatie van getroffen migranten — die al eerder hebben moeten verhuizen, en daarmee hun cultuur, gewoontes en sociale steun systemen hebben moeten achterlaten —, zal wellicht na een ramp, met het verlies van een huis en concrete herinneringen aan hun land van herkomst, verslechteren.

Methodologische overwegingen

Onderzoeken vlak na een ramp worden meestal niet uitgevoerd door cross-culturele psychologen. Toch waren in het kwantitatieve gezondheidsonderzoek zowel psychologische vragenlijsten aanwezig als vragenlijsten over de fysieke gezondheid. De vragenlijsten waren vertaald en veelal eerder cross-cultureel gevalideerd. Daarnaast vormde het mixed-method design met kwalitatieve methoden, de huisartsenmonitor, het kwalitatieve interviewonderzoek en de vergelijkingsgroepen een optimaal design voor cross-cultureel onderzoek. Helaas waren er geen klinische interviews, die zouden de triangulatie optimaliseren.

Een tekortkoming in het kwalitatieve onderzoek is het gebrek aan vergelijkingsgroepen. Er is alleen onderzoek gedaan onder Turkse getroffenen (de grootste allochtone groep getroffenen in Enschede) en er kon geen

vergelijking gemaakt worden met andere allochtone groepen. Verder is er geen gebruikgemaakt van een autochtone groep getroffenen. Wellicht waren de resultaten onder de getroffen autochtonen niet zo verschillend als die onder de getroffen Turkse Nederlanders.

Een andere tekortkoming was de respons onder allochtone getroffenen. De respons tussen de eerste, tweede en derde meting verschilde nogal. De allochtone groep werd daarmee dusdanig klein dat er geen onderscheid kon worden gemaakt tussen de verschillende etniciteiten in de allochtone getroffen groep.

Ten slotte

Hoewel er na de ramp in Enschede veel programma's waren in het kader van de nazorg en ongeveer de helft van de allochtone getroffenen in de GGZ terechtgekomen is, is de impact voor allochtone getroffenen toch groter vergeleken met die voor autochtone getroffenen. De wederopbouw en de financiële compensatie kunnen de nasleep van de ramp verminderen, en de getroffen wijk in Enschede is weer opgebouwd tot een mooie nieuwe buurt, waar de getroffenen weer konden wonen. Is dit niet ten goede gekomen aan de allochtone getroffenen? Gedeeltelijk wel, maar een aanzienlijke groep heeft vier jaar na de ramp nog steeds problemen. Hoewel we dit niet specifiek onderzocht hebben, zijn deze mogelijk te zoeken in de collectieve context. De interventies zijn te weinig gericht geweest op de individuele problemen in de collectieve context. De algemene boodschap van nazorgprogramma's was gericht op het gevoel van zelfcontrole, maar ten aanzien van de meer collectivistische culturen met een zeer sterke onderlinge afhankelijkheid zou de boodschap wellicht meer in het collectief gebracht moeten worden; "Alleen als je voor jezelf zorgt, kun je voor je gezin zorgen."

De afgelopen jaren is de psychosociale nazorg vooral op het individu gericht geweest. Interventies na een ramp worden vooral geformuleerd in individuele posttraumatische klachten en problemen. Voor het behandelen van psychische klachten of stoornissen bij allochtone getroffenen is inderdaad een cultureel-competente GGZ nodig, die laagdrempelig is voor allochtone getroffenen.

Toch is het ook belangrijk de nazorg in bredere zin te zien. Het zo veel mogelijk voorkomen van additionele stressoren van een ramp en de nasleep, erkenning van wat er gebeurd is, het faciliteren van lotgenotencontact en het herstel van de getroffen gemeenschap mogen niet vergeten worden.

Chapter 9

Summary in English

Chapter 1 Introduction

Experiencing a disaster (a life-threatening event, an injury, or even the death of loved ones) may profoundly affect the psychological well-being. The impact of the disaster may last a long time, with ongoing adversities such as severe physical problems, some of which may be long-lasting or even permanent, property damage, relocation and possible financial losses.

In recent years, more and more studies have been published that indicate several psychosocial consequences of a disaster. In this growing body of literature, some of the studies specifically address the effects for non-Western populations: ethnic minorities in Western societies and populations in non-Western countries. For a long period of time it has been assumed that ethnic minorities are a vulnerable group that are particularly vulnerable to psychological problems after a disaster. However, it appears this is not always true. A review of studies of ethnic minorities affected by a disaster in Western countries as presented in the introduction of this thesis paints a different picture. A number of studies show significant differences between ethnic groups. The studies that show no significant differences between ethnic groups were sometimes adjusted for demographics, sometimes adjusted for the presence and exposure to the disaster, or adjusted for both. Most of these disaster studies were conducted in the United States, recently more often in China, to a lesser extent in Latin America, India and the Middle East. In Western Europe, the number of disaster studies of non-Western ethnic minority groups (such as Turkish or North African migrants or migrants from the former Western European colonies) is limited.

A central theme of this thesis is the psychosocial consequences that the Enschede Firework disaster had for the ethnic minorities affected. In this thesis, three methods are used: comparative survey research, a qualitative study and a GP monitor. The research by means of questionnaires presented here, with various physical and psychosocial questionnaires among migrant and Dutch native victims of the Firework disaster, was conducted 2–3 weeks, 18 months and 4 years, respectively, after the disaster. In addition, the second and third measurements used non-affected comparative groups. Three years after the disaster, a qualitative survey consisting of interviews with Turkish-Dutch victims was conducted. Finally, data from a GP monitor were used: these are the reports of the visits of victims to their GPs.

The comparative study of Chapter 2 focuses on the question of whether there are indeed differences in psychosocial consequences of disasters between immigrant and Dutch native victims. Chapter 3 describes a qualitative study

among a group of Turkish-Dutch victims. Most studies related to psychosocial problems after disasters are quantitative studies. These studies give a clear picture of the health status of disaster victims. This qualitative study has a phenomenological perspective on the experiences of the victims of Turkish origin. What kind of problems do the immigrants from a non-Western cultural background experience after they have been through a disaster? Are these experiences similar to the Western concepts that are used in quantitative research?

Chapters 4 and 5 focus on the situation of immigrants after a disaster. Both the social support system 4 years after the disaster and the immigrants' level of acculturation with Dutch society 18 months after the disater, are examined. Are there differences in perceived social support between immigrant and native Dutch victims? And are there any differences in acculturation between affected and non-affected immigrants?

Chapter 6 deals with the correspondence between persistent self-reported post-traumatic problems and the reports of the victims' doctors. Do the results from questionnaires correspond, in terms of psychological symptoms, with what the doctors report?

Presented studies: Chapter 2 to 6

Differences in post-traumatic problems between ethnic groups

In a sample of residents of the affected area in Enschede, we investigated whether there were differences between a group of immigrant victims and a (disaster-matched variables) affected indigenous group 4 years after the disaster. In order to pre-empt any response tendencies of the questionnaires, the results of the immigrant and indigenous victims are not directly compared. Perhaps native Dutch people fill in questionnaires differently than do ethnic minorities. A comparison was made within the two ethnic groups. Then the differences between the immigrant victims and a comparison group were compared to the differences between native Dutch victims and the comparison group.

The psychosocial impact of the disaster appeared to be greater for the affected immigrant group than for the affected indigenous group. We also conducted these analyses with a higher cut-off score (indicative of a disorder). Here, similar results were found (although they were slightly less pronounced). When we controlled for contacts with mental health care or any existing financial difficulties, the same tendencies surfaced. The Enschede Fireworks Disaster had a major impact on the ethnic minorities compared to the ethnic majority.

The psychosocial impact of the Enschede Fireworks disaster: the story of the Turkish-Dutch victims

Many Turkish-Dutch immigrants lived in the area affected by the disaster. In this study, based on qualitative research, the problems of this group play a central role. Many problems that were mentioned are anger, shame, anxiety, feelings of depression and sleep disorders. According to the victims, these symptoms are not only the direct result of their experiences during the disaster, but also of the aftermath of the disaster. They attribute these problems to both the loss of their homes and belongings that were emotionally important for them, having to relocate to a different substitute home, financial problems and poor handling of problems by the authorities. The almost exclusive attributing of symptoms to the disaster and its aftermath can be seen as a form of external attribution: the causes are laid outside the person. In addition, family relationships came under pressure, e.g. because of the temporary stay with relatives shortly after the disaster and the need to take care of other affected relatives. Due to the magnitude of the impact of this disaster, the fragile equilibrium, which many (first- and second-generation) immigrants with their family lived in, was upset. A final striking finding is that victims referred in relatively small numbers to physical complaints. This does not mean that physical problems are not present but, rather, that the psychological problems were more prominent. The picture of the "somatic" migrant was not confirmed by this study.

Lack of social support experienced 4 years after a disaster: comparative study between immigrant and native victims

A sample of victims of the Enschede Fireworks Disaster shows that 4 years after the disaster immigrant victims experienced less emotional support than did Dutch native victims. Although other studies show similar patterns, it is often unclear to what extent these differences in perceived support can be attributed to a disaster. Is the possible lack of experienced support connected to the victims' having more psychological problems after the disaster or was there already a lack of social support before the disaster?

This study investigates the difference in the experienced lack of social support between immigrant and native Dutch victims and their comparison groups. In addition, we studied perceived social support in groups with and without post-traumatic stress disorder (PTSD). The perceived social support and psychological symptoms were measured in immigrant and native Dutch people, both among the victims and their comparison group 4 years after the disaster. PTSD was measured in the affected groups.

The first striking result concerned the question: "Do you have at least one or more people with whom you can share your (emotional) problems?" Only 6% of the indigenous victims had no one to share their emotional problems with versus nearly a third of immigrant victims.

Furthermore, this study shows that immigrant victims more often missed various forms of social support when compared to the native Dutch victims. In this study, 6 types of perceived lack of social support were measured: lack of daily emotional interactions, lack of instrumental interactions, etc. Remarkably, there were no differences in perceived support between the immigrant victims and their comparison group. Within the group of those suffering from PTSD, few differences were found between immigrants and natives. Immigrant and native victims with PTSD only differed as to 2 of the 6 types of perceived social support. However, in the group without PTSD the difference was indeed noticeable.

The results of this study clearly show that the differences in perceived support between immigrant and Dutch native victims were not so much a result of the disaster but had already been present to a considerable extent before the disaster.

Acculturation and psychological problems 18 months after a disaster: a comparative study of immigrant victims and a comparison group of non-affected persons

Studies show that there is a relationship between acculturation and psychological problems but it is as-yet unknown to what extent this is also true for the aftermath of a disaster. In a sample of immigrant victims and their non-affected comparison group the extent to which there is a correlation between acculturation with Dutch society and psychological problems was studied. This study showed that in the group affected, the norms and values of the original culture and limited practical skills in the new society were connected with specific post-traumatic symptoms such as anxiety, depression, hostility, and somatic problems. In the unaffected comparison group, these associations were not found. Outcomes on the acculturation scale could perhaps have been influenced by having experienced the disaster. However, the level of acculturation was not significantly different for the two groups, though the psychological problems were. The affected immigrant group had more psychological problems than did its comparison group.

It is not surprising that the scarcity of skills with which to cope with the demands of a new society were linked with the experiencing of psychological problems after a disaster. Certainly after the Fireworks Disaster, which resulted in a great deal of material damage, much had to be arranged. The ability to manage daily tasks within the host society, e.g. speaking the Dutch language, are, then, very useful.

Regarding disaster aftercare policies it is important to improve these skills. Improving these skills may reduce additional stressors that may have a negative impact on many practical matters.

Correspondence between victims' self-reported psychological problems and psychological symptoms reported by GPs

This study was conducted with a sample of victims of the Enschede Fireworks Disaster from two longitudinal sources: the questionnaire survey and the GP monitor.

Little is known about the correspondence between psychological problems reported by the victims themselves and these problems reported by their GPs after a visit. The purpose of this study is to analyze this correspondence and to identify the factors connected with the GP monitor.

The participants completed a questionnaire 2–3 weeks, and 18 months after the disaster. These data were combined with data collected in the GP monitor 18 months after the disaster. The correspondence was analyzed between the persistent self-reported problems and the psychological problems reported by GPs.

Approximately two thirds of the persistent, self-reported post-traumatic complaints 18 months after the disaster were recognized by the victim's GP. This was also the case for 72.6% of the general mental health problems, and in less than 20% of specific psychological problems such as depression and symptoms of anxiety or sleep disorders. Remarkable for this thesis is that there are no significant ethnic differences. The GP recognises mental health problems among immigrant or Dutch native victims to the same extent. In other words, the GP is a good gatekeeper for mental health problems after a disaster for immigrant and non-immigrant victims.

Chapter 7 Discussion

How do we account for the impact of a disaster for immigrant victims? There is no easy answer to be found in the studies presented. We may find answers in the concept of the *condición migrante*: the possible disadvantageous situation the individual ethnic minority or immigrants lived in before the disaster, in the fragile context of their social environment that came under extra pressure after the disaster, in combination with the dynamics of the community after a disaster. The negative spiral ethnic minorities may experience could be explained by Hobfoll's Conservation of Resource (COR) Theory.

The individual in his social context

The interviews showed that the problems of those affected were attributed to the disaster. Other studies conducted in Enschede have shown that other immigrant victims as well as the immigrant comparison group had more problems, before the disaster as well. This attribution of problems to the disaster is consistent with the observation that people from non-Western cultures are more likely to have externalised explanations for psychological symptoms. The importance of this external attribution may be explained through a wish to prevent loss of face, of social status or stigmatisation. This may play a prominent part in collectivistic cultures. In these cultures the individual is (so to speak) ancillary to the collective and loss of face is consequently much more apparent. By pointing to the disaster as a cause for their problems, there is a "good reason" to be ill. They are therefore "not crazy" but rather got into trouble as a result of external circumstances.

The extent of mental health disorders and the use of the disaster as an excuse for mental health problems could be explained by the concept of post-traumatic embitterment. This embitterment might be caused by high expectations fostered about the disaster care, combined with the appraisal of the disaster. Appraisal is a process resulting from the subjective perception, interpretation and evaluation of the event. Researchers, policy makers and mental health professionals may see the Enschede disaster as a single traumatic event, that is now over. The aftermath of the Enschede disaster seen against the background of the condición migrante may, however, be just as or even more stressful for the affected individuals than the disaster itself.

Both the external locus of control and the appraisal of the affected victims that all problems were due to the disaster may be explained through the more collectivistic cultures Turkish and North African ethnic minorities live in. In explaining the results of our studies, we often refer to the individualism-collectivism dichotomy. E.g. we linked the perceived lack of social support among the ethnic minorities to more collectivistic and family-focused cultures: a focus on groups, contexts and relationships whereby individual feelings and their free expression could be relatively less important. In attributing the negative impact to their daily lives to the disaster, those affected do not have to blame their possibly not so supportive community.

The dynamics, described here, of a lack of social support before the disaster, the expectations that were not fulfilled after the disaster may be translated into general feelings of embitterment after the disaster. The external locus of

control of disaster-related problems which result in someone's complete lack of control over his life, can be explained by through Conservation of Resource (COR) Theory of Hobfoll. Hobfoll describes how a cycle of loss will accelerate more easily as it has greater impact. Combined with the history of cultural bereavement of immigrants, their possible up-rootedness, the experienced disaster may eventually cause a deterioration of their situation.

Methodological considerations

Health studies are not usually carried out by cross-cultural psychologists in cases of disaster in Western Europe. In the Enschede Disaster Study the main focus of the study was not primarily epidemiological: the questionnaire studies contained several psychological and socially-validated questionnaires. Furthermore, our instruments had already been validated in different studies with ethnic minority groups. Furthermore, the use of different methods of research (GP monitor/questionnaires/qualitative research) is very suitable for research among ethnic minorities. Unfortunately, there were no clinical interviews: this would have optimised the triangulation.

A shortcoming in the qualitative research is the lack of comparison groups. There is research among Turkish victims (the largest group of immigrants affected in Enschede) and there was no comparison with other immigrant groups. Furthermore, no affected Dutch native group was used. Perhaps the results for the affected natives are not so different from those for affected Dutch Turks.

Another shortcoming was the response among immigrant victims. The response between the first, second and third measurements differed. Furthermore, no distinction could be made between different ethnicities in the affected immigrant group, due to the small numbers.

To conclude

After the disaster in Enschede, many programmes were launched concerning aftercare and more than half of the affected ethnic minority groups applied for mental health care. Yet the impact for immigrant victims was still larger when compared to Dutch native victims. Reconstruction and financial compensation may have reduced the problems in the aftermath of the disaster, and the affected area in Enschede has been rebuilt into a beautiful new neighbourhood, where those affected could live again. Were these reconstruction and financial compensation not beneficial for the affected immigrants? Partially they were. However, 4 years after the disaster, a significant number of people still had problems. Although we have not specifically studied this, the interventions may

not have focused enough on individual problems in the collective context. The overall message of aftercare programs focused on self-control. However, with regard to the more collectivist cultures with strong interdependence, the general message of disaster programmes should be focused more on the sense of self-control with respect to the interdependent structures people live in; "Only when you take care of yourself, can you take care of your family!"

Mental health care after disasters is nowadays increasingly focused on the individual. Interventions after a crisis or disaster are often formulated in terms of the individual post-traumatic problems. For the treatment of post-disaster mental health problems or disorders these mental health services have to be culturally competent and easily accessible for ethnic minority groups. However, reducing additional stressors of a disaster and its aftermath, facilitating opportunities for victims to get together and establish mutual contacts and recovery on community level, dealing with embitterment through recognition of the experience of the disaster and its aftermath are all elements that must not be forgotten.

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About the author

Annelieke N. Drogendijk (1971) studied clinical psychology at Utrecht University. Her masters thesis concerned traumatised refugees in a psychiatric ward. After graduation she worked as a researcher in the Institute for Psychotrauma for almost 11 years. She conducted (both quantitative as well as qualitative) studies with psychotrauma, cultural diversity, and occupational critical incidents as central objectives. Next to the research projects, Annelieke was manager for EU funded projects. The general aims of these projects were the improvement of the response to critical incidents and disasters and to deal with the subsequent public health and mental health consequences.

Together with prof.dr. Rolf Kleber and dr. Jeroen Knipscheer, Annelieke developed a training for laymen counselors in a multi-cultural (occupational) setting. Furthermore, together with drs. Esther Tossaint and drs. Juul Gouweloos, she developed a training Psychosocial Aspects of Chemical Incident Emergencies for Public Health managers.

In 2008, the Institute for Psychotrauma became partner in Arq Psychotrauma Expert Group. In 2011 Annelieke started as a policy advisor at Impact (partner in Arq Psychotrauma Expert Group). She was liaison with the National Institute for Public Health concerning public incidents, crises, and disasters. Since August 2012 Annelieke is Director at Impact Knowledge and advice centre for psychosocial care concerning critical incidents. Annelieke Drogendijk lives in Wageningen, The Netherlands with Jacco Löwer and they have one daughter, Julia.

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