VRIJE UNIVERSITEIT

SOME YEARS OF COMMUNITIES THAT CARE
Learning from a social experiment

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad Doctor aan
de Vrije Universiteit Amsterdam,
op gezag van de rector magnificus
prof.dr. L.M. Bouter,
in het openbaar te verdedigen
ten overstaan van de promotiecommissie
van de Faculteit der Psychologie en Pedagogiek
op woensdag 19 december 2012 om 11.45 uur
in de aula van de universiteit,
De Boelelaan 1105

door

Hermannus Bernardus Jonkman

geboren te Hengelo (O)

promotoren:	prof.dr. W.J.M.J. Cuijpers prof.dr. J.C.J. Boutellier

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Harrie Jonkman

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Prof. dr. T.V.M. Pels

Prof. dr. T.A. van Yperen

Paranimfen: Rosa Jonkman
Sal Jonkman

The Hill

I have come this far on my own legs,
missing the bus, missing taxis,
climbing always. One foot in front of the other,
that is the way I do it.

It does not bother me, the way the hill goes on.
Grass beside the road, a tree rattling
its black leaves. So what?
The longer I walk, the farther I am from everything.

One foot in front of the other. The hours pass.
One foot in front of the other. The years pass.
The colors of arrival fade.
That is the way I do it.

Mark Sands

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Part III: IMPACT

1. INTRODUCTION

If we begin with certainties, we will end in doubt,
but if we begin with doubts and bear them patiently,
we may end in certainty'.

Francis Bacon

THE PROBLEM

Humans are social, their lives are lived interdependently and social influences are expressed through a network of shared relationships. Through social discourse and action, as well as interactions and relations with others, an individual person becomes human through social experiences (Habermas, 1981; Vygotsky, 1978; Mead, 1934; Dewey, 1907). Opportunities which cross their paths, as well as aspirations and ambitions for the future are all defined by the social environments in which people live and work throughout their life cycle, which in effect, are composed of interactions with inspirational others who provide them with direction (Damon, 2008; Damon, 1997; Damon, 1990). Nonetheless, humans also require protection during specific moments throughout their lifetime from different threats. In order to live a fruitful and optimal life, resistant to the risk of disease, development problems and an early death, protection is highly necessary. Like problems at birth (bad conditions during feutal age, an early birth or neurological problems at birth), lifestyle problems during adulthood (drinking, eating, stress as main problems), and chronic problems during life's final phase (dementia and other neurological problems), problem behaviours of youngsters (health risk behaviours) can have a strong negative influence on the development, health and wellbeing of the individual not only in their current phase of life, but also in the future. Problems that manifest during (early) adolescence affect later stages of development and also their direct network and environment, the latter of which causes concern in both public and political arenas as such problems can create large costs for society.

The phase of adolescence, which in this study includes youths between the ages of 12-18, is defined by opportunity and risk. In 2007, there were 1.204.964 youngsters between the ages of twelve and eighteen living in the Netherlands, which is 7,4% of the Dutch population. Between childhood and adulthood, adolescents develop their cognitive and social competencies, social identity and selfhood, which will direct and steer their lives later on in life. At the same time, however, it is during this phase of adolescence in which different emotional, mental and behavioural problems may arise, influence and endanger their health and social development.

In 2007, 79% of Dutch youngsters between the ages of 12 and 18 had ever drank alcohol (beer, spirits, wine), which is less than five years earlier when 85% of the youngsters had this experience. Since the end of the eighties, this percentage has fluctuated between 69 and 85%. In the same year (2007), around 51% of the

youngsters drank alcohol within the last month (between 45% and 58% in 1988-2007). There were hardly any differences between boys and girls. Since a few years, a decrease has been witnessed in terms of ever and monthly use, but this only applies to the younger group between the ages of 12 and 14 and not for the older group (15-18 year olds). 19% of the 12-14 year old drank five or more glasses on one occasion in the last month and in 2007, 57% amongst 15-18 year olds were binge drinkers (Trimbos Institute, 2010). From American research we know that 45% of the adults who began drinking at age 14 became dependent on alcohol at some point in their lifetime (Hingson et al., 2005).

Some of the adolescents already showed disruptive and rule breaking behaviour (antisocial behaviour) when they were children. Rule breaking behaviour can manifest itself as violence against others or delinquency. These types of children tend to have poor relations with peers and adults in their surroundings and they frequently come into contact with the police. They show a chronically high level of physical aggression, opposition or hyperactivity at an early age but also throughout adolescence. We know from other studies that there is a high degree of continuity in terms of antisocial behaviour between the phases of childhood, adolescence and, later on, adulthood (Tremblay, 1999). 7-10% of all males convey persistent antisocial behaviour throughout their whole life (Lier, 2010; Lier, 2002; Moffit & Caspi, 2002; Moffit, 1993). Nevertheless, there is also a group of youngsters who show antisocial behaviour during adolescence, which disappears when they enter adulthood. Both groups of antisocial youngsters will likely display other problem behaviours during adolescence. For example, delinquency often precedes drug use initiation in early adolescence (Hawkins et al., 2008; Hawkins et al., 2008; Junger-Tas, 2001). Violence, delinquency and anti-social behaviour of youngsters are important societal problems. It is estimated that 5-7% of the Dutch children show serious problems and are in need of professional help (Loeber et al., 2008). In the group of adolescents we see similar percentages (Junger-Tas et al., 2011; Junger-Tas et al., 2008; Farrington, 2003). Boys show more anti-social problems than girls. Migrants are overrepresented in the juvenile system and the institutions for delinquents.

the Netherlands, youth delinquency is a collective noun for different punishable acts by youngsters (official till 25 years). This not only includes violent acts, but also crimes against property, arson and vandalism. Although property crimes still account for the largest majority of delinquency, acts of violence increased in the Netherlands. Antisocial behaviour is an import target for prevention.

19% of the Dutch youngsters in secondary schools have smoked in the last month, where girls smoked just as much as boys. Smoking in the Netherlands is still one of the main causes of early death. In 2008, 19.300 people of 20 years and older died because of the direct causes of smoking. Smoking causes long cancer, COPD, Coronary heart diseases, stroke, heart attack and different kinds of cancer. 14% of all deaths are caused by smoking, and some 90.000 people from the age of 35 and up were hospitalized due to smoke related illnesses. That

number accounts for 7,5% of the total number of people who were hospitalized. The percentage of youngsters between 12 and 18 years of age, who ever smoked decreased from 55% in 1988 to 39% in 2007. Nearly one fifth of the youngsters said they smoked last month (19%). This percentage is more stable (between 30-19% since 1988) (Trimbos Institute, 2010). The use of soft drugs (hash and marihuana) of youngsters stabilizes the last years. When adolescents are 16 years old nearly one third has used soft drugs: More than 55% once or twice a month and 14% more than 10 times. A small number of youngsters use one or more hard drugs (like cocaine, amphetamine, ecstasy) (Laar, M. van; 2009; Vandenbroucke et al., 2011).

Depression is characterised by a change in mood over a long period of time, coincided by a loss of interest and pleasure (Smit, 2006). Incidences of depression among younger people increase when young people reach adolescence. International research shows that 5 percent of adolescents experience a clinical depression in a given year, and 20 % experience such an episode during adolescence (IOM, 2009; Angold & Costello, 2001). For girls, the chances of the depression are twice as high in comparison to boys. In the Netherlands the prevalence of depressive disorders are 0,4-8,3% of the adolescents between the ages of 12 and 18 (Trimbos Institute, 2010). Nonetheless, it is clear that the percentage of depressive problem behaviour is far higher.

In the last ten years, ideas about sex and sexual behaviour became more liberal in the Netherlands, which shed a new light on sexual related problem behaviour during adolescence. Youngsters not only have more sexual experiences, but they also take place at an earlier age. Youngsters between 12-14 years old are more at risk of being persuaded to engage in sexual behaviour, especially girls. On a regular basis, the media bombards youngsters with sexual images, innuendos as well as information. Sexual behaviour puts youngsters at risk of teen pregnancy, sexually transmitted diseases (like Sexual transmitted disease and HIV) and promiscuity sexual behaviour (De Graaf et al., 2005; Brugmans et al., 1995).

The early development phase of problem behaviour is important for future human development. We know, for example, that half of all lifetime cases of diagnosable mental illnesses begin at the age of 14 (Kessler et al., 2005). Problem behaviours are linked, in that a change in one type of problem behaviour may increase the development of another problem behaviour (IOM, 2009). For example, the more behavioural problems a youngster has, the more likely they will fail at school. This will, in effect decrease their chances of obtaining employment, which will increase their dependence on the social welfare system, and increase their chances of coming into contact with the juvenile system.

Rather than waiting until early alcohol consumption turns into alcohol dependence, early tobacco use causes cancer, and adolescent antisocial behaviour turns into serious violence and depression, problem behaviour should be prevented at an early age (Hawkins et al., 2008). They are important health gains. It is crucial that youngsters who transform from being children to young adults, successfully pass the phase of adolescence: 'Safe passage' (Dryfoos, 1998).

In the last twenty years, people have sought for more individually based than socially oriented answers in regards to youth problem behaviour. More people have shown that youth problems are individually oriented, indicated and are given one of their many different labels. In recent times, authority has become professionalized. Practical answers are being provided more and more by doctors, lawyers and therapists, in comparison to parents, teachers and other important adults. This at a time when more and more youngsters are required to function in specific contexts away from their family, school and neighbourhood.

Nowadays, we live in a society with a lot of opportunities and risks (Boutellier, 2010). For children who grow up in strong families, attend good schools and are socially supported and controlled by the communities that they live in, this is maybe less of a problem. However, societies, which are defined by endless possibilities and an abundance of unexpected and unfamiliar social networks, can pose problems for children and youngsters who grew up in more chaotic and unstructured situations, without networks of structured relationships and social capital. The chance for them to develop problem behaviours during this time period is far more likely. These problem behaviours may not only have a negative influence on their lives at present, but they may also cause problems during their adult life. Not all the adolescents are successful and these problems (one and often in tandem) are part of their life story. With help, support and 'nudges' from people in their surroundings and thoughtful preventive interventions at the right time and in the right place, their lives can be more successful (Thaler & Sunstein, 2009).

It is clear that the incidence and prevalence of these behaviours commence and/or increase significantly during this passing phase of adolescence, from childhood to adulthood, and can lead to life long health related problems, diseases and disorders. As a society we have the responsibility to help all the youngsters become independent and successful. Yet the big question remains: what can we do together and how should this be organized?

THEORY

The most crucial factor which determines human health and development is the social environment in which people live and work throughout their life course and how they cope with changing environments (Keating & Hertzman, 1999). Individual social competencies, family skills, school quality as well as community characteristics and resources are all important for the development of adolescents, as prevention science made clear in several studies (Weissberg & Kumpfer, 2003). Prevention science has emerged as an interdisciplinary science created by an integration of developmental science and longitudinal studies, social and community epidemiology and research of preventive and randomized trial (IOM, 2009; Mrazek & Haggerty, 1994; Coie et al., 1993; Kellam & Rebok, 1992). Prevention science can identify two different types of groups of predictors in terms of individuals and their social environments. One group identifies which factors increase the likelihood of problems (risk factors), whilst the other focuses on factors which moderate and mediate exposure to risk, which in effect will decrease the likelihood of problems (protective factors). Through a number of experimental studies, it was found that tested and effective prevention programs and policies could be developed, not only for individuals but also for families, schools and communities in order to support the social and healthy development of youngsters (Elliot, 1997; Sherman et al., 1996). In the Netherlands, some preventive interventions have also been developed and implemented during the last 15 years (see Chapter 3). These interventions aim to halt the development of problem behaviours and disorders, and prevent a full-blown manifestation of these behaviours and disorders and other associated outcomes. It is crucial that the intervention takes place at the right moment, in the right place and for the right reasons. Most preventive interventions are based on the idea that risk factors should be minimized and protective factors should be enhanced.

The aim of this thesis is to study the development of some of these problem behaviours during the phase of adolescence and the preventive possibilities available in the communities where the youngsters grow up and live over a longer period of time. Research questions have been derived from preventive and research activities that have been active in the last ten years in very diverse socio-cultural contexts, mainly in the Netherlands. From these activities, Communities that Care (a community based prevention program in which many of these preventive ideas since the 1994 IOM-report, are clustered together) played a central role.

Problem behaviours

Although different problem behaviours have been researched according to their own developmental patterns, there are similarities between these patterns of behaviour. Problem behaviours also tend to occur in tandem with one another (Dryfoos, 1998). Research focusing on how all of these problem behaviours are connected and interrelated has been done in the past, but rarely amongst youngsters in the Netherlands.

Using our own dataset, which consists of 17.961 youngsters and focused on more severe problem behaviours (see chapter X, Jonkman et al., 2012), we found that 6,2% of the Dutch youngsters scored on two or more of the eight indicators of antisocial behaviour, with nearly no differences between boys and girls. The study indicated that 10,9% of youngsters drank 10 or more glasses of alcohol in the last month, and 14,6% smoked 10 or more cigarettes on daily basis within the same time period, girls more than boys. 1,7% of the youngsters used soft drugs three times or more in the last month, whilst hard drugs are used by a relatively small group (0,8%). 25,5% of the youngsters showed depression, girls nearly twice as much as boys and about 6% of the youngsters showed sexual-related problem behaviour. Nevertheless, 55,1% of the 12-18 year olds did not show any of these problem behaviours at all. 30,6% of the youth showed two or more problem behaviours (we define them as 'Risk Youth') and 14,3 % showed three or more problem behavi ours ('High Risk Youth').

Table 1. *Prevalences of Problem Behaviour in the Netherlands*

Problem behaviour	Total	Boys	Girls
Antisocial behaviour	6,2	6,4	6,0
Drink	10,9	13,8	8,3
Smoke	14,6	14,0	15,9
Hash	1,8	2,5	1,2
Hard drugs	0,7	0,9	0,5
Depression	25,5	17,0	32,8
Sexual-related PB	5,6	5,9	5,3

Note. *Data of 17.961 youngsters 2007-2008 of 123 communities in the Netherlands (See Chapter 7. Jonkman et al., 2012)*

Development

Problem behaviours hardly ever spontaneously develops from one day to the other. Instead, these behaviour patterns generally develop over time with differences but also similarities between them in which genes, social experiences, life course as well as social circumstances play an interactive role. The social position is affected by what adolescents experienced in their earlier lives (conception, birth, early life and childhood), as is their social response to social circumstances (Marmot, 2000). Adolescents are affected by their childhood experiences where parts of their behaviour were already structured. Since Freud, some scientists have focused on the importance of the early life exposure (Keating & Hertzman, 1999; Tremblay,1999). Now, we know that exposure in early childhood influences cognitive, social and mental development. It is in this early phase that our brain develops with its great plasticity (Goldberg, 2001; Bruner, 1990). Positive responses to critical early phases, for example, make individuals vulnerable or resistant to various diseases later on (Berkman and Kawachi, 2000). With the cognitive revolution and great strides in brain research we also now know the importance of the early phase in terms of the origins of different diseases. In this latency of sensitive period perspective early social life conditions and early life exposure have causal influence on later health outcomes.

But, it is not only the early phase which is important for human development. It is also the accumulation of exposures throughout childhood and adolescence and the cumulative disadvantages, which are evident at the end. Disadvantages are set in motion often as a result of a series of subsequent experiences that accumulate later on during adolescence, which for example, may be demonstrated through violence (Berkman & Kawachi, 2000; Keating & Hertzman, 1999; Sampson & Laub, 1993).

In this thesis, these different developmental perspectives are not researched. Instead this study focuses on the importance of development. In the end, problem behaviours are an integral part of an individuals' life course, which takes place in the real world over a longer period of time in a place where lives are lived and where people follow different paths and experiences different stages and turning points of their personal development. Contemporary life is socially organized and the social context affects the way in which adolescents think, feel and act (Phelps et al., 2002; Elder & Conger, 2000; Furstenberg et al., 1999).

Contexts

Overall, youngsters mainly grow up in four contexts in which they interact with others on a daily basis over a longer period of time. These contexts include their family, school, peer group and neighbourhood. Most youngsters have a place or role in their family, which is the first social context in which they interact with others. In most cases, the family protects youngsters against risks and problems. Principles of love, protection and safety

are important and it is in this safe context in which children and youngsters learn social and cultural rules, norms and values. Within this secure context, youngsters can practice their behaviour, social and personal skills (Damon, 1997). In order to accomplish social and healthy maturity, the first years of development are crucial. Practices of monitoring and controlling are part of the parental role and are not only vital in this early phase, but also and perhaps especially, during adolescence when children's lives broaden. During this time, the management qualities of parents are also important (Furstenberg et al., 1999).

The world of children expands once they begin attending school. Many young children have their first contacts within these structured institutions outside the family. Nearly every child attends primary school and begins when they are four. When they turn twelve years old, they may attend different types of secondary school. The school is the second, important context of socialisation for young people. Within this context they learn cognitive, social and creative knowledge and skills in a structured way. They spend thousands of hours in school during their lifetime. They meet similar and different peers and they interact daily with students who have been evaluated as having a similar academic ability. In addition, they are supervised by different teachers over the years. The organisational structure and climate of schools also influence the development of youngsters. In recent times, the role of education has become more important in our society and it has replaced the family in allocating and socializing youth (Gottfredon & Hirschi, 1990).

As for children, and especially for adolescents, the world broadens when they interact with peers. Activities with friends, especially during leisure time and informal, are important in terms of their individual and social development. Friends are important as they provide reference in regards to interests, perspectives and interaction with others. This time is often 'experimental'. A child's behaviour, thinking, norms as well as values are confronted and many receive new inputs during these years. These 'experiments' are important in terms of identity development in adolescents (Erikson, 1987). The position of the family and the school differ now that they interact more with friends.

The neighbourhood or community is the social, physical, geographical and organizational unit in which youngsters grow up and develop in (Kawachi & Berkman, 2003). Neighbourhoods can often be identified by roads and channels but the borders are not always that clear. They can be identified as the surrounding area where youngsters are born and live and, where they often, go to their first school. It is where they play with their friends on the street. When youngsters are twelve or older their world expands and they begin to attend schools outside their neighbourhood. The influence of the neighbourhood on the development of youngsters is complex and difficult and our knowledge is still in its infancy (Sampson, Raudenbusch, & Earls, 1997). However, the social demographical position of the inhabitants and the social-cultural structure (poverty and socioeconomic differences) of the neighbourhood can directly influence child development. Nonetheless, this context also has mediating influences on other contexts in which children grow up, such as familial regimes. (Pinkster, 2009).

Social determinants

Overall levels of health, it's distribution and other social determinants are essential for understanding the problem, monitoring development and progress, as well as assessing the effects of actions. Risk factors and protective factors are the best researched social determinants of problem behaviours we have at this moment and researched over a longer time in sciences like epidemiology, criminology, sociology and prevention.

Risk factors include those factors related to the child, family, school, peer group or neighbourhood, which are associated with an increased probability of different youth problem behaviours (Hawkins et al., 1998; Loeber & Farrington, 1998). Experimental, observational, longitudinal and etiological studies revealed these associations over and over again in different studies during the last decades (Dryfoos, 1998; Junger-Tas, 1998; Junger-Tas, 1997) (Loeber et al., 2008; Arthur et al., 2006; Loeber & Farrington, 1998). Studies show that several risks in different contexts can contribute to the development of minor or major problems (e.g. bullying, fighting to violence, drugs and alcohol (Farrington, 2004; Loeber & Farrington, 1998; Hawkins et al., 1998)). It is especially the accumulation of risk factors which are important. Those risk factors have to be detected and are important aspects of prevention. We see these associations also in the Netherlands. Table 2. shows the results of the relationships between Problem behaviours and Risk factors in our country.

Table 2. *Adjusted Odds Ratio's Risk factors and Problem behaviours*

Family	Alcohol	Antisocial behaviour	Smoking	Soft drugs	Hard drugs	Sexual related PB	Depression
Family History of Problem behaviour	2.17 (1.91-2.49)	3.85 (3.37-4.39)	2.26 (2.03-2.52)	5.74 (4.53-7.36)	4.94 (3.42-7.13)	2.64 (2.28-3.07)	2.09 (1.91-2.29)
Poor Family Management	2.25 (2.01-2.51)	2.31 (2.03-2.63)	1.77 (1.62-1.93)	2.39 (1.85-3.08)	2.53 (1.70-3.76)	1.78 (1.55 (2.05)	1.47 (1.36-1.57)
Family Conflict	1.56 (1.41-1.73)	2.21 (1.95-2.50)	1.66 (1.52-1.81)	2.29 (1.80-2.91)	2.32 (1.59-3.38)	1.61 (1.41-1.85)	2.48 (2.31-2.67)
Parental Attitudes Favourable toward Drug Use	5.21 (4.44-6.13)	2.37 (2.06-2.73)	2.56 (2.31-2.84)	3.45 (2.47-4.81)	2.42 (1.55-3.78)	2.31 (1.96-2.74)	1.35 (1.25-1.46)
Parental Attitudes Favourable to Antisocial Behaviour	1.58 (1.42-1.76)	3.60 (3.14-4.12)	1.61 (1.47-1.77)	3.29 (2.55-4.23)	2.79 (1.90-4.1)	1.76 (1.53-2.01)	1.56 (1.46-1.68)
School							
Academic Failure	1.70 (1.53-1.91)	2.06 (1.82-2.34)	1.61 (1.47-1.77)	2.28 (1.81-2.86)	2.08 (1.45-2.98)	1.43 (1.25-1.65)	1.86 (1.72-2.01)
Low Commitment to School	2.69 (2.42-2.99)	4.06 (3.58-4.61)	2.06 (1.89-2.25)	5.48 (4.23-7.11)	4.30 (2.93-6.31)	2.25 (1.97-2.57)	2.55 (2.36-2.74)

Early Antisocial Behaviour	NA	NA	NA	NA	NA	NA	NA
Children/youngsters							
Rebelliousness	2.65 (2.38-2.95)	4.56 (3.97-5.23)	2.11 (1.93-2.30)	4.55 (3.49-5.94)	3.89 (2.59-5.84)	2.15 (1.88-2.46)	1.87 (1.74-2.01)
Gang Involvement	4.52 (3.43-5.95)	11.31 (8.88-1.39)	3.16 (2.51-3.98)	9.99 (7.12-14.02)	9.78 (6.11-15.67)	4.85 (3.67-6.39)	2.32 (1.86-2.88)
Early Initiation of Antisocial Behaviour	3.05 (2.69-3.45)	15.38 (13.35-17.7)	3.10 (2.78-3.44)	8.18 (6.36-10.52)	7.35 (4.98-10.86)	3.77 (3.25-4.37)	2.19 (1.98-2.41)
Early Initiation of Alcohol and Drug Use	4.87 (4.32-5.50)	6.10 (5.25-7.10)	21.43 (18.42-24.91)	39.59 (20.32-77.11)	10.33 (5.78-18.49)	5.76 (4.86-6.82)	1.96 (1.82-2.11)
Favourable Attitudes towards Alcohol and Drug Use	5.49 (4.82-6.25)	4.45 (3.86-5.1)	4.74 (4.29-5.25)	23.68 (13.49-41.55)	5.89 (3.64-9.52)	4.20 (3.57-4.95)	1.49 (1.38-1.61)
Favourable Attitudes towards Antisocial Behaviour	2.68 (2.40-3.00)	4.89 (4.21-5.68)	2.39 (2.18-2.61)	5.04 (3.74-6.80)	3.83 (2.47-5.92)	2.36 (205-2.71)	1.51 (1.41-1.62)
Friends Use of Drugs	13.61 (10.72-17.26)	5.72 4.85-6.73)	6.34 (5.60 —7.18)	18.88 (9.59-37.16)	4.23 (2.52-7.11)	5.47 (4.38-6.81)	1.59 (1.46-1.73)
Interaction with Antisocial Peers	2.28 (2.02-2.57)	6.49 (5.41-7.77)	2.51 (2.28-2.77)	6.47 (4.28-9.79)	2.98 (1.87-4.74)	2.68 (2.28-3.17)	1.88 (1.75-2.02)
Community							
Low Neighbourhood Attachment	0.97 (0.85-1.12)*	1.11 (0.95-1.29)*	1.14 (1.02-1.28)	1.27 (0.91-1.71)*	1.19 (0.73-1.93)*	1.24 (1.03-1.50)	1.48 (1.35-1.62)
Community Disorganization	0.95 (0.85-1.05)*	2.11 (1.86-2.39)	1.46 (1.33-1.59)	1.72 (1.36-2.18)	1.82 (1.26-2.64)	1.60 (1.40-1.83)	1.46 (1.36-1.56)
Transition and Mobility	0.90 (0.82-1.02)*	1.34 (1.18-1.53)	1.25 (1.14-1.37)	1.43 (1.13-1.82)	1.37 (0.94-2.00)*	1.37 (1.20-1.58)	1.40 (1.30-1.51)
Perceived Availability of Drugs and Weapons	1.28 (1.14-1.43)	1.60 (1.40-1.84)	1.21 (1.10-1.32)	1.76 (1.32-2.32)	2.92 (1.78-4.77)	1.27 (1.10-1.47)	1.13 (1.06-1.22)
Laws and Norms Favourable to Antisocial Behaviour	1.08 (0.97-1.21)*	1.71 (1.51-1.93)	1.17 (1.08-1.28)	1.54 (1.23-1.93)	1.90 (1.33-2.70)	1.22 (1.06-1.39)	1.35 (1.26-1.45)

Note. *Controlled for age, gender, ethnicity, school type, family structure, education parents, work parents, language. not significant. Data from sample of 17.961 youngsters in 123 communities in the Netherlands (see Chapter 7, Jonkman et al., 2012)*

Although still less researched compared to risk factors, there is more interest and knowledge in public health and prevention science in the importance of protective factors: these factors not only protect against problem behaviour because they are associated with less problem behaviours. But they also increase positive

outcomes (positive adjustment, positive mental health; (Catalano et al., 2004). Table 3 shows the results for Problem Behaviours and Protective Factors in the Netherlands.

Table 3. *Adjusted Odds Ratio's Protective Factors and Problem Behaviours*

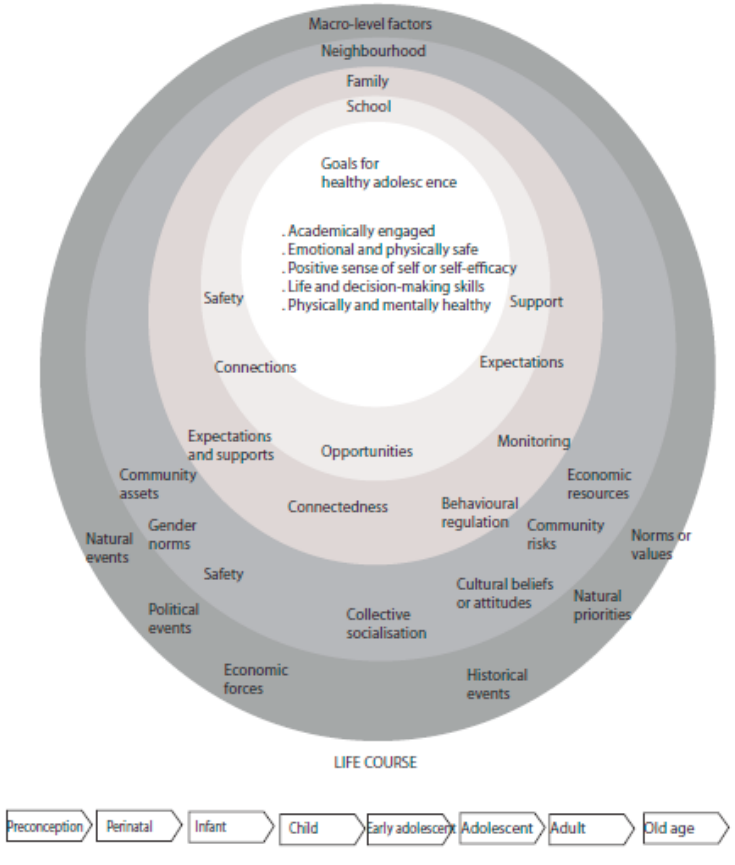
Protective factors							
Family	Alcohol	Antisocial behaviour	Smoking	Soft drugs	Hard drugs	Sexual-related PB	Depression
Attachment	0.69 (0.62-0.77)	0.55 (0.48-0.63)	0.63 (0.58-0.69)	0.51 (0.39-0.66)	0.42 (0.27-0.61)	0.68 (0.59-0.79)	0.50 (0.47-0.54)
Opportunities for Prosocial Involvement	0.62 (0.56-0.69)	0.54 (0.48-0.62)	0.65 (0.60-0.71)	0.57 (045-0.73)	0.41 (0.27-0.61)	0.60 (0.52-0.69)	0.50 (0.47-0.54)
Rewards for Prosocial Involvement	0.58 (0.52-0.65)	0.59 (0.52—0.67)	0.67 (0.61-0.73)	0.62 (0.48-0.80)	0.63 (0.43-0.93)	0.66 (0.60-0.76)	0.61 (0.56-0.65)
School							
Opportunities for Prosocial Involvement	0.69 (0.62-0.77)	0.54 (0.47-0.62)	0.74 (0.68-0.81)	0.57 (0.45-0.73)	0.51 (0.34-0.75)	0.75 (0.65-0.86)	0.70 (0.65-0.75)
Rewards for Prosocial Involvement	0.73 (0.65-0.82)	0.62 (0.54-0.71)	0.82 (0.75-0.90)	0.80 (0.62-1.03)*	0.79 (0.53-0.86)	0.96 (0.76-1.03*	0.66 (0.61-0.71)
Children/youngsters							
Belief in the Moral Order	0.30 (0.26-0.35)	0.21 (0.17-0.27)	0.46 (0.41-0.52)	0.22 (0.14-0.34)	0.19 (0.09-0.39)	0.43 (0.36-0.52)	0.62 (0.57-0.67)
Religiousity	0.54 (0.48-0.61)	0.89 (0.78-1.01)*	0.82 (0.75-0.90)	0.45 (0.34-0.60)	0.50 (0.33-0.77)	0.64 (0.55-0.74)	1.03 (0.96-1.11)*
Community							
Opportunities for Prosocial Involvement	0.95 (0.84-1.07)*	0.67 (0.58-0.78)	0.81 (0.73-0.81)	0.46 (0.33-0.64)	0.65 (0.42-1.03)*	0.73 (0.62-0.87)	0.66 (0.61-0.72)
Rewards for Prosocial Involvement	0.90 (0.81-0.99)	0.65 (0.58-0.74)	0.76 (0.70-0.83)	0.65 (0.52-0.82)	0.63 (0.44-0.90)	0.78 (0.68-0.89)	0.63 (0.59-0.68)

Note. *Controlled for age, gender, ethnicity, school type, family structure, education parents, work parents, language, * not significant. Data from sample of 17.961 youngsters in 123 communities in the Netherlands (see Chapter 7, Jonkman et al., 2012)*

Levels of influence

Behaviours are not randomly distributed within the population, rather they are socially patterned and often clustered together. Poverty, socioeconomic status and low education are all factors that increase the likelihood of risk behaviours. Social position in which you are born, grow up and live place individuals at 'risk of risks' (Rose, 1992). That is the reason why individual development can be placed into an ecological context. Environments place constraints on individual behaviour as well as norms, social control, and opportunities can improve the quality of life (Berkman & Kawachi, 2000). There is an increasing interest and activity in promoting a more multilevel approach in behavioural, social and health sciences. Development should not only be researched on individual but on multi levels ('from genetic up to socio-cultural and political level of analysis'). Individual outcomes are more and more researched by upstream mechanisms in which these outcomes operate (Viner et al., 2012; (Galea, 2007; Luke, 2004).

Figure 1. *Individual development in ecological framework*



Note. An ecological framework for developmental health. From: Lancet: Vol 379, 2012. p. 1567

A SOCIAL EXPERIMENT

Given the fact that different problem behaviours of youngsters are connected and interrelated, these behaviours have their developmental patterns, the importance of four daily contexts in which they grow up in which risk and protective factors play an important role and taking into account an upstream perspective, what can be done? Would it be realistic to consider building or rebuilding environments that have a positive effect on a child's healthy and social development, when development in itself is so complex? Is it possible to reduce this knowledge and complexity into workable steps and goals for practitioners and politicians?

Communities that Care (CtC) is an example of a preventive intervention system, which aims to support the healthy and social development of youngsters on a community level taking into account this complexity. It is a manualized system, which seeks to develop and transform prevention work within communities to address alcohol and drug use, delinquency and other problem behaviours (see also Chapters 2 and 4). CtC mobilizes and empowers coalitions of diverse community stakeholders to collaborate in community assessment, planning, and action to implement and institutionalize science-based prevention service systems. The premise of CtC is that a reduction in the prevalence of adolescent alcohol and drug use, delinquency and other problem behaviours in a community can be achieved through the identification of elevated risk factors and depressed protective factors. It addresses those risk factors found in scientific studies which have been known to increase the likelihood of adolescent substance abuse, including the consumption of alcohol, cigarettes, hash and hard drugs, violence and delinquency, sexually-related problem behaviour and depression. Yet, it also addresses protective factors which have helped reduce the likelihood of these outcomes. Based on this knowledge, the CtC process involves assessing the prevalence of the above-mentioned problem behaviours. But CtC also relates both risk – and protective factors within a particular community to the identified problem behaviours. Based on this local profile, communities can identify and in turn, implement tested and effective, preventive interventions to address the underlying factors. A strategic, community-specific process has been designed to increase communication, collaboration and ownership among service providers and community members. During this process, communities receive technical assistance and specific training courses by licensed CtC-experts. Although it remains a community intervention where different parties bear different responsibilities, one person will be assigned as the local project leader who has specific responsibilities during the three-year implementation period. After the implementation period, the community will be strong enough stand on its own legs, still using the CtC-prevention framework (Hawkins & Catalano, 1992; Ince, 2005; Jonkman et al., 2006).

The CtC prevention strategy can be summarized as follows:

- First, all residents of a particular city, community or neighbourhood, as well as all of those involved in the upbringing and development of the young will be mobilized.
- The second step aims to create a common vision and language, and to set-up a coherent planning structure, which combines all the different area-specific efforts in order to secure a safe future for the young.
- This is followed by a prioritization of efforts based on scientific research in regards to risk factors and protective factors.
- Next, clear and quantifiable results are analyzed and defined, which can be followed up over time.
- Subsequently, gaps and overlaps within the selection of programs for youngsters are identified.
- At the next stage effective and promising programs will be deployed.
- Finally, the development of the youth will be monitored and assessed.

The heart of the approach is the analysis of the situation and problems within a city or neighbourhood.

The CtC pupils survey enables cities and communities (municipalities and neighbourhoods) to chart the development of both young people and the quality of their living environment. With the help of these insights, municipalities and neighbourhoods can get a firm grip on the development of their young, and they will be able to follow this development over time. This local, epidemiological tool enables them to launch a systematic campaign for the improvement of the social and educational environment. Furthermore, these insights help clarify which communities are eligible for the deployment of effective programs. CtC is a community-orientated prevention strategy. In order to prevent something, you must have significant insight of its root causes. The CtC approach is based on a theoretically and empirically grounded model of risk and protective factors, related to the origins of young people's problematic behaviour, as defined. This model provides the basis for the development of a precautionary approach.

Over a longer period of time, different parties will consistently cooperate to retard problem behaviour in a specific city or community. There are four core elements that characterize this intervention (see Chapter 4, Jonkman et al., 2008).

1. The use of similar implementation processes

The implementation of CTC is a process, which takes place over a longer period of time, where at specific moments, specific targets should be reached and necessary steps should be taken for the successful implementation of the CTC Prevention Support System on a local level. Special training sessions and technical assistance are delivered to the community, and specially developed tools and important scientific concepts of prevention are transferred to communities (Jonkman et al., 2006; Ince, 2005).

2. The use of epidemiological data

Actual research on the distribution and determinants of health and behaviour of youngsters is important for the improvement of their environment and lives. Analyses of prevalence, social contexts which they grow up in, their development over the years, and the use of risk- and protective factors are all important. The use of epidemiological data is essential for CTC.

3. The use of promising and effective programs

When the situation of a community has been mapped out and the risk- and protective factors have been prioritised, it is important to vigorously tackle them. Within Communities that Care, this is done by the implementation of tested and effective programs. CtC provides guidelines about which programs should be deployed where, when, and how, in order to support the healthy and social development of children and adolescents. A guide with tested and effective programs (Ince et al., 2005; www.Jeugdinterventies.nl) gives communities an overview identifying which program is suitable for each domain (family, school, individual/peer, community), different ages (0-4 years; 4-12 years and 12-18 years) and different risk – and protective factors (see chapter X, Prevention).

4. The use of ongoing evaluation of results

The effects of preventive interventions must be made clear over a longer period of time. Here, the epidemiological data of the youngster's survey are used as well. By routinely administering such tests (eg once in every three years) the development of problem behaviour, risk factors and protective factors are made visible. At the same time, the operation of individual programs and the total program supply in communities is made visible as well.

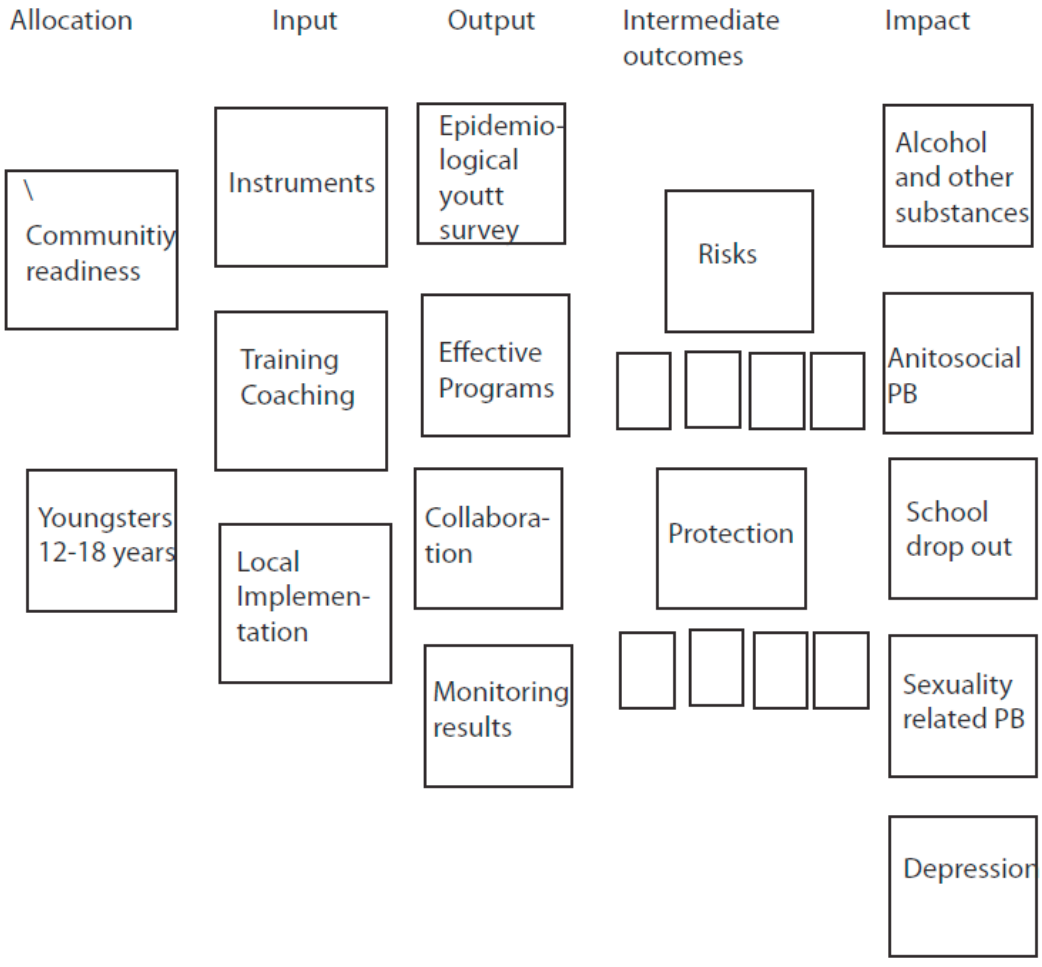
IMPACT

Politicians ask more and more which policy, program or intervention shows results, what are their conditions and what should be done to disseminate this on broader scale. Social policy and decision making is an important topic on different levels. On the local and city level politicians ask, for example, what is the level of anti social behaviour among youngsters about which inhabitants complain, which areas should we target and what are the results we can expect from prevention strategies? Since a few years politicians in the Netherlands are e.g. confronted with a high level of binge drinking among youngsters (as they were confronted with increasing violence ten years earlier). Binge drinking is highly prevalent among Dutch youngsters in rural areas. Is this a typical national problem when we compare it with other countries? How to explain this binge drinking and what can be done to decrease the problematic drinking behaviour of youngsters? Alcohol and hash use among youngsters is high in western, modern countries nowadays, especially in Europe.

European politicians, for example, ask themselves what are the similarities and differences between several countries, how to explain this high level of substance uses and what can be done internationally and in an early phase to reduce this behaviour? Evaluation of social programs is important, not only for local, national and international governments but also for international organisations and foundations (Murane & Willett, 2011; Rossi et al., 2004; Shadish, Cook & Campbell, 2002). Practitioners want to work with instruments and tools which improve their work. Their work has to be professionalized and they want to show that their work is important. For researchers program evaluation and impact research is also important because good research accumulates to the knowledge of social programs, informs social action, improves social condition and human development. Researchers have to define the problem, the seriousness of the problem and the location of the problem. They have to research if the policy, intervention and action target the right population. But also, what are the core elements of the intervention and is the policy, program or intervention implemented well. For researchers it is important to know the intermediate as well as the final outcomes and if the costs of the intervention are reasonable in relation to its benefits. Their work should be placed in 'a tradition that has aspired to improve the quality of our physical and social environments and enhance our individual and collective well-being through the systematic creation and application of knowledge' (Rossi et al., 2004), p 2).

Supporting families, schools and communities in upbringing children and adolescents in this timeframe is an important scientific topic, especially tackling this topic in the context of communities. Conceptualising, implementation and evaluation of co-ordinated prevention programming is seen as a promising perspective (Nation et al., 2003; Wandersman & Florin, 2003). The social experiment Communities that Care is such a co-ordinated community perspective developed interesting for politicians at different levels, practitioners as well as researchers.

Figure 2. *Program outline*



Communities that Care is allocated to communities which suffer with the burden of problem behaviours of youngsters, wants to prevent the development of problem behaviour of youngsters or to build up strategic youth policy in their area. Communities that Care is targeted on youth from 12-18 years, but also tackles this age group with earlier interventions set out on younger age. Communities that Care combines analyses of community problems and strengths, effective prevention programming, concerns for collaboration and monitoring of results.

These elements can be seen as preventive input. With the use of the CtC-instruments, coaching and the local implementation plan communities themselves work out this community prevention strategy. Core elements show the output results. The output wants to decrease risk factors and increase protective factors in families, schools, peer groups and communities. These factors can be seen as intermediate outcomes. Decreasing risk factors and increasing protective factors should, at the end, bring down alcohol (and other substance use) and antisocial behaviour, but also show their significant influence on school dropout, sexuality related problem behaviour and depression.

Application of impact research has grown rapidly as well as fruitfully by the development of new research methodology and the availability of fast computing software packages (Raudenbusch & Byrk, 2002; Twisk, 2006; Muthen & Muthen, 2008; Hox, 2010). Some of them are used in this thesis. But not only research techniques also designs elaborated over the years. Randomized trials ('state of art' and successful in the field of agriculture and health) to research the impact of policies, programs and interventions came up also in social science, used in clinical trials as well as in cluster trials. The social program is randomly allocated here across a sample of observations. Selection bias is avoided by selecting two similar groups equal on all dimensions and random assignment is the critical element. The impact of the program is detected by comparing the experimental group/area with the (counterfactual) control group/area (Bloom, 2005; Khandker et al., 2010). But there are also examples of new evaluation techniques (like Propensity Score Matching (PSM), Double Difference Method (DD), Instrumental Variables (IV) estimation) which are used in impact studies of social interventions. (Murane & Willett, 2011), (Khandker et al., 2010). (Guo & Fraser, 2010).

AIMS AND OUTLINE OF THE THESIS

Social intervention can be researched more and have to be researched just to learn more from what we do. This prevention study on Communities that Care wants to add to this tradition or to what Campbell wrote: "*The United States and other modern nations should be ready for an experimental approach to social reform, an approach in which we try out new programs, designed to cure specific social problems, in which we learn whether or not these programs are effective, and in which we retain, imitate, or discard on the basis of apparent effectiveness on the multiple imperfect criteria available*". (Campbell, 1969), p. 409).

This thesis (*see Overview study, Appendix 1*) addresses a number of different issues concerning prevention, research and impact of the prevention of problem behaviours of youngsters in communities. These issues have complementary goals and form the main parts of this thesis.

The FIRST PART (PRACTICE) provides answers for more practical questions concerning preventive interventions in the Netherlands. The main research question of this part is: What can we do?

Chapter 2 introduces ('*From behind Dikes and Dunes: Communities that Care in the Netherlands*') Communities that Care. It provides a general overview of this prevention strategy in the Netherlands during the first years. Although this paper is dated, after its completion I started to think about creating an effect research of this strategy in the Netherlands. It can be viewed as the beginning of all the work that follows.

Chapter 3 ('*Prevention*') is about effective preventive programs, which can be used for families, schools, peers and communities in the Netherlands, and the daily surroundings of children and youngsters. In the Netherlands, the appeal of preventive efforts has led to many flourishing projects and programmes. In the Netherlands, as elsewhere, a new practice has arisen in the last five years, which critically evaluates existing prevention programmes and searches for and implements effective, 'evidence-based' interventions.

Chapter 4 ('*Communities that Care: Core elements and context. Research of implementation in two countries*') describes the degree to which implementation of the Communities that Care (CTC) prevention operating system was reached in twenty-two communities in two countries: the United States (twelve communities) and the Netherlands (ten communities). Core elements of CtC and the results of two implementation measures conducted in both countries are reported here. Similarities and differences of the implementation process are also discussed.

The SECOND PART (Chapter 5, 6, and 7) explores the possibilities of how assessments of specific youth problem behaviours within units like communities, cities and countries can be worked out ('ecometric analysis', as Raudenbusch calls it, 2003). The general question in this part of the study is: Where do we have to start our preventive work? The assessments of these broader units are presented as a problem orientated approach in which a profile of the situation of youngsters in a specific area is made with specific social demographic backgrounds, problem behaviours, risk factors and protective factors on which the targets are based. The assessment clarifies which problems score the highest and what are the most important predictors of these problems in specific areas. A good assessment is also for comparative community research the starting point for the preventive activities that will follow. The aim of Communities that Care as a prevention system is to prevent adolescent problem behaviours (among them delinquency and violence, underage drinking and tobacco use by teens). This second part of this study is methodological and analytical based and concentrates on research of specific problem behaviourial outcomes (anti-social behaviour, violence/delinquency and alcohol use).

Chapter 5 ('*Prevention of antisocial behaviour in an urban context*') contains basis proposals about where to implement preventive activities for youngsters in a metropolitan city (areas with high prevalences of, in this case, antisocial behaviour), which underlying factors to target (risk factors) and what health gains these interventions may yield (attributable fractions).

Most research on the prevalence, determinants and variations of violence and delinquency among youngsters is conducted in Western societies. Chapter 6 ('*Different worlds, common roots. A multilevel analysis of youth violence and delinquency in the Netherlands Antilles as a basis for crime prevention*') is a multilevel study, which has been implemented in another part of the world: Netherlands Antilles (NA). It aims to build upon prognostic multilevel models as a basis for targeted crime prevention in a non-Western area.

'*Community variation in adolescent alcohol use in Australia and the Netherlands*' is Chapter 7 of this thesis. It is an investigation of the community context of youth alcohol behaviour in two different countries. This article compares community patterns of adolescent alcohol use and risk and protective influencing factors in Australia and the Netherlands.

The THIRD PART of this study (IMPACT) will answer the research question: Is Communities that Care effective or not in preventing adolescent behavioural health problems and why? In Chapter 8 ('*Prevention of problem behaviours among youngsters: the impact of the Community that Care-strategy in the Netherlands (2008-2011)*') is a quasi-experimental study of five experimental and five control communities to look for the impact of the CtC-intervention on the outcomes. In a four wave longitudinal study of youngsters of E- and C-communities the effects on initiation of drinking and smoking and on the prevalence of a broader range of problem behaviours, risk factors and protective factors are studied.

Chapter 9 ('*International translational research: Promise and caution*') is a discussion paper on the presented study in Chapter 8.

The final chapter 10 (*'Discussion'*) presents the integrated results in the forgoing chapters, describes several limitations of this thesis and discusses the implications for practice, prevention science and future research.

PART I: PRACTICE

Two roads diverged in a yellow wood,
and sorry I could not travel both,
and be one traveller, long I stood,
and looked down one as far as I could.

Robert Frost

Prevention of violence and delinquency, alcohol and drug use, and other problem behaviours of youngsters also has a long history in the Netherlands. Although in the Netherlands, as in other modern countries, the last decades have been defined by a greater emphasis on a 'Culture of Control' (D. Garland), we have also witnessed increasing pleas for developmental prevention strategies. Internationally, some interesting studies have been conducted which focus on the quality of preventive interventions. In the Netherlands, as well, policies, programs, and interventions have begun to be studied in a systematic and scientific way. During these years, Communities that Care created a prevention model which is not only interesting in itself, but also provides new insights for the field of prevention. Communities that Care links scientific research, the use of effective preventive interventions, and the implementation of a preventive strategy at local levels (central topics of this thesis).

Chapter 2 introduces the underlying theory and methods of Communities that Care as described in the following chapters, and the socio-historical background of the initiation of the preventive intervention in the Netherlands. Over the last few years in the Netherlands, effective prevention has been progressing slowly, step by step.

In Chapter 3 we describe different effective and promising programs which can be used for families, schools, communities, and youngsters, and to target specific underlying factors. Questions which are often asked, but less often answered in the Netherlands concern how can we implement an effective program, how we can disseminate and replicate the program to scale, and what is necessary to ensure the fidelity of the program on national and local levels.

In Chapter 4 some important implementation topics are discussed.

2. FROM BEHIND DIKES AND DUNES: COMMUNITIES THAT CARE IN THE NETHERLANDS

Harrie Jonkman, Josine Junger-Tas and Bram van Dijk

In: Children & Society, 2005

'A rising tide lifts all boats.' (John F. Kennedy)[1]

ABSTRACT

This paper will provide a general overview of the implementation of the Communities that Care (CtC) programme in the Netherlands. It outlines the socio-historical development of the initiative and considers the rationale and starting point for the Dutch experiment and the tools used in the process. Attention will also be paid to the implementation of CtC and some of the problems met in trying to introduce the CtC scheme. The final part of this paper will consider the main outcomes of the first (process) evaluation of the experiment.

INTRODUCTION

Communities that Care (CtC) is truly a 'crossing border initiative.' This preventive strategy, which aims to attack problem behaviours of young people in deprived areas, neighbourhoods and cities, was developed and first implemented in the United States. Pilots projects are also been undertaken in the United Kingdom (France and Crow, 2005), Australia and since 1999 in the Netherlands. But not only does CtC cross national borders as a preventive strategy it also crosses the borders between disciplines: science, policy and practice.

Evaluation research of preventive or treatment interventions in the Netherlands is still in its infancy, as is the case in the rest of Europe. One of the main reasons for this is that policymakers and administrators have not seen the usefulness of such research and, as a result, do not require subsidised intervention programmes to be tested on effectiveness. However, in the past decades a number of western countries have shown a clear change in this respect (Sherman and others, 1996). Sherman's report showed that much of what we do in terms of prevention in local communities has no effect whatsoever on the (later) behaviour of young people. But what was clear from his proposals was that if prevention is to be effective then it needs to be coordinated and embedded in the local culture and professional practice. It was this that encouraged the Dutch government to adopt the CTC approach to community-based prevention. CTC fitted in well with emerging efforts of Dutch local authorities to develop prevention strategies in closer collaboration among all youth services, including youth welfare agencies, local schools, the youth protection service and the police.

This article intends to provide a general overview of *CtC* in the Netherlands four years after its take-off. First, we will describe the socio-historical context in the Netherlands that the CTC approach had to engage with. Secondly, we will consider the Dutch experiment and the development of tools that had to take place in the process of implementation. Thirdly, we will discuss the implementation of CtC and some of the problems we met in trying to introduce the programme in local communities. Fourth and finally, we will consider the main outcomes of the first (process) evaluation of the experimental settings. We will then conclude with some observations about future evaluation research.

<?> *Taken from Bellah and others, 1992*

SOCIO-HISTORICAL CONTEXT

The universal prevention strategy *CtC* has been running in the Netherlands for over four years. Two Dutch Ministries made the translation and introduction of the programme possible: the Ministry of Justice and the Ministry of Health, Welfare and Sports. Interest for this initiative arose in the second half of the nineties. The Minister of Justice at the time was worried about the explosive growth of prisons and juvenile penal institutions. She was interested in alternative ways to deal with serious offenders as well as in looking into the possibility of preventing serious offences. The Ministry commissioned a report that would deal with different options for prevention and *CtC* was presented as a promising approach (Junger-Tas, 1996,1997). CtC was thought to be one of the more positive socio-political answers to the significant increase of violence and youth delinquency in certain local settings in the Netherlands during the nineties. CtC was seen as a possible structured, community-orientated and effective answer to the social consequences of problem behaviour of young people, which has disruptive effects in a number of Dutch areas, neighbourhoods and cities. A coherent and planned initiative was expected to positively affect different social environments (family, school, community and individual behaviour) and to add a more rationale approach to local youth policy as well as stimulating more effective methods of raising children in these areas.

The originality of CtC lies in its rationale and systematic approach of social and youth problems at the local level. Social change is a very complex process and it requires a well thought through and reasoned approach through knowledge of the problems at hand, reliable organisation and the availability of effective interventions. The roll of the Dutch national state in implementing CtC was substantial, which is in line with the historical tradition of Dutch social policy. It was the state through the Ministries mentioned above that took the initiative of limited trial implementation. This is a fundamentally different approach from countries where the role of the individual and the community is more pronounced than the role of the national state (Waltzer, 1997). However, this approach is also gradually changing in the Netherlands as well.

The Netherlands has 3.7 million children and young people between the ages of newborn to 18 years old. That is approximately a quarter of the total population. One fifth of these are recent or second generation immigrants and belong to an minority ethnic group.

However, most of these live in the large cities meaning that they make up nearly 50 per cent of the youth population. The large majority of the 3.7 million children and young people grow up without serious problems. But some of them (estimates range from 6 per cent to 10 per cent) show problem behaviours, which might pose an immediate or future threat to their own lives or to that of others. These children and young people show (indications of) violent as well as delinquent behaviour, problematic substance use, school dropout and or teen pregnancy, often in different combinations. Of these different kinds of problem behaviours, violence and youth delinquency in particular increased significantly during the nineties. The number of young people interviewed for violent acts more than doubled between 1993 and 2000 (from 4.18 per 1000 in 1993 to 8.77 in 2000). The total volume of juvenile delinquency, including violent acts as well as crimes against property, arson and vandalism increased by 65 per cent between 1980 (2.8 per cent) and 1996 (4.7 per cent), although part of this increase was caused by a change in the police registration system (Van der Laan, 2004). The occurrence of problem behaviours in the Netherlands has traditionally been low. Teen pregnancy, for example, was never seen as real 'problem behaviour'. However, it has recently increased in certain neighbourhoods and among particular groups of the population. The accumulation of problem behaviours among young people occurs primarily in the bigger cities of the Netherlands (Jonkman and Snijders, 2005) a trend policymakers wish to reverse.

There are two more developments which play a key role in why CTC was seen as an important development in the Netherlands. Both are based on a wealth of research outcomes over the last ten to 15 years of studies undertaken in particular in psychology, psychiatry and sociology. These are the growing importance of a developmental perspective in the life of children and the growth of effective preventive and curative interventions. In the nineties there is a clear scientific move towards a more developmental perspective. This happens in different fields such as health (Keating and Herzman, 1999), psychiatry (Achenbach and McConaughy, 1997; Achenbach, 1999; Verhulst, 1999, 2003), economics (Sen, 1999; J. Van der Gaag, unpublished manuscript) and sociology (Elder, 1999; Elder and Conger, 2000; Furstenberg and others, 1999). In psychology the developmental perspective has already been prominent for some time (Vygotsky, 1978; Piaget, 1977; Bruner, 1968,1983; Erikson, 1987). Moreover, with respect to the question of preventing problem behaviours, there is considerably more emphasis placed on early development, on the upbringing of children and youngsters and on the relationship and interaction with antisocial behaviour (Gottfredson and Hirschi, 1990; Rutter and others, 1998; Tremblay and Craig, 1995; Tremblay, 1999; Junger-Tas, 2001). In addition an important number of studies have been published showing that some preventive interventions are more effective than others (see for example Dryfoos, 1990,1998; Durlak, 1997; Elliott and Tolan, 1999; Elliott, 1997; Sherman and others, 1996; Greenberg and others, 2001). As a result there was a growing recognition that prevention might have an impact on development of children and youngsters if implemented well. It was this alongside the growing levels of problems that encouraged the Dutch government to adopt CTC as a preventative experiment.

THE DUTCH EXPERIMENT

The political context in the Netherlands with concerns about serious public order and crime problems in a number of city areas and the growing evidence base of scientific developments in prevention cleared the path for CtC. Together they make up the socio-historical context of CtC behind our dikes and dunes. This led the Ministries of Justice and Welfare in 2000 to fund an experiment of CtC in four pilot areas: Amsterdam, Arnhem, Rotterdam, and Zwolle. A commission, including researchers, implementers and civil servants, made the final selection of the four pilot sites. The Netherlands Institute of Care and Welfare (NIZW), a national organisation which collects and develops intervention programmes in justice and welfare, was charged with the implementation and observation of the CtC process. While a contracted agency, the DSP-Group, was commissioned to conduct the process evaluation.

Before the programme could be implemented the American student survey used by CTC USA had to be translated and adapted (as little as possible) to the Dutch situation. Some adaptations had to be made based on cultural differences between the United States and the Netherlands. For example we considered that according to Dutch youth culture there were too many questions on drug use and weapons and too little on protective factors. The instrument was tested and piloted for relevance and comprehension before using it as a research tool. In Holland a lot of diagnostic research has been done on antisocial development and problem behaviour, for the most part on the individual level. A great number of valid and reliable tools are accessible and useful for diagnosis and research. But as far as investigating problem behaviour on the group level (the aggregated level) is concerned the instruments at our disposal are relatively scarce. This is unfortunate because it is clear that we cannot solve all problems on the individual level. So we may learn a lot more by developing tools for social diagnosis. Problem behaviours (violence, delinquency, substance abuse, school dropout and teen pregnancy) accumulates in specific areas and neighbourhoods, frequently combined with other social problems (poverty, violence, social exclusion). We therefore need good tools in order to be able to say something substantial about the development of youth in these areas. Moreover, neighbourhoods and cities need accessible scientific instruments for this task, especially now that the responsibilities of Dutch local authorities for youth policies have been extended. Areas with real problems have to be distinguished from areas with relatively few problems.

Developments in problem areas have to be recorded over a period of time and the authorities need solid information on how and where to attack problems and insight into the underlying factors. Characteristic of our CtC research are the four contexts in which young people grow up (family, school, friends and community), the development of children and young people over the years (newborn to 18 years) and the socio-epidemiological toolbox of underlying risk and protective factors.

When the circumstances of youth people in a particular area or neighbourhood have been mapped CtC aims to tackle problem behaviour over an extended period. Within CtC this is done with the use of tested (effective) programmes: well-coordinated and researched based strategies to prevent problem behaviour of youngsters. Scientists, politicians and professionals have come to recognise the advantages of effective preventive programmes. Over the past 15 years evaluation research has been conducted on the effects of programmes. This revealed the criteria of effective preventive interventions, such as a focus on underlying factors of problem behaviour, the importance of age adequacy, a clear structure and concrete results, and the scientific determination of the results of interventions (Sherman and others, 1996; Durlak, 1997; Elliott, 1998; Elliott and Tolan, 1999; Posey and others, 2000). Local settings in America are able to work with an effective 'menu' of around 100 effective programmes (Posey and others, 2000). But the programmes in this 'American menu' are not easily transferable to the Dutch context because of differences in culture, language, working methods and organisation systems.

When we started with CtC in the Netherlands no studies of effective programmes had been conducted yet. There were hundreds of Dutch programmes for children and youngsters in areas, neighbourhoods and cities. Only 5 per cent had been evaluated with before and after measurements (Van der Ploeg and Ferwerda, 1998). There was no strong tradition of research on the effectiveness of prevention programmes in the Netherlands and the studies that had been done were not satisfactory in terms of their methodology, the degree of suitability and cost-benefit analysis of interventions (Verdurmen and others, 2003; Bartels and others, 2001). Studies had been conducted on programmes in a specific problem domain as addiction (Bolier and Cuijpers, 2001) and there were a lot of 'best practice manuals' (Van Dijke and others, 1999). But we did not have a 'prevention manual' on effective interventions for children and youth with respect to a number of problem behaviours, over an extended period of time (newborn to 18 years), usable in different contexts (family, school, friends, neighbourhood), and connected to underlying factors. There was no study separating effective programmes from non-effective ones. This was the situation when CtC was undertaken four years ago. Since then we have made some progress.

This year we published the manual *Veelbelovend en effectief,* ('Promising and effective'; Ince and others, 2005), containing all effective and promising Dutch preventive programmes that may be used in local areas to

support families, schools, youth and communities. The selection of effective and promising programmes was based on clear criteria: programmes are considered promising when they meet criteria concerning objectives, target group, method and theoretical underpinnings; programmes are considered effective when they also show positive outcomes in scientific research, which meet objective methodological criteria. For this purpose we studied the available literature, standardised all programme descriptions and sent them to programme owners for verification. The selected programmes were divided into four different domains. The result was a total of 31 effective and promising programmes for Dutch children and young people. Five were defined as effective: two in the family domain and three in the school domain. The other 26 programmes were labelled as 'promising'. That does not mean they are not effective but up to this day no high-quality research has been done (with before and after measurement, a control group, and follow-up results after at least six months). Five effective programmes is a poor result compared to the 'American menu' available for local settings. However, these 100 programmes is not the number that a small country such as the Netherlands should strive for. Our country invests a lot in general basic services such as, the public school system, social services and youth health care and also the general level of population health and welfare is quite high. But in the years to come, adding a substantial number of effective preventive interventions should be possible, such as programmes in different contexts, for different ages and dealing with different underlying risk factors. Our study *Veelbelovend en effectief* is limited to universal and selective prevention programmes because these are adequate at the community level. In the next two years we hope to broaden our selection including effective and promising interventions on indication. In addition, we aim to broaden the CtC concept with programmes addressed to attacking internalising problem behaviour, such as anxiety and depression.

IMPLEMENTATION AND INNOVATION

It is important to consider the organisation, planning, management and study of the implementation process. This is where research and practice meet. CtC can be characterised as a complex innovation strategy working with different components, the efforts continue over an extended period of time and many parties are involved (Campbell and others, 2000). But the implementation of this complex prevention strategy raises issues on three levels: the practical, political and the scientific. CtC is an American programme that was 'exported' to the Netherlands in a cultural context quite different from the American situation. As a result there has been some tension in the implementation process over the last four years. We give an example of these tensions for each of the three levels in the programme areas: practice, policy, and research.

At the practical level we have to work with an explicit, comprehensive and research based view of problem behaviour of children and young people and with solid facts. Looking at problems of children and young people in this way is new for people who are working in some neighbourhoods and cities. Although problem behaviour takes a long time to develop we have to tell them that its prevention may take even longer. We have developed different materials for school leaders, workers in the health service, youth workers and community workers to work with over an extended period of time. We train and support them so that they can build up a consistent and shared perspective together, which will organise their practical work. We inform them about what makes programmes effective and how they might improve their effectiveness and, finally, we encourage them to look back at their achievement after a certain period of time (Beumer and Vergeer, 2002). These are important preconditions for successful innovation on the practical level. They are incorporated into the original model as the Dutch CtC concept. But this was not achieved without some struggle. Many Dutch professionals are working with children and youth in local settings. Their workload is heavy and at this moment they are increasingly emphasising the autonomy of their work. There were many questions about their own professionalism, independence and knowledge (see for example, Tonkens, 2003).

We also had to consider the process of innovation at the political level. With *CtC* politicians are able to set the agenda, they can prioritise the programmes they would like to invest in for the coming years and they will evaluate their policies after a certain period of time. With CtC they can hopefully design more effective youth policies. At the political level we often encountered a lot of enthusiasm for this prevention concept, which seemed more rational than policies based on 'good intentions'. However, politicians often hesitate whether to implement a short-term strategy often no longer than the period for which they have been elected or a long-term strategy, which they feel would be necessary (It is really interesting but how can I sell this to my constituency'). On several occasions we came across this political dilemma.

Finally, there is a clear need m the Netherlands for a more scientific approach to preventive programmes. Knowledge on the prevalence of problem behaviour and effective programmes is scarce. The key question here is: how do we make sure that effective programmes are being used with Dutch families, schools and communities who need it? CtC as a strategy can be broken up into a number of phases. First, we had to prepare and adapt the theory of social development and underlying risk factors. We had to model the different components of intervention, adapt them to the Dutch context and try them out experimentally. We even examined the question how they might be improved. We had to do three things at the same time: build up knowledge, develop the programme and implement it. A process evaluation has now been completed over a period of four years but an actual comparative evaluation report was not possible before the end of the explorative phase. Products and components were still changing too much. At the time of writing this article (2005) we are ready to compare intervention sites with non-intervention sites in some new settings and to test the theory to reproduce it and control it as much as possible. When this impact evaluation is done we hope that in an international perspective long-term CtC interventions and implementation in different settings over extended periods of time may be possible.

MAIN OUTCOMES OF THE PROCESS EVALUATION

Research on the CtC intervention has been going on in the United States for a long period of time (Greenberg and others, 2001; Hawkins and others, 1995). It has also been well reported in the United Kingdom (Crow and others, 2004; France and Crow, 2001). In the Netherlands the evaluation research started four years ago (DSP Group, 2004b). CtC was implemented in four pilot areas (neighbourhoods) in the cities of Amsterdam, Arnhem, Rotterdam and Zwolle. This involved the following tasks:

- The *Decision Determinant Questionnaire* (DDQ) has been used to measure 'readiness' and commitment to CtC of the steering committee and the prevention team.
- In the first months of 2001 the student survey was implemented in a number of schools attended by students living in the pilot areas. The student survey was then repeated late in 2003 its results being compared with the results of the first student survey.
- All local project leaders and local pilot supervisors were interviewed several times during the implementation process of CtC.
- After completion of the prevention plans at the beginning of 2002 the members of the prevention teams were interviewed about their views on the implementation process of CtC.

Each area had its own experience of CTC and as we will see this helps build up a detailed picture of implementation learning.

Amsterdam-Noord

Amsterdam-Noord is a relatively poor urban multi-ethnic neighbourhood. The neighbourhood council had already installed a youth board including its main youth services. This board had introduced a number of prevention programmes in the community. Once CtC started much attention was given to the adjustment and improvement of existing programmes in terms of the major CtC goals. The general results of the student survey show that the situation of young people improved slightly between 2001 and 2003. The following problematic behaviours have been reduced: alcohol consumption, truancy and school dropout, and community disorganisation. There was T o some improvement in family management problems. The general conclusion is that the prevention team judged CtC positively and that continuation of the project has been recommended.

Arnhem

A important problem in Arnhem was the city authorities lack of support for CtC. Related this was the lack of financial means, which was the reason that large parts of the invention plan were not implemented. Nevertheless the following conclusions may be drawn based on the student survey it appears that the situation concerning problematic youth behaviour improved. The number of smoked cigarettes and the consumption of alcohol both decreased. Furthermore, school absenteeism decreased. All risk factors reduced slightly. However, since other intervention programmes have been interacting with CtC this means that the effect is not necessarily a result of CtC. However commitment with CtC was not very positive. The fact that CtC is not being continued in Arnhem confirms this conclusion.

Rotterdam

The main conclusion drawn from CtC in Rotterdam is that most prevention programmes do conform to CtC norms and that most organisations use CtC as their main guide to formulate their policies. A drawback of the Rotterdam survey is that some schools discontinued their collaboration with the student survey and so the results of the second student survey could not be used. The results of the DDQ indicate that although the overall commitment to CtC slightly decreased between 2001 and 2003 it is still acceptable. The city of Rotterdam has decided to continue CtC at least until 2006 and to implement CtC in other city neighbourhoods as well.

Zwolle

In the city of Zwolle most prevention programmes were already in place but have been adjusted in the selected site to incorporate them into CtC. This means that the same prevention programmes have been used in different ways in the city as a whole. The results of the student survey indicate that problem behaviours in general have not changed. Both risk factors and protective factors remained essentially as they were before the start of CtC except the indicator 'lack of neighbourhood organisation' grew worse. It Should be noted that the selected neighbourhood had hardly any real problems to begin with as opposed to the other pilot areas. The DDQ indicates that CtC is positively judged and that the prevention team is optimistic about future developments. Continuation and broadening of the project have been recommended. It should be recognised however that the interim evaluation of the programme performed DSP showed interesting results in the short term on information on the possibility of directing, administrating and controlling the operation of relevant organisations and service providers.

The DSP report drew several conclusions with respect to the number of different organisations involved in CtC and the share of social service providers, the extent of mutual collaboration and the degree of support. The study showed that it was considerably more difficult to involve residents and young people in the CtC process. In fact the descriptive output outcomes that were found in the Netherlands are very similar to what has been found in the United States (DSP, 2004) and the United Kingdom (France and Crow, 2001):

- An increase of the quality of planning and decision taking.
- More collaboration among service providers.
- More coordination in the input in programming of preventive interventions.
- A greater focus of preventive interventions on risk and protective factors.
- More use of demonstrated effective and promising approaches.
- More involvement of young people and other citizens in preventive interventions.

GENERAL CONCLUSIONS

Firstly, with respect to improving existing prevention programmes the implementation of the prevention plans in the four pilot areas went generally well. More difficult was the introduction of projects that were new in the pilot areas and where parts of the project were still not functioning. This was mostly due to opposition of existing agencies in the area to the introduction of projects they had not been running for example in Arnhem. Secondly, commitment to CtC as measured by the DDQ survey both at the start of the project in 2001 and at the end late in 2003 appears to show that prevention teams remain considerable in all four pilot areas. Furthermore, all pilots indicate that collaboration on the level of programme execution has increased since the introduction of CtC. Thirdly, the primary goal of CtC is to prevent adolescent problem behaviours by the reduction of risk factors and the reinforcement of protective factors. Whether this goal has been reached is measured by the student survey, which was also done at the start of the project in 2001 and at the end, late in 2003. Complicating factors are small sample sizes and the fact that some schools in Rotterdam decided to discontinue their collaboration. However, the following conclusions may be drawn: In Amsterdam and Rotterdam it appeared that the situation concerning risk factors and protective factors had improved and in Zwolle these factors got a little worse. However, since many prevention projects were already functioning before the introduction of CtC we do not know whether the positive changes that appear from the student survey are due to CtC or to other factors. Fourthly, besides a reduction of risk factors and a reinforcement of protective factors CtC yielded some other positive results. These are mainly related to the improvement of the processes introducing prevention policies in areas where prevention approaches had been low. Finally, the American CtC model had to be adapted to the Dutch culture and social institutions. Instruments such as the student survey and several instruction manuals have been translated into Dutch. When using these instruments there have been some observations on their content and wording. For example, one of the issues was that too little attention was paid to protective factors as compared to risk factors. However, all of these have been dealt with later on in the implementation process. At this moment the instruments are fully adapted to the Dutch situation. We can state that the adoption of the American CtC model took quite a long time but there has hardly been any resistance in the four pilot areas against the American characteristics of the model. During the implementation process the model of risk factors and protective factors became a mutual frame of reference. Moreover, the clear structure of the CtC process serves as an important guiding principle for participants

in the prevention teams. In the first stages of the implementation process CtC was considered a new prevention programme. Later on it became clear that CtC is far more than that; it is a strategy for planning prevention policies and interventions in neighbourhoods. The development of this vision has been of great significance in gaining support for CtC amongst members of the steering committees and local administrators.

FINAL REMARKS

CtC belongs to a new generation of prevention strategies in which research, effective programmes, innovation and evaluation are integrated. It has been introduced in very different local settings and in several countries. We are optimistic about the future of CtC in the Netherlands. More and more Dutch cities and neighbourhoods are interested in this strategy including the Dutch Antilles. As of last year and in a new phase CtC has been introduced in two more pilot cities (Leeuwarden and Almere). And from this year on the initiative runs in one of the provinces where it will be set out in seven more cities.

Our policy as the Dutch partner of CtC International in this process is trying to keep the middle way between quality-development and control of the fundamental strategy. We also want to expand the strategy to a larger number of cities and neighbourhoods. We feel that CtC will support the build-up of a preventive youth policy, which will increase the effectiveness of Dutch youth policy in general.

But there is still a lot of work to be done in the years to come. We need research so that people can look over our shoulders and assess our work. In addition we have to build up our comparative perspective so that we will be able to compare cities and regions over an extended period of time. We also need more effective programmes that may be used in local settings. And we have to expand our knowledge about innovation. An essential question is how many cities and neighbourhoods use this preventive strategy and tailor it to their local cultural context without losing the essential CtC characteristics? Finally, we need more insight into the effects of this prevention strategy. Next year will see the start of a complete evaluation study in a number of CtC sites. And hopefully in the years to come CtC is this rising tide which lifts all boats behind our dikes and dunes. This should be possible in our low land.

3. PREVENTION

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INTRODUCTION

Violence, delinquency and anti-social behaviour of children and youngsters are serious social problems. They have consequences for individuals as well as for society, now and in the future. In addition to psychosocial damage to victims, there may also be substantial financial consequences (Van Lier & Crijnen, 2003; Loeber & Farrington, 2001; Keating & Herzman, 1999). Violence, delinquency and anti-social behaviour are often linked to early disruptive behaviours. They are also related to other problem behaviours in a later developmental phase, such as substance abuse, dropping out of school, teen pregnancy and adult mental health problems (Rutter & Taylor, 2004; Loeber et al, 2001; Kipke et al., 1999; Dryfoos, 1998; Rutter et al., 1998). In this respect, intuitively, efforts to prevent early delinquency cannot be wrong.

In the Netherlands, the appeal of preventive efforts has led to a flourishing practice of projects and programmes. In the recent years, however, a number of critical questions have been put forward. Are these preventive efforts really effective? Can these interventions be brought into action at the right place, the right moment and as early as possible? Can people and institutions really use them? Thus far, many of these questions remain to be answered. Nevertheless, in the Netherlands as elsewhere, in the last five years a new practice has risen of critical evaluating existing prevention programmes and searching for and implementing effective, 'evidence-based' interventions. This practice has shown that in the Netherlands there is a long way to go towards identifying and implementing early, usable and effective prevention programmes.

In the 1990s, youth delinquency - and in particular violence - had become a social problem of the first order (Van der Laan, 2005). This phenomenon gained much attention in the media, and it became a serious political topic on national and local levels. The result was that on the one hand, the Netherlands followed the course of the United States and England by introducing the 'culture of control' (Garland, 2001): there was an increasing emphasis on repression of delinquency on different levels. More violent and delinquent youngsters were locked up or placed in special treatment facilities. On the other hand, pleas for prevention policy and programmes are growing strongly. However, the theoretical foundations for this preventive path were still limited. Moreover, the empirical research on the validity of these foundations, and the effectiveness of the programmes was still very scarce. Prevention policy was mostly based on intuition rather than a more scientific approach (Junger-Tas, 2001).

At the same time, our knowledge about the development of these problem behaviours had increased enormously. Research revealed the risk factors in early development, and shed light on the biological, familial and social influences in the developmental pathways of these youngsters (Rutter & Taylor, 2004; Junger-Tas 2001; Elliott & Tolan, 1999; Rutter et al. 1998; Loeber & Farrington, 1998; Tremblay & Craig 1995). It became clear that these developmental pathways can best be influenced at an early stage, when behavioural patterns are still fluid and have not become stable yet. In addition, studies showed that some preventive interventions are working better than others, and yielded increasing insight into 'what works' in the prevention of delinquency (Elliott & Tolan, 1999; Dryfoos, 1998; 1990; Durlak, 1997; Elliott, 1997; Sherman et al., 1996). These studies, however, came mainly from abroad and the findings were only marginally adopted in the ever-growing number of Dutch prevention projects.

As we will discuss later, studies show that in the 1980s and 1990s a wide range of prevention programmes have been developed of which only a very few have an explicit, up-to-date theoretical rationale (Verdurmen et al., 2003; Hermanns & Vergeer, 2002). Moreover, almost none of these programmes have been adequately evaluated for effectiveness. This is a dramatic finding in view of the growing problem of youth delinquency in Dutch society. It calls for a drastic renovation of both the prevention and evaluation practice in this country. The first step in this process is to examine the theoretical concepts that should be at the foundation of this practice. The second is to learn as much as possible from the few programmes that have a sound rationale and that have a proven success record.

A THEORETICAL FRAMEWORK FOR PREVENTION

The Developmental Perspective. The prevention of anti-social behaviour at an early stage is made possible by current knowledge of the behavioural development of these behaviours from childhood onward. The knowledge of the factors that cause, maintain, or aggravate behaviours comes from epidemiological and longitudinal research (Jonkman et al., 2005; US Public Health Service, 2001; Catalano & Hawkins, 1996). The results of this research have substantially improved our knowledge. It has become clear that a successful prevention strategy can be anchored in the early phases of the developmental pathways that lead to youth delinquency (see also Chapters 5-9, this volume). One of the key elements of this kind of developmental prevention is that the programme is aimed at suppressing or eliminating risk factors that increase the probability of children becoming tomorrow's delinquents. The intervention, then, can be considered as a promotive factor that serves as a counterbalance to compensate for stable risk factors. For example, children from low-income families with both parents working are offered cheap facilities for after school activities that are supervised by adults. The programme can also change dynamic risk factors into protective factors. For example, a programme may encourage teachers and parents, who use negative disciplinary strategies (such as giving warnings, uttering threats, and administering punishment) to use more positive strategies (such as ignoring negative behaviour and praising children for their positive behaviour).

Our theoretical framework of prevention programmes follows the example set by Van Yperen and Boendermaker (Chapter 12, this volume):

- The first issue concerns which mediators are influenced by a particular intervention. In line with the developmental approach, these mediators extend to the different developmental stages of the child. A preventive programme is likely to be effective if: (a) the programme addresses true risk factors that are causally related to later delinquent behaviour, and (b) the programme enhances protective factors that buffer the presence of risk factors.
- The second issue concerns how these mediators are addressed in interventions. This calls for knowledge on how and when the mechanisms and factors that are in play can be changed.

We will now discuss these two aspects of prevention.

Which Risk Factors and Mechanisms? It is common to consider these factors and mechanisms in relation to four actors in the development of children: the child itself, the family, significant others and the broader environment (community, state). Constitutional and physiological factors and the genetic make-up of the child can act as risk factors and mechanisms which influence children's development of externalizing behaviour (see Chapter 5, this volume). For example, the use of drugs, cigarettes and alcohol by the mother during pregnancy, and birth problems may affect the child's brain development, which in turn is associated with higher risks of later child behavioural problems (Van Lier, 2002; Loeber & Farrington, 2001; Jessor, 1998; Moffitt, 1997). Furthermore, we know that children born with a difficult temperament often show a lack of self-control in different social settings and react with anger and impulsivity. This in turn leads to a higher risk of later antisocial and delinquent behaviour (Moffitt, 1997). In addition, young children who show early behavioural, cognitive and school problems have a higher likelihood to show later antisocial and delinquent behaviour.

As to the family, lack of communication, poor bonding, lack of love and trust, but also frequent tensions and quarrels are known to have a negative impact on children's development (Furstenberg et al., 1999; Damon, 1997; see also Chapter 6, this volume). Also relevant are internal management qualities of parents (how they run the family life) and their external management qualities (how they control and follow what their children do outside the home; see Furstenberg et al., 1999). The latter become increasingly important when youngsters begin to expand their activities outside the home.

The quality of the school environment is another important factor (Greenberg et al., 2003). Failure to recognize and deal early with children who show behavioural and school problems may have far reaching consequences. These children have a higher likelihood of later anti-social behaviour. They may also be a risk for other children in the school, as they may act as a negative role model for peers, contribute to a negative social climate in the school and persuade children to join in their anti-social activities (see Chapter 7, this volume). In other words, a lack of positive classroom management competencies by the teacher, and the absence of effective programmes to prevent or diminish beginning behavioural or school problems, poses a high risk for both the children with, and without these problems.

The influence of peers is also important in the development of anti-social behaviour. Peers who are engaged in delinquency can influence the behaviour of youngsters in a negative way. Also membership of a gang can do this (Loeber & Farrington, 1998).

As to the broader social context of the community, lack of social control, an economically disadvantaged neighbourhood with a high prevalence of delinquency, drug abuse and other anti-social behaviour, are an

important threat to the development of the children living in these environments (Wilson, 1987). That these risks are linked to specific neighbourhoods does not mean that this is a local problem only. Comparative studies show that the there can be a higher prevalence of violence, delinquency and antisocial behaviour in one country and not in another. This may be the result of historical, political, and cultural factors (WHO, 2002; Garland, 2001; McCord, 1997).

Since the risk factors in the development of antisocial behaviour can be found in the prenatal period, in the child, in the familial environment, in the school, and in the community, the question of how to intervene seems simple. One should have a broad set of programmes in each of these domains, in order to optimize the conditions under which children grow up. One could also argue that these interventions should be targeted on as many people and situations as possible. However, things are not as easy as they appear. A plethora of preventive interventions may be redundant, far too intrusive, and the results may be disappointing in view of the enormous costs involved. Instead, programmes should be well targeted, and if possible, be highly selective so that resources are used with optimal effect. In other words, preventive activities have to be performed at the right place, at the right moment and with the right tools.

Current knowledge about developmental pathways, and risk and protective factors allows us to pinpoint four life-stages in the developmental trajectories of children and adolescents that can serve as anchor points for preventive interventions:

- The pre- and perinatal period (-9 months – + 2 months). Prevention interventions in this period should offer support to parents during pregnancy, stimulating them to refrain from the use of alcohol, cigarettes and drugs, and helping them to prepare on becoming parents.

- The preschool period (0-4 years). Prevention interventions in this period should support parents with information and training programmes on healthy lifestyles, positive parenting, adequate family communication, and having a supportive social network (Damon, 1990).

- The elementary school period (5-11 years). Prevention interventions in this period should continue to support the parents and teach them to control the external environment of the child, by supporting and training children with difficult temperaments to function well, and by educating and training teachers in adequate classroom management (Damon, 1997; Kellam et al., 1994).
- Puberty and the adolescent period (12-18 years). Prevention activities for this group should continue to support the parents, youngsters and teachers, and also involve the community in practising social control

and offering the youngsters substantial chances to participate in social, cultural, and economic activities (Sampson, Raudenbusch & Earl, 1997). Societies with few social differences between groups and in which groups are not discriminated and isolated show less child problem behaviour (Keating & Herzman, 1999; McCord, 1997). Thus, such societies seem to provide a protective environment against delinquent and antisocial behaviour.

How: The Working Ingredients of Prevention. The next question is: how are the mechanisms and factors addressed? Four types of working ingredients can be distinguished here:

- Activities that address the children directly. A well known example is the scheduling of violent television movies late in the evening in order to limit the exposure of young children to models of antisocial behaviour. Another example is the use of school programmes to teach children and adolescents how to cope with provocative situations in a pro-social manner.

- Supporting parents and families can be a very effective way of preventing anti-social behaviour of children and youngsters. Parenting and family interventions to prevent these problems are based on theoretical and empirical evidence (Kumpfer & Alvarado, 2003). Early family interventions are, for example, home visitation (programmatic support of parents by nurses or volunteers) and early educational enrichment (programmatic stimulation of family to improve educational chances of children later on). Other kinds of interventions include family therapy (preventive programmes for parents or families with risks) and family skills training (behavioural skills training for parents, their children and the family together).

- Activities directed at significant others in the child's environment with particular focus on peers and teachers in the school. Peers can influence each other strongly in a positive sense (see Chapter 7, this volume). An example is tutoring programmes in which youngsters at risk are tutored by other, social and emotional positive youngsters. Teacher programmes are often orientated at academic skills, but also on social skills and classroom management (Ferrer-Wreder et al., 2004; Greenberg et al., 2003).

- Activities addressing the school, neighbourhood and the state. The influence of the social context is gaining increasing interest as a factor in supporting the health and development of children and adolescents. There is growing interest in environmental change programs reaching schools and other community settings targeting broader population groups. (Ferrer-Wreder et al., 2004; Wandersman & Florin, 2003).

Mrazek & Haggerty (1994) and Offord et al. (1999) suggested another way of making a distinction between different ways in which prevention programmes address risk factors and mechanisms:

- Universal interventions are those interventions targeted at whole populations, without any selection f groups characterized by specific risk factors. They consist, for example, of simple information campaigns, or a standard training of professionals that work in institutions that support children and parents, teachers and youth workers.

- Targeted and clinical interventions focus on groups characterized by specific risk factors, e.g. young mothers in low-income families without an adequate social network. These programmes usually work with narrow-targeted activities such as informing or training the children and/or parents.

Summary: The Developmental and Dimensional Model. In summary, the developmental perspective on antisocial and delinquent child behaviour and the different dimensions that characterize prevention efforts constitute a framework that can be used to analyse the available programmes (Table 1). The key question is: how to fill this matrix with a selection of activities that are effective? To answer this question, we need a detailed understanding of the course of development, the factors that lead to different directions and turning points in pathways, and ways that these factors can be influenced (Elliott & Tolan, 1999; Tolan & Gorman-Smith, 1998). The current state of knowledge permits us to fill in this matrix with many different options. There is a growing body of evidence of 'what works,' which has contributed to a better understanding of the prevention of anti-social behaviour in children before age twelve.

Table 1. *Aspects to characterize prevention programmes*

What (Mediators)		How	
Actors	Developmental stage	Actors	Broadness target group
Child - Constitutional and physiological risk factors - Difficult temperament Early behavioural, cognitive and scholastic problems	Pre-/perinatal (-9-2 months) - Parents refrain from drugs, alcohol, smoking - Parents prepare on their role	Activities directed at the child, e.g. - Limiting exposure to risk factors - Educating children.	Universal: targeted at whole populations, e.g. - Information campaigns - Standard training of professionals
Family - Internal family management (lack of communication, bonding, love and trust; regular tensions and quarrels) - External family management (lack of control over the activities of the child outside the home)	Preschool (0-4 years) - Healthy lifestyle family - Positive parenting - Adequate family communication - Supportive social network	Activities directed at the family, e.g. - Parent or family support - Family skills training	Selective: targeted at high risk groups, e.g. - Informing young mothers with low income - Training professionals that deal frequently with these mothers
Significant others - Inadequacy of dealing with behavioural and scholastic problems - Lack of positive classroom management - Peer delinquency - Gang membership	Elementary school (5-11 years) - Parental control over external environment - Child's control over his own functioning - Adequate classroom management	Activities directed at significant others (peers, teachers), e.g. - Peer-to-peer programmes - Classroom management programmes	Indicative: targeted at groups or individuals with identified risk factors or with beginning problems, e.g. - Informing young mothers with low income and drug use - Training professionals that support these mothers in adequate care of the child
Community, school, state - Lack of social control - Economically disadvantaged neighbourhood - Historical, political, and cultural factors	Puberty / adolescent (12-18 years) - Parental and social control - Child's chance to participate in social, cultural and economic ctivities	Activities directed at the community, school, state, e.g. - School change programmes - Community intervention programmes	

PREVENTIVE INTERVENTIONS

What Works: International Reviews. There are several reviews and meta-analyses that have shed light on the effectiveness of prevention programmes. These studies have helped to identify 'evidence-based' interventions. Although there is no explicit consensus on the number and type of studies, and the sample size required for 'evidence-based' status, the main characteristics of these programmes is that a number of studies with (quasi) experimental design have shown positive results. A further analysis of the 'evidence-based' interventions helps us to understand what risk factors can be addressed effectively at a particular moment, using a particular target group. This has led to the formulation of the famous 'What works' principles in crime prevention (Andrews et al., 1990). However, the literature on the effectiveness of programmes aimed at the prevention of the first offence is scarce in the Netherlands. Elsewhere, however, we have seen a shift towards a more scientific approach to prevention and improved knowledge about effective and promising interventions for children and youngsters.

Two pioneering reviews are worth mentioning here. Sherman and colleagues in ´Preventing crime: what works, what doesn't, what's promising´ (1996) reviewed the quality of hundreds of programmes on the prevention of violence and criminality They looked for factors underlying criminality and the effects of different preventive programmes. The study is a critical assessment of the preventive supply, based on a growing body of knowledge, of the effectiveness of a wide range of crime prevention strategies, operated at the local level, with and without the support of federal funds. The author distinguished between four different types of programmes.

- Programmes that work: those programmes that are known to prevent criminality or reduce risk factors in the social context for which they are set up. The results are transferable to comparable settings and at different intervals.
- Programmes that don't work: these are programmes that have shown to be ineffective.
- Promising programmes: there is not enough data yet to make conclusive generalisations about the efficacy of the programmes.
- Other programmes of which we know a little and cannot be placed in any of the above categories.

Sherman and colleagues' (1996) review can be seen as guide on what works to prevent crime. The authors argue that until more investments are made by nations towards the evaluation of preventive interventions, we will continue to use preventive programmes without known efficacy. There needs to be a better balance between the funding of programmes together with their evaluation, and in the development of scientifically recognized standards and methodologies. At present, following the authors, most funding is devoted to policing and prisons.In addition, family, school and community environments can be more effective in the prevention of delinquency and violence through knowledge gained by funding substantive effective research.

The second major review has been undertaken by the Centre for the Study and Prevention of Violence, which evaluated hundreds of prevention programmes for violence and delinquency (Elliot, 1997). The authors selected eleven blueprint programmes based on clear and high standards of effectiveness. The three criteria for these model programmes are:

- Evidence of deterrent effect with a strong research design: The evaluation studies used a experimental or quasi-experimental design with matched groups. This category of interventions has both a good research design and a large sample size.
- Sustained effects: where post treatment-effects are still present after one year.
- Multiple site replications: where programmes have been implemented in more than one setting and with diverse populations.

Although much is known about the criteria for model programmes, far less is known about the implementation problems of the programmes. For that reason, current research efforts focus on what makes programmes a success and how to identify factors that enhance implementation of effective programs (for example, site selection, training, technical assistance, fidelity and sustainability (Elliott and Mihalic, 2004)).

PREVENTION IN THE NETHERLANDS

In the Netherlands there is a broad spectrum of programmes, projects, and methods for the prevention of problem behaviour in young children. However, this field is characterized by a lack of transparency. Recent studies have offered insight in the programmes that are used in (child) public health, mental health and youth care (Prinsen & Ligtermoet, 2006; Buskop-Kobussen & Cox, 2003; Verdurmen et al., 2003; Brezinka, 2002). In reviewing this field, Verdurmen and colleagues (2003) concluded that evaluation research is scarce, the methodology of effectiveness assessment is generally poor, costs of the intervention and treatment integrity are often ignored, and the outcomes are mixed. In addition, Ince and colleagues (2005) reviewed the Dutch prevention programmes aimed at crime prevention and supporting families, school and communities. They labelled a programme as promising if there is a clear definition and description of:

- The target group (youngsters of 0-18 years old that are not showing signs of problem behaviour yet, and/ or their social context);
- The target (reduction of risk factors, strengthening protective factors);
- The method (a clear description that makes a replication in other settings possible);
- The intervention theory (explaining why this method is effective for this target in this target group).

The additional criterion for effective programmes is:

- Positive results of effectiveness research (with both internal validity and external validity).

Ince and colleagues (2005) concluded that there are five effective programmes in the Netherlands (Opstap, Overstap, Taakspel, Levensvaardigheden and Gezonde School). In addition, there are 26 promising programmes (those without the fifth criterion). Most of the preventive programmes in the Netherlands, however, are neither effective nor promising.

Hermanns, Öry and Schrijvers (2005) also undertook a review of Dutch prevention programmes and concluded that only six interventions were effective or probably effective in the early prevention of antisocial behaviour. The latter category includes programmes that are implemented in the Netherlands because research

from abroad has shown that these interventions are highly effective, although this is not yet validated by Dutch research. The six programmes are the Triple P, a programme on positive parenting (Sanders et al., 2002), a Dutch version of The Incredible Years Program (Webster-Stratton & Mihalic, 2001), VoorZorg based on the Nurse Family Partnership Program (Olds, 1998), Taakspel based on the Good Behaviour Game (Dolan et al., 1993; Barrish et al., 1969) and Kaleidoscoop/Perry Preschool (Schweinhart et al., 2005), The effective interventions done abroad, have not yet been implemented on a nationwide basis, or evaluated in the Netherlands. However, this situation is bound to change in the near future. Also, Hermanns et al. (2005) identified promising Dutch interventions, meeting quality standards, but lacking evaluations. Examples are, interventions such as the Healthy School Program and the Opvoeden Zo parenting training course (Prinsen & Ligtermoet, 2006; Kooijman & Wolzak, 2004). The state of the art with regard to the other programmes, however, is qualified as one of 'thousand flowers flourishing ….'.

In summary, there is evidence on what works in crime prevention. This body of evidence is growing rapidly, and a small set of programmes has gained the status of 'evidence-based' intervention. A problem is that our knowledge of 'what works' is dominated by the programmes that have been evaluated for their effectiveness. In other words, we are still ignorant of those characteristics of promising programmes that may work, but that have not yet been evaluated. In the short term, the situation in the prevention field in the Netherlands calls for a pragmatic approach to prevent violence, delinquency and antisocial behaviour. We have to learn as much as possible from the 'evidence-based' programs, and at the same time increase the efforts to evaluate the promising programs. In the Netherlands, this process is beginning to take shape. Therefore, we need to take a closer look at the effective and promising programmes.

EFFECTIVE AND PROMISING PREVENTION PROGRAMMES 0-12 IN THE NETHERLANDS

Our review of prevention programmes in the Netherlands is mainly based on the two Dutch studies mentioned earlier: Ince et al. (2005) and Hermanns et al. (2005). Most of the programmes described in these studies focus on one or more of three risk factors: the persistence of early behavioural problems, academic failure, and family management problems. In addition, there is a group of programmes that focus on other risk factors. Table 2 offers an overview of the 29 prevention programmes known in the Netherlands. Nine of them proved to be effective abroad and/or in the Netherlands. These 9 programmes have been implemented in the Netherlands or are in a developing phase in this country: Opstap, Overstap, Taakspel, Triple P, Voorzorg, Incredible Years, Kaleidoscoop, and Pad and Match. They are currently used – or will be used in the near future - on a broad scale in Dutch cities and organisations. Only three of these programmes have been thoroughly tested for effectiveness in the Netherlands using (quasi) experimental designs. The other 20 programmes shown in Table 2 are promising because they have a sound rationale, although empirical evidence for their effectiveness is still lacking. We will now describe in more detail, the programmes that have been shown to be effective in the Netherlands or abroad.

Prevention of school problems: Opstap. Opstap is a preventive programme for children aged four to six years. It has been developed to improve the educational chances for children in disadvantaged neighbourhoods. The central risk factor here is academic failure. As mentioned, young children who show early cognitive and scholastic problems have a greater chance to develop problem behaviour later on in their lives. Opstap aims to stimulate the cognitive and language development of children, their active learning-attitude and the pedagogical interaction in the family. This preventive family programme is for children in group 1 (or nearly group 1) of the primary school. The parents of these children tend to have median or a low level of education. Opstap is a structured curriculum of play and learning activities. Parents are engaging in these activities together with their children around six development areas for at least five times a week. In addition, parents are guided by a contact person individually and in groups. Opstap is mostly implemented regionally by welfare agencies. Researches of the University of Utrecht (Van Tuijl, 2006; 2002, 2001) evaluated Opstap. Children from Moroccan and Turkish families who participated in the programme were compared with children who did not participate in the programme. The

children were assessed at the start (group 1), after ending of the programme (group 3) and two years later (group 5). In addition, the families were observed at home, and data was collected on school achievement, passing grades, demographic facts of the family, and aspects of programme implementation. The research showed some significant differences between the experimental and control group on school achievement, passing grades and parental attitudes. Although there were some differences within the experimental group, there were general positive programme effects in the long term.

Prevention of persistent behavioural problems: Taakspel. Taakspel is aimed at the prevention of disruptive behaviour of children, the promotion of task-oriented behaviour and a positive educational climate in the classroom. The aim is to decrease early disruptive behaviour (Attention Deficit/Hyperactivity Problems, Oppositional Defiant Problems and Conduct Problems) and enhance positieve behaviour in an early phase, class 4 till 8 from primary school (age 8-12 years). The underlying factor of risk here is 'early and persistent behaviour' Taakspel, based on the American 'Good Behaviour game', is group-orientated and consists of regular lessons in which children learn through play how to better follow rules in the classroom. After a period of orientation the teacher divides the class into several teams. Team players stimulate each other to follow the rules and thereby become eligible for a reward. Taakspel can focus on a few or on many rules, it can be played for different lengths of time, and the rewards can be given immediately or sometimes As a result of the intervention, teachers learn to better pay attention to positive child behaviours. In addition, the children receive attention when they show positive behaviour. Taakspel has been developed for children of group 4 and 5 of the primary schools (age 8-10 years) and serves as a universal prevention programme for the whole class.

Taakspel has been evaluated in a quasi-experimental design with improvement on task orientation and rule violation of children. The behaviour of the children in the experimental group improved, while the behaviour of children in the control group became worse. The programme has also been evaluated through follow-up studies, showing that children with moderate levels of problem behaviour responded best to the intervention. Children with serious behaviour problems responded partly to the intervention. This is in keeping with the goal of the programme: intervention of early behavioural problems. None of the evaluation studies showed zero or negative results. American evaluations also have shown positive results in large-scale epidemiological studies (Van Lier, 2002; Barrish et al., 1969).

Prevention of family problems: Triple P. Triple P stands for Positive Parenting Program, which is based on an Australian intervention aimed at supporting parenting skills for parents of children and adolescents from birth to age 16 (Sanders et al., 2002), It is the only multi-level system of parenting and family support specifically developed as a population level strategy and a public health approach to promote children's wellbeing (Sanders

et al., 2005). Triple P aims to prevent severe behavioural, emotional and developmental problems in children by enhancing the knowledge, skills and confidence of parents. It incorporates five levels of intervention on a tiered continuum of increasing strength (from the universal level 1 to the enhanced level 5). Interventions target everyday social contexts that influence parents including the mass media, primary health care services, preschool, childcare and school systems, religious organisations, and the political system. Parents learn to use ongoing interaction in the family to support their children emotionally and to stimulate their social competencies and problem solving skills. This approach reinforces the positive forces in the family and empowers the parenting skills of the parents as well as it counteracts risk factors. Triple P applies principles and strategies derived from social learning theory to increase parents' self-efficacy in raising their children. It targets five core-parenting principles: Creating a safe engaging environment for children; creating a positive learning environment; assertive discipline; reasonable expectations; and, looking after oneself as a parent. Parents in turn learn how to encourage children to develop a variety of social and emotional skills to succeed at school and in relationships. Children learn how to communicate and get on with others, manage their feelings, become independent and solve problems for themselves. All together, the different kinds of family and parenting supports constitute an integrated system of interventions that is fully responding to the needs of parents for information and parenting support. In that sense, Triple P is cost effective, which means that parents receive the proper level of support. Some parents are satisfied by getting information, while others need a more intensive support in order to become empowered. One of the characteristics of Triple P is its flexibility. It varies by the age of the children and it can be offered in different ways: individually or group wise, digitally or by book and there is also a self-help programme. The different levels are: a mass media information campaign, information and advice about behaviour and development of children, support for serious behaviour problems, and family interventions when serious behaviour problems occur. The Dutch national institute on mental health, the Trimbos Institute, in cooperation with the universities of Nijmegen and Leiden, has undertaken a controlled group design study during the experimental phase of the programme implementation in 2005 and 2006. Results supported the outcomes of research in Australia where Triple P has been researched by 12 RCTs (Randomised Control Trials). The conclusion is that Triple P can be seen as an effective programme (De Graaf et al., 2007; Hermanns et al., 2005). Significant effects were found especially at the intervention levels 2, 3 en 4 (Bor et al., in press). The effects are positive and were maintained over six months after the conclusion of the programme. Thus, evaluations using different designs at various intervals and different cultures showed that Triple P is effective in the prevention of behaviour problems of children and the participation of parents in educating their children (Hermanns et al., 2005; Sanders et al., 2002; Sultana et al., 2000).

Table 2. *An overview of Prevention programmes in the Netherlands.*

Programme	Risk factors addressed	Age (timing)	Activities (ingredients)	Effec-tive-ness*
School problems				
Opstap	Academic failure	0-6 years	Selective activities in school	NL
Overstap	Academic failure	6-8 years	Selective activities in school	NL
Kaleidoscoop	Academic failure	2-6 years	Preschools/schools/ universal/selective	Abroad
Instapje	Academic failure	0-2 years	Families/selective	?
Boekenpret	Academic failure	0-6 years	Schools/selective	?
Bij de Hand	Academic failure	1-4 years	Families/selective	?
Opstapje	Academic failure	2-4 years	Families/selective	?
Piramide	Academic failure	2-6 years	Schools/selective	?
Startblokken en Basisontwikkeling	Academic failure	2-8 years	Schools/selective	?
Fantasia	Academic failure	4-12 years	Schools/universal	?
Rugzak	Academic failure	4-6 years	Families/selective	?
Stap door!	Academic failure	7-8 year	Schools/selective	?
Persistence of behaviour problems				
Taakspel	Early and persistent anti-social behaviour	8-10 years	Schools/universal	NL
Match (Big brothers, big sisters)	Early and persistent anti-social behaviour, Early initiation of problem behaviour; Rebelliousness	4-14 years	Schools/friends/ selective	Abroad
Pad	Early and persistent anti-social behaviour, Friends with problem behaviour; Positive attitude towards problem behaviour	6-12 years	Schools/universal	Abroad
Leefstijl	Early and persistent anti-social behaviour; Friends with problem behaviour; Positive attitude towards problem behaviour; Early initiation of problem behaviour	4-18 years	Schools/universal	?
Marietje Kessels	Positive attitude towards problem behaviour; Friends with problem behaviour	10-12 years	Schools/universal	?
Schooladoptieproject/Doe effe normal	Positive attitude towards problem behaviour; Friends with problem behaviour; Early initiation of problem behaviour	10-12 years	Schools/universal	?
Psycho-educatieve gezinsinterventie KOPP	History of problem behaviour; Constitutional factors	4-14 years	Families/selective	?
Kopp-preventieprojecten	History of problem behaviour; Constitutional factors	8-16 years	Peers/selective	?

Family problems				
Triple P	Family management problems	0-16 years	Families and communities; Universal/ selective and indicated	Abroad
Moeders informeren Moeders	Family management problems; constitutional factors	0-2 years	Families/selective	?
Home-Start	Family management problems; Family conflicts	0-6 years	Families/selective	?
Opvoeden: Zo	Family management problems; Family conflicts	3-12 years	Families/universal	?
Mixed				
Drukke kinderen	Family management problems; Family conflicts; Early and persistent anti-social behaviour; Constitutional factors	4-12 years	Families/selective	?
Voorzorg	Family management problems; History of family problem behaviour; Family conflicts	-0-2,5 years	Families/selective	Abroad
Incredible years	Family management problems; Parenting style; History of problem behaviour; early and persistent anti-social behaviour; Lack of commitment towards schools	3-9 years	Families/schools/ indicated	Abroad
Thuis op straat	Mobility, Lack of bonding and disorganisation in the community	2-19 years	Community/universal	?
Waarden en normen in jeugdwerk	Norms that invoke problem behaviour; Lack of bonding and disorganisation of the community	0-18 years	Community/universal	?

Note. *Effectiveness: NL = One or more (quasi) experimental studies in the Netherlands showed positive outcomes; Abroad = One or more (quasi) experimental studies outside the Netherlands showed positive outcomes; ? = No (quasi) experimental studies.*

CONCLUSION

We described the principles of effective prevention of anti-social child behaviour from a developmental perspective.. We examined the changing Dutch situation by sketching the first steps of renovation of both the prevention and evaluation practice in the Netherlands. . Preventing anti-social behaviour is not new and research on this topic has had a long history. We see changes in prevention practices as an answer towards the growing problem of youth delinquency in Dutch society. New and interesting programmes have been initiated, firstly abroad but more recently in the Netherlands based on the principle of 'what works'. These initiatives focused on programme results and programme efficiency. .

We presented a developmental model for prevention which can be used to examine the extent to which prevention is practiced and to set the agenda for the future prevention efforts. Important questions for prevention include, the underlying risk factors (where), the timing (when), and the targeting (how). Seen from this developmental perspective, we presented 9 effective and probably effective Dutch programmes: Opstap, Overstap, Taakspel, Triple P, Voorzorg, Incredible Years, Kaleidoscoop, Pad and Match. In addition , there are many promising programmes that have a good underlying theory and a clear methodology.

In our review of the Dutch prevention field, we noted that there are effective or probably effective programmes for children. They have been researched elsewhere, and sometimes in the Netherlands. For other programmes, Dutch experimental research is planned in the near future. At the present, we can note that several Dutch programmes are promising, but evaluation research needs to be set up in the near future. We can also see that most of the effective and promising programmes are geared towards families and schools. There are few programmes for peers and communities. Thus, family management problems and academic failure are covered where as many other risk factors are not.

There are more promising and effective preventive programmes in the Netherlands than is often assumed. Hopefully in the near future we can further expand the number of preventive programmes and strengthen the positive social development of children. For this investment to continue, it is important that we can indicate

which programmes are effective and which ones are not. It is important that this knowledge is accessible to people who work with children on a daily basis as well as to organisations who are funding this important work. It is also important that we not only know what works but also what are the conditions under which effective programmes work well. Questions about implementation and dissemination of effective programmes on a broader scale are sometimes neglected and do not receive the scientific interest they need. The prevention of anti-social child behaviour is important and needs national and local investments. Our children and our society deserve this support, now and for the future.

4. COMMUNITIES THAT CARE: CORE ELEMENTS AND CONTEXT. RESEARCH OF IMPLEMENTATION IN TWO COUNTRIES

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ABSTRACT

This article describes the degree to which implementation of the Communities That Care (CTC) prevention operating system was reached in twenty-two communities in two countries: the United States (twelve communities) and the Netherlands (ten communities). Core elements of CTC and results from two implementation measures conducted in both countries are reported here. Similarities and differences of the implementation process are discussed.

INTRODUCTION

During the last two decades much progress has been made in identifying effective programs and policies for prevention of adolescent alcohol and drug use, violence and delinquency, and other problem behaviors (Elliott, 1997; Sherman et al., 19 9 7; Substance Abuse and Mental Health Services Administration, 2002). Despite these advances, less is known about the implementation of these programs when they are conducted in different social contexts and used by different people and organizations.

Owing to differing social or cultural contexts, programs may be delivered without full coverage of the program content or without trained program leaders. Major and minor changes to programs' core content and methods of delivery should be documented when programs are researched, developed, and replicated (Pentz, 2004). Some studies have examined the adaptation of preventive programs and policies that have been imported to other countries (Ferrer-Wreder, Stattin, Lorente, &Tubman, 2004). The study of cross-national implementation of preventive programs is necessary to identify whether or not differences in national policies, cultures, and contexts lead to major changes during implementation, and to describe the types of adaptations that may occur. Cultural differences are often used as justification for changes in programs, but making such changes could undermine the effectiveness of programs. Thus, it is important to identify the core elements of a program before implementation in different countries, as well as to identify changes in implementation across countries. This article compares the cross-national implementation process of Communities That Care, a community-based strategie prevention operating system, in two countries, the United States (US) and the Netherlands (NL).

The Communities That Care (CTC) operating system is a community-based strategic approach to prevent adolescent behavioural problems (Hawkins, Catalano, & Arthur, 2002), theoretically guided by the social development model (Catalano & Hawkins, 1996; Hawkins & Weis, 1985). The basis of this strategic, community-specific process is a public health approach to prevention designed to increase communication, collaboration, and ownership among community members and service providers (Hawkins et al, 2002; Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001). In 1988 the Social Development Research Group (SDRG) at the University of Washington began to apply prevention science findings regarding risk and protective factors and effective interven-

tions to the organization of strategic community prevention services systems. Training materials were developed to communicate this framework for strategic prevention services planning to community leaders and prevention providers, and an intervention strategy was designed to mobilize communities to adopt this framework. An early version of the Communities That Care (CTC) strategy was field tested in twenty-five communities in Washington State. Community coalitions were trained to use a risk- and protection-focused approach to plan and implement strategic prevention programs targeting prioritized risk and protective factors (Harachi, Hawkins, Haggerty, & Catalano, 1992). The CTC strategy was revised and field tested in thirty-six sites in the state of Oregon. This test showed that using CTC, risk- and protection-focused prevention could be implemented and maintained by communities over an extended period of time. Twenty-one (60%) of the communities implemented risk-focused prevention programs within one year after receiving training in the planning process, though they had received no funding for implementation (Harachi et al,, 1992).

The CTC process involves five specific phases conducted by community boards (for a full description of the CTC process, see Hawkins et al., 2002; Quinby et al., 2008). Each community board is appointed by key community leaders (e.g., police chiefs, school superintendents, and mayors in the US; and directors and board members of institutions, and city council members in the NL). In Phase 1, key leaders are mobilized to assess their communities' readiness to adopt the CTC approach to prevention. In Phase 2, they form a prevention board whose members receive a series of training sessions describing the public health model, prevention science, and the advantages of using a data-driven decision-making process to guide prevention activities. During Phase 3, the community boards use community-specific epidemiological data to assess levels of risk and protection and conduct a resource assessment of prevention programs already occur-ring in the community. They then assess the epidemiology of problem behaviors in their community, identify the prevalence of risk and protective factors in the community that influence the likelihood of these outcomes, and prioritize which risk and protective factors should be addressed and which outcomes are of most concern. The community board then selects empirically supported prevention programs to address the prioritized risk factors and outcomes during Phase 4. During Phase 5, the board supports the implementation of these programs, evaluates their effectiveness in the community, and revises their plans as necessary.

Communities That Care provides communities with well-designed curriculum materials, trainings, and technical assistance to implement the community change model at the local level. Communities That Care has been widely disseminated in areas around the US, for example, Pennsylvania (Greenberg, Fein-berg, Gomez, & Osgood, 2005), Kansas, and New York. It is also disseminated internationally, in Australia, Canada, Great Britain (Crow, France, Hacking, & Hart, 2004), and in the Netherlands (Steketee, Mak, & Huygen, 2006; Van Dijk, Flight, Geldorp, & Tulner, 2004). However, little is known about the comparability of the community implementation

process across countries. This article compares the implementation of the Communities That Care Prevention Strategy in the United States and the Netherlands. The objective of this international study is to compare the implementation of CTC between the two countries and identify core elements and to compare the similarities and differences between the local community boards in the two countries.

We expected that several contextual factors would impact the delivery of CTC in the US and the NL. First, coalition board members in the US are typically community volunteers. In the NL, coalition boards are more likely to be made up of human service professionals who participated in the CTC process as part of their jobs. This is, in part, due to the strong history of professional service delivery corporations in the NL compared to the US. Additionally, the NL has a state-oriented focus, where citizens depend on the state to intervene and address social problems, whereas in the US there is a long history of community mobilization and activation to address social problems (Waltzer, 1997). Second, the US has a wider distribution of income ranges than the NL, even in the small and medium-size communities involved in this study (Keating & Hertzman, 1999). Some evidence suggests that implementation of CTC is more difficult in high-poverty communities (Feinberg, Greenberg, Osgood, Sartorius, & Bontempo, 2007). Finally, the US has a focus on preventive strategies, programs, and policies, whereas the NL has more of a focus on universal approaches to health care and promotion (Ince, Beumer, Jonkman, & Vergeer, 2004).

Prior to conducting the comparative study, we defined the core elements of CTC. This was critical because of cultural differences between these two countries, and also because working with communities within a country means working with many different parties with varied perspectives and responsibilities. Communities That Care is intended to be locally tailored, however, certain key elements are required to ensure the communities' effectiveness. The following four common core elements were identified as essential for successful implementation of CTC:

1. *Mobilizing stakeholders in the community process.* The CTC boards are intended to comprise diverse representation from the community, both in demographic characteristics and in representing key sectors of the community including elected officials, parents, law enforcement, school personnel, public health officials, faith organizations, social services agencies, the business community, young people, and other stakeholders. Trainings for board members are intended to provide specially developed tools and important scientific concepts of prevention that are transferred to communities. This strategic community-specific process is designed to increase ongoing communication, collaboration, and local ownership among community members and service providers involved in the CTC process (Hawkins et al., 2002; Hawkins et al., 2001) and lead to coordinated, data-driven decision making on the part of all stakeholders involved with the development of young people in the community. It is intended that stakeholders stay engaged throughout the process, through ongoing coalition meetings, program decision making, monitoring of programs, and refining of community action plans.

2. *Using epidemiological data.* A key element of the CTC process is the use of epidemiological data in the decision-making process. CTC trainings assist community boards to collect and interpret risk and protective factor data for adolescent problem behaviors (e.g., substance abuse, drop-out, delinquency). The CTC Youth Survey, a standardized tool to assess risk and protection (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002) is administered to youth in schools (approximately at ages 12,14,16, and 18 years). The school survey measures student self-reports of demographic characteristics, youth outcomes on various problem behaviors, and prevalence of risk and protective factors (thirty factors altogether divided between family, school, peer group, and community domains). Additionally, archival data (e.g., school drop-out rates, teenage pregnancy statistics, arrest records, etc.) is used in conjunction with the CTC Youth Survey data to assist in interpreting data and to provide data not available from the CTC Survey. Profiles of community risk and protection are used by communities to prioritize targets for intervention programming and to use as a reference point for the future evaluations.

3. Using tested and effective programs. The third core element of CTC in both countries is the use of programs that have been evaluated and have been shown to reduce risk, increase protection, and reduce problem behaviors. After communities have prioritized their risk and protective factors, boards identify tested and effective programs to address the needs in their community. Communities select programs from a menu of tested programs from the *CTC Prevention Strategies Guide* (Hawkins & Catalano, 2 004) / *Veelbelovend en Effectief* (Ince et al., 2 004) that target communities, schools, families, or children. The programs (fifty-six in the US, thirty-one in the NL) on the CTC menu include parent training programs, school-wide interventions, social skills curricula, mentoring programs, after-school activities, and community-based multi component interventions appropriate for children age 0-18 and their families, and which target different risk and protective factors. Once the boards have chosen the new programs, board members learn in a CTC training session to write a prevention action plan that sets clear, measurable goals regarding anticipated outcomes and clearly articulates how the selected evidence-based programs or policies would be implemented, including where, when, and how their implementation will support the health and social development of children and adolescents.

4. Ongoing evaluation of results and revision of the community plan. CIC is intended as an ongoing process. Every second year, communities in both countries have been administering the CTC Youth Survey and updating other community assessment data. Based on a review of these data and community-level changes in risk, protection, and youth outcomes, CTC boards revise their action plans as needed. They also monitor implementation progress and use this data to refine prevention program implementation when necessary.

METHODOLOGY

Once we defined these core elements, we had a basis for comparing the implementation process of communities in the two countries. The implementation data are from two data sets. The US data come from a group-randomized trial (Community Youth Development Study, conducted by the Social Development Research Group (SDRG) at the University of Washington) in which twenty-four small- to medium-size communities from seven states were recruited to participate. Inclusion in the study required a letter consenting to participation in required research activities from the superintendent of schools; the mayor or town manager, depending on local government structure; and the head of the law enforcement agency serving the community. In fall 2002, the communities were randomly assigned either as intervention communities (n = 12), implementing the CTC operating system, or control communities (n = 12), conducting prevention services as usual. This randomized controlled study aims to evaluate the effectiveness of CTC in reducing levels of risk, increasing levels of protection, and reducing levels of substance use, delinquency, and other adolescent problem behaviors in communities. The study also assesses the degree to which the use of tested, effective programs in communities predicts changes in community-wide levels and trajectories of risk, protection, drug use, and related behavior outcomes (for more detail regarding the Community Youth Development Study (CYDS) intervention design and evaluation, see Hawkins, 2006; Quinby et al., 2008). Implementation data from the twelve CTC intervention communities only are reported here. These communities are located in seven states in the US from Maine to Oregon and range in population size from about 1,500 to 40,000. Median annual income ranged from about $32,000 to $44,000.

The Dutch data were collected from ten cities that implemented CTC during 2000-2006. With a grant from the Dutch government, three of the ten cities started in 2000 with the implementation of the prevention system. Since 2004 their prevention work has been financed by their municipalities. The other seven communities have initiated implementation of CTC at different times between 2004 and 2006. Two communities were financed by the national government, the other five by their respective Dutch province. Implementation of CTC in the NL was conducted by the Netherlands Institute of Youth; the evaluation of the implementation process was conducted by Verwey-Jonker Institute between 2004 and 2006 (Steketee et al., 2006).

The ten Dutch cities are spread out over the country, although most cities are in the West Netherlands. Unlike the American communities, the Dutch CTC communities are mostly part of a bigger city, neighborhood, or independent borough. The areas are generally more populated and urban than the US communities. In general, the Dutch CTC communities are in areas with a higher percentage of youth, immigrants, and a higher prevalence of social problems than other Dutch communities. Communities in the Netherlands are not part of a controlled trial. Consequently, data on these communities are not collected in a streamlined manner but have been persistently collected over the years. The Dutch CTC communities are located in five provinces in the NL and range in population from about 18,000 to 32,000. Median annual income ranges from about $24,000 to $29,000.

In order to implement CTC in the US, certified CTC trainers provided the intervention communities with six standardized training workshops that teach community members to use the CTC operating system. Phone and e-mail consultation was also available. Communities in the NL were exposed to five CTC trainings. In the US, an additional training was added to teach communities how to monitor implementation of tested and effective programs. Staff from the Social Development Research Group at the University of Washington provided additional technical assistance through weekly phone calls, written e-mails and reports, and site visits two to three times per year to each intervention community. Intervention communities were also provided with funding for a full-time local coordinator to oversee CTC activities and were given $75,000 annually to support implementation of prevention programs selected by the community through the CTC process. In the NL, CTC staff were trained and certified through an agreement with the US distribution company of CTC. Communities That Care staff delivered training to community boards and provided technical assistance, mostly by direct contact and general meetings. Each CTC community in the Netherlands has a full-time local coordinator. Communities in the Netherlands did not receive annual financial support for program implementation.

This study has the advantage of measuring CTC implementation using common measures across the two countries: the milestones and benchmarks, and the CTC board interview. Both the milestones and benchmarks, and the board survey were adopted in the NL from reliable US measures with slight alterations for cultural contexts.

The CTC curriculum outlines the steps and procedures, called “milestones” and “benchmarks,” that are to be achieved during the five phases of CTC system implementation. The milestones are goals to be met by communities, and the benchmarks are the actions that community members take or conditions that must be present to achieve those goals. To illustrate, during Phase 3, the community should accomplish the milestone “identify priority risk and protective factors.” One benchmark in this process is “decide who will be involved in the prioritization process.” The CTC trainings provide community members with structured work sessions and skills needed to accomplish most of the milestones and benchmarks, though considerable work must be done outside the training sessions to complete the milestones and benchmarks. In both countries, community coordinators were expected to work with key leaders and CTC board members to achieve these milestones and benchmarks during their implementation of CTC.

The milestones and benchmarks allow measurement of the completion of the core elements of CTC system implementation and allow us to examine to what extent communities in both countries were able to implement the CTC system as designed. In order to assess implementation progress, benchmarks and milestones were rated by local coordinators, the intervention staff, and trainers, and averaged across all raters to calculate the community score for each milestone and benchmark in both countries during 2005/2006. Benchmarks were rated as being either "achieved" or "not achieved," and milestones were rated on a 4-point scale from "none of the milestone met" to "milestone completely met." In addition, project staff in the US and the NL rated the degree of challenge presented by each benchmark on a 4-point scale from "not at all challenging" to "very challenging" and identified the challenges faced. Applying these tools, we assessed similarities and differences in the experiences of communities seeking to use the CTC process in the United States and the Netherlands. Comparison of these measures addressed the degree to which the CTC system is generalizable across these two cultural and national contexts.

The board interview, conducted in both countries, examines eight dimensions of board effectiveness. Seven scales common to instruments in both countries allow assessment of the strength of the community boards and include: community readiness; knowledge of CTC (Feinberg, Greenberg, & Osgood, 2004a); participation (Arthur et al,, 2002); influence of CTC (Jasuja et al., 2005); impact of CTC; barriers to CTC implementation; and board turnover, cohesion, efficiency, and conflict (Feinberg et al., 2004a; Feinberg, Greenberg, & Osgood, 2004b; Feinberg, Riggs, & Greenberg, 2005). Table 1 provides asum-mary of the scales, sample items, and reliability coefficients for each country. Up to ten coalition board members from each community in both countries were contacted and asked to respond to the board interview. In the US, 113 board members from twelve CYDS communities completed the interview. Ninety-five percent completed the board interview, with an average of nine participants from each community (range: 8-10). In the Netherlands, all board members from nine CTC communities (one board stopped at this point) were asked to complete the board interview. Fifty-five board members (63%) completed the interview, with an average of six members per city (range: 4-9). Data from both countries were collected in spring 2006 after three years of CTC implementation in the US and different periods of implementation in the NL.

Table 1. *Community Board Interview*

Scale	Sample Item	# of Items	Alpha	
			US	NL
Community Readiness	Community groups and agencies know how to work together and cooperate to get things done.	3	.69	.78
Knowledge of CTC	Which factor would you say is more important for preventing adolescent problem behaviors? Self esteem, bonding to adults	5	N/A Index	N/A Index
Participation in CTC Board	How involved would you say the following people are in the CTC process in your community? Elected community leaders	14	.74	.72
Board Cohesion	Everyone is involved in discussion, not just a few.	6	.76	.82
Board Efficiency	Board members work very hard.	6	.85	.88
Influence of CTC	Thinking specifically about reducing risk for adolescent drug use, how much influence do you think CTC has had on the following groups: Law enforcement	7	.82	.83
Impact of CTC	As a result of your CTC Board, please tell me how each of the following areas have changed: The quality of local services and programs.	4	.73	.80
Barriers to Implementation	How much of a problem was community divisions among racial, ethnic, or other groups	11	.78	.84
Effective Board—conflict	This board has a hard time resolving conflicts.	2	r=.64	r=.37
Board Turnover	Has the CTC board membership been stable or have you had a high rate of membership turnover? Would you say you've had a…	1	N/A	N/A

FINDINGS

Table 2. *Results of the CTC Milestones and Benchmarks Completed in the US and the NL through June 2006*

Phase	USA Average Implementation Score (1=high implementation)	NL Average Implementation Score (1=high implementation)	USA Average Challenge Score (1=high challenge)	NL Average Challenge Score (1= high challenge)
One	1.28 (0.18)	1.54 (0.26)	3.16 (0.55)	2.25 (0.37))
Two	1.20 (0.22)	1.56 (0.27)	3.31 (0.65)	2.16 (0.36)
Three	1.06 (0.11)	1.55 (0.47)	3.71 (0.44)	2.37 (0.51)
Four	1.13 (0.12)	2.37 (1.06)	3.24 (0.55)	2.22 (0.76)
Five	1.41 (0.24)	3.36 (0.70)	2.88 (0.56)	2.26 (0.61)

Data from the ratings of the milestones and benchmarks in the United States suggests high implementation of CTC in the CYDS communities. The data from the Netherlands show similar but somewhat lower levels of implementation than the US for the first three phases, and evidence of high implementation of CTC in the ten communities. However, Phase 4, and especially Phase 5, indicate low implementation in CTC implementation in the NL. Because of the staggered implementation of CTC in the NL, not all the communities were in the same phase. These communities were, as mentioned, not part of an experimental study, and the heterogenity within the Dutch communities was greater. At the time of this research, five of ten communities were in Phase 4 or 5.

Both countries were able to recruit and engage key stakeholders in supporting the CTC process. Additionally, both communities in both countries were able to establish viable community planning boards. Both countries were using epidemiological data to develop prevention plans. Data from Phase 3 indicates that both the NL and US communities were able to use student survey data and community-risk and -protective profiles to prioritize which risk factors to focus their efforts on. Table 3 identifies the range of risk factors identified by both the US and the NL boards.

Table 3. *Phase 3: Prioritized Risk Factors in US and NL*

Risk Factor	US	NL
Community		
Laws & norms favourable to drugs/ problem behaviour	1	2
Low attachment to neighbourhood	0	7
Extreme economic deprivation	0	1
School		
Low commitment to school	9	3
Academic failure	5	5
Family		
Poor family management	3	8
Family conflict	2	1
Parental attitudes favourable to problem behaviour	1	1
Individual/Peer		
Friends' antisocial behaviours	9	3
Favourable attitudes towards the problem behaviour	5	2
Rebelliousness	3	0

There was a greater degree of challenge or barriers to implementation in the Netherlands than in the United States, with a mean overall challenge rate of 2.08 across all five implementation phases in the NL, and 1.22 in the US. Several common challenges were identified in both countries. These included the adoption and implementation of tested, effective programs. Frequently, community members were concerned about adopting new programs and wanted to use familiar programs, even if they did not have data supporting the effectiveness of those programs. In both countries there is need for a more comprehensive menu of tested and effective programs, but even more so in the Netherlands. Addition-ally, recruitment, retention, and activation of key leaders was challenging in both countries. While overall challenge rates were similar and some common challenges were faced, the two countries also had different challenges identified by raters.

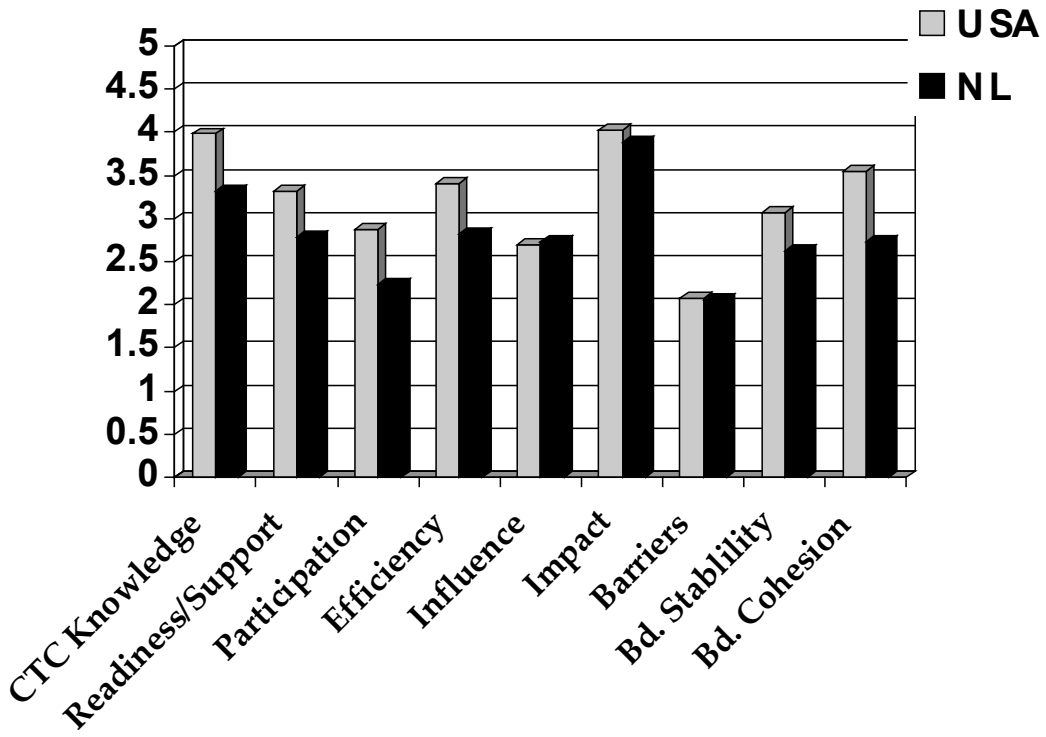
Examples of specific challenges identified by raters in the American communities during Phase 1 included developing clear definitions for CTC board roles and members' levels of authority. The CTC trainings do not provide technology for boards to effectively collaborate with other community development initiatives and prevention organizations. Consequently, communities spend considerable time and effort addressing these issues and clarifying the board's role and procedures in the process of formalizing work with other efforts and organizations.

During Phase 5, raters in the US identified the boards as being challenged by reaching some targeted populations with chosen programs, policies, or practices. For example, the successful recruitment of a high percentage of parents into parenting programs was a challenge identified by raters. CTC communities have tried a wide range of approaches to recruitment into parenting programs. Neither CTC nor any of the tested effective parenting programs provide a technology or mechanism for the successful recruitment of a high percentage of parents into parenting programs. None of the communities met the saturation goal of reaching at least 20 percent of the target population per year. Another challenge faced during Phase 5 was recruiting and training new key leaders and board members. Because CTC is an ongoing effort, it is important to routinely recruit and train new board members and to continuously ensure that members represent all critical stakeholders in the current effort and community. This has required communities to offer formal annual and periodic Key Leader Orientations for new board members. No major challenges were identified in Phases 2-4.

In the Netherlands, an example of a specific challenge identified by milestone and benchmark raters faced by communities during Phase 1 involves defining the geographic region covered by CTC. While communities in the US were typically towns, cities, or a collection of towns, and all neighborhoods were included in this process, in the NL the CTC area was typically a neighborhood of a larger city, which made clarifying the CTC community boundaries challenging. Raters identified difficulties in communication to the broader community and key leaders during Phase 2, as well as difficulty in involving schools in organizing and committing to cooperate with conducting the student survey, and getting the right people to be involved with the process. In addition, board members found it difficult to explain the CTC framework and process. During Phase 3, board members were challenged by conducting a comprehensive resource assessment (documenting what is going on in the community, which programs are used, and how many people are participating). Finally, during Phase 4 the boards found it challenging to develop a comprehensive plan of programs to target prioritized risk factors. This is due, in part, to the paucity of tested, effective programs in the Netherlands. Additionally, community boards had a more difficult time focusing on the concept of protective factors, and hence they sometimes slipped from the agenda. Consequently, the effort remains problem focused rather than health promotion focused. The challenge for Phase 5 is to use the outcomes of the ongoing evaluation of the prevention plan to inform the next iteration of the plan. In the United States, communities received an additional training on the implementation of tested programs, called Community Plan Implementation Training, to facilitate this process. Communities in the Netherlands are now receiving this training.

A comparison of key elements of board functioning as reported by board members in both countries shows that, on a number of dimensions, CTC boards in the United States are functioning significanüy better than those in the Netherlands.

Figure 1. *Board Functioning in the USA and the Netherlands*



Boards in the US had higher levels of knowledge of CTC, greater community readiness and support for CTC, more participation by community members, lower membership turnover, and greater skills in conflict resolution. Yet the two countries reported comparable levels of influence and impact of CTC in their communities (see figure 1). The observed differences in board functioning may be due to the makeup of the board membership.

Based on data from the board interviews, several factors may have had a negative influence on the implementation of CTC in the Netherlands compared to the United States. First, there is broader representation and participation of the community on CTC boards in the US than in the NL. Generally, in the NL the people involved represent local institutes that work with children. This may, in part, explain why board member turnover is higher in the NL; as people change their positions, they leave the board and new professionals join. Consequently, participation from students, business leaders, and volunteers is lacking on the Dutch CTC boards. Second, the translation of the materials into Dutch delayed full implementation of the material in a timely manner. Consequently, those

communities that started the process earlier (the three that started in 2000) were at a disadvantage awaiting translation of the CTC materials. Third, because the members of the Dutch prevention team are from an institution or organization, they have their own agendas: to get their own programs realized and financed within CTC. So the members are sometimes more focused on the benefit and goal of their own organization than on the CTC goal. However, CTC provides organizations an opportunity to work together and set the same goals. This is the first time most of these organizations and institutions have worked together in this kind of board setting. It is a new experience, requiring coalition members to learn to speak a common language and define terms and common issues.

DISCUSSION

The data presented here provide evidence that communities in both countries can mobilize, organize, assess needs, and develop a community action plan that specifies tested and effective preventive interventions to address priority community risks and protective factors. Overall, it is noteworthy to see that the ratings of milestones and benchmarks for the first three phases are similar in the United States and the Netherlands. The results between the two countries suggest more cooperation between workers in the field, more understanding of the problems, and more use of risk and protective factor data than before the CTC process began. Even though the context is different, many of the results and challenges are similar. This suggests that the CTC system has been implemented in both countries to advance collaboration across prevention organizations, to use data on risk and protective factors, and to choose tested programs. Though the cultural contexts of implementation are different and the board processes vary between the two countries, twenty-one of the twenty-two communities were able to: a) mobilize key stakeholders, b) use epidemiological data, and c) implement tested effective programs. Communities in the NL were less likely to complete ongoing prevention plans.

Providing the CTC milestones and benchmarks as a monitoring tool to assess progress over time helps communities advance their prevention efforts and ensure installation of the CTC system. Important elements contributing to the implementation of CTC include high-quality training delivered by certified trainers, the hiring and retention of skillful coordinators who are locally selected and community based, and a high-quality technical assistance and monitoring system (Greenberg et al., 2005; Mitchell, Florin, & Stevenson, 2002). Research has demonstrated that programs and policies that are implemented with a high level of fidelity show significant positive results (Botvin, Baker, Dusenbury, Botvin, & Diaz, 1995). The risk of local and national adaptation of the operating system is protected by strong measures of (e.g., milestones and benchmarks, community board interview) implementation fidelity. Using these strong measures, we are better able to understand which content is followed completely and which is delivered as it was meant to be. However, community contexts vary and frameworks must have the flexibility to address local needs, otherwise these contexts can lead to adaptation of the original preventive strategy. Adaptation of programs can have a negative impact on the outcomes of effective programs and policies. Communities That Care provides a rational and flexible framework for communities to use a data-driven process to address local needs within their local context.

Different challenges also arose during implementation owing to cultural differences. For example, the lack of a menu of Tested Effective Programs (TEPs) in the NL severely curtailed the full implementation of CTC and was a detriment to the strong implementation of Phases 4 and 5. Whereas overall implementation was stronger in the US, nonetheless, CTC communities in the NL appear to be working together more in a targeted fashion to address risk and protection than they were before. As noted earlier, the CTC process in the NL has increased the demand for tested programs. One outcome of the process in the NL is the creation of an infrastructure to support the national databank of TEPs and support for communities implementing programs to build in stronger evaluations so that they can be added to theTEP list. Unfortunately, initially, there was a very limited menu of effective programs. Currently, there are thirty-one effective and promising programs available in the Netherlands and more research is being conducted to expand the list of tested effective programs. One future focus of work in the NL is to broaden the use of effective programs.

Despite the common measures used in this study, there are several noteworthy limitations. First, the data collection strategies, though using the same or similar measures, varied between the two countries. In the US, there were tightly controlled data collection strategies as part of a group-randomized trial. In the NL, data collection strategies were ongoing and were used as part of a national evaluation of CTC. In the future, multinational experimental studies should be set up similarly and use common measures. Second, the twelve US communities began CTC implementation at about the same time, whereas communities in the NL had greater variation in the length of time that they had been implementing CTC. Thus, five of the ten communities had not made it to Phase 5.

The results of the present comparative study indicate that the first three core elements of CTC: mobilization of stakeholders, use of epidemiological data, and use of tested and effective programs, are in place in both countries. In the Netherlands, current research is underway to support communities in fully implementing the fourth element (CTC as an ongoing process) as well. But we can conclude that CTC offers a process that can help communities implement science-based prevention. Additionally, this cross-national exchange has provided a rare opportunity to compare across countries the implementation of effective preventive programs, practices, and policies. Cross-national work on the implementation of effective programs is still in its infancy.

Part II: RESEARCH

Solution

I am

stubborn

and in this stubbornness I give

as wax

so only I can

print the world

Tadeusz Rózewicz

In contrast to individual phenomena like intelligence and depression, the measurement of social phenomena and constructs like social economic status or social capital is in its infancy, and the situation is even worse for ecological constructs like communities, schools, and workplaces. In the second part of this study, the importance of the scientific research of problem behaviour in specific areas (communities, cities, countries) will be discussed in three chapters. Although the aim of te Communities that Care prevention system is to prevent adodolescent behaviourial health problems, in each chapter of this second part specific problem behaviours of youngsters (in this case antisocial behaviour, alcohol use) are analysed within specific contexts: communities, cities, and countries. On the basis of ecological research, the situation in specific areas can be assessed. Ecological ('ecometric') research aims to use the needs of youngsters as a point of departure for social investment. Characteristics of this research, in my study, are the development of children and youngsters over a longer time span, the four contexts in which young people grow up (family, school, friends, and community), and social determinants (risk and protective factors).

In the second part of this thesis, three examples are presented. Chapter 5 is a metropolitan study on anti-social behaviour, Chapter 6 is a non-Western study on violence and delinquency, and Chapter 7 is a comparative study between two countries on alcohol use of youngsters. These chapters show how such ecological research on specific adolescent behavioural health problems can be set up and worked out and can contribute to the organisation of social policy and improvement of health and the social development of youngsters.

5. TARGETED PREVENTION OF ANTI-SOCIAL BEHAVIOR IN AN URBAN CONTEXT

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ABSTRACT

Preventive interventions for reducing anti-social behavior in youngsters are generally set in urban contexts. This article contains basic proposals about where to begin with preventive activities (areas with high prevalence), which underlying factors to target (risk factors) and what gains these interventions may yield (attributable fractions). This is a cross-sectional study of anti-social behavior among 5,657 youngsters (12-15 years) who live in 55 neighborhoods within eleven boroughs in Rotterdam (the Netherlands). The prevalence of anti-social behavior, the risk factors and attributable fractions are analyzed on three levels (neighborhood, borough and city). This article addresses ways to tackle anti-social behavior effectively through social crime prevention. We focus on specific problem areas, identify the risk factors associated with that area and put together a package of preventive policies and interventions aimed at addressing these.

INTRODUCTION

We cannot predict which children and youngsters will grow up into anti-social adults. Perhaps we never will (Hoeve et al., 2008). At the same time children and youngsters who exhibit anti-social behavior are too numerous to all be helped with existing resources. There are long waiting lists for the treatment of children and youngsters with anti-social problems in many countries. Many of them don't get the help they deserve. Furthermore, anti-social children and youngsters and their families are often difficult to reach. Reaching out to them is a time-consuming and energy-demanding enterprise. Even when treatment is possible and they agree to participate, it is often not completed in the way it should be. Although the number of effective preventive programs is increasing, only a limited number of youngsters can make use of them (Jonkman et al., 2008, Offord & Bennett, 2002). Clearly therefore, there is sufficient reason to explore prevention of anti-social behavior as an alternative to individualtreatment. New preventive insights and approaches are worth taking seriously.

Anti-social behavior of youngsters we define here as disruptive or rule breaking behavior which shows itself in violence and other forms of delinquency (punishable acts) of youngsters. [1] The development and early detection of anti-social behavior has received considerable scientific attention in recent years. Research has revealed an association between the prevalence of anti- social behavior and development of anti-social behavior on one hand and specific factors (especially risk factors) on the other hand. In etiological and epidemiological research important risk factors which are connected with the early onset and development of anti-social behavior have been discovered (Loeber & Farrington, 1997, 2001; Loeber et al., 2008; Junger-Tas et al., 2008). These risk factors may play a role in the early detection but also in the prevention of problem behavior.

In recent years there has been renewed attention to the influence of the environments on anti-social behavior. These environments are generally also the contexts in which preventive activities should be undertaken. The influence of the characteristics of the city, boroughs and neighborhoods on the development of social and anti-social behavior has a long scientific history (Shaw & Mc Kay, 1942; Cloward & Ohlin, 1960). The theme of the neighborhood returned to the centre of interest with the work of Wilson (1987), and renewed research on the relationship between individual factors and contextual factors was conducted (Wilson, 1987; Jencks & Mayer, 1990;

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1 *Editor's note: in the Dutch context, anti-social behaviour is thus defined very differently from in the UK*

Sampson, 1992; Leventhal & Brooks-Gunn, 2000; Elliot et al., 1992; Furstenberg, 1999). It became clear that the neighborhood plays an important role in social and normative support and the development of behavior (Sampson et al., 1997; Sampson & Laub, 1993; Thornby & Krohn, 2003; Kawachi & Berkman, 2003).

The relationship between the characteristics of a neighborhood and anti-social behavior of youngsters is both direct and indirect. Existing delinquency in the neighborhood, like crime, hooliganism and drug abuse affects anti-social behavior of youngsters in a direct way (Junger-Tas, et al, 2008). Poverty, socio-economic deprivation and lack of bonding with the neighborhood are important contextual factors for anti-social behavior and other health differences (Kawachi & Berkman, 2003).

It is indirect if unfavorable living conditions undermine the quality of upbringing, and parents feel powerless to manage or structure the lives of their children by rules and control (Pels, 2003; Furstenberg, 1999). Youngsters who live in these circumstances come to see crime as a normal phenomenon and anti-social behavior as an attractive lifestyle (Felson, 1998). Law-abiding residents who live in these neighborhoods may move, social control decreases, parents might think they are unable to do their job as parents, and youngsters will spend more time on the street and have more scope for causing trouble.

Big cities (metropolitan areas) show more violence, juvenile delinquency and other kinds of risk behaviors (like school drop-out and teen pregnancy) than in smaller cities. Research indicates repeatedly that youngsters from certain neighborhoods of these metropolitan areas demonstrate more problem behavior than youngsters in other neighborhoods. Anti-social behavior concentrates itself often within certain neighborhoods in these bigger cities. Children and youngsters who live here exhibit more behavioral problems, show more violence and have more contacts with the police.

When not all anti-social problems can be solved on the individual level and the importance of contextual factors are evident, what does this mean for urban social policy and prevention strategies? A lot of work is done in cities but often without clear theoretical and empirical knowledge. City councils often ask themselves where they should put social investment, which interventions give the best preventive chances and what are the gains they yield? City councils repeatedly ask for insights to help them focus on main social problems (like anti-social behavior). They ask also how we select policy priorities and improve our insights into the benefits of social investment? Scientific support to choose areas where the problems are most prevalent and support them in choosing effective interventions can help. Underlying factors (especially risk factors and protective factors) offer good prospects for targeted social investment and successful preventive policy. Sound research into prevalence and underlying risk factors can be the basis for rational and effective prevention strategies. Our knowledge of

social investment is still limited but we can support urban areas to handle social problems more effectively. This article deals with these government questions and how we can build up targeted prevention and choose for a more selective approach. That is the reason we asked ourselves in this article the question: where to begin, what to target, what to expect?

METHODS

SAMPLE

The data used in this article are based on a study which was conducted during the 2006-2007 school year in 90% of secondary schools in the city of Rotterdam (DSP, GGD and NJI, 2007).

Figure 1. *Rotterdam, the boroughs and number of neighbourhoods researched*

One Islamic school, one Protestant and special schools of vocational education ('Praktijkscholen' for youngsters with learning disabilities) didn't participate. The response of the youngsters in the participating schools was also 90%. The survey was set out only to first and third graders. In the year of data gathering (school year 2006-2007) Rotterdam had a total of 26,176 youngsters aged 12 to 15 years. The questionnaire was filled in by

8,915 school-goers in 50 secondary schools. However, 2,534 of them lived outside Rotterdam and 352 filled in an invalid code number, so these were removed from the data file. Also youngsters from other age brackets (younger than 12, older than 15, total 372) were taken out. Finally, we had a dataset of 5,657 individuals. These are clustered within 55 neighborhoods (based on postal code, Table 1.). The neighborhoods are clustered within eleven boroughs (with their own semi-autonomous administration). The survey excluded two boroughs, which are part of Rotterdam: the borough Pernis (an industrial area almost without youngsters) and Hoek van Holland.

Table 1. *The 55 neighborhoods and 11 boroughs*

Hoogvliet Zuid (HVZ)	Vreewijk (VW)	Provenierswijk (PW)
Hoogvliet Noord (HVN)	Nesselland (NE)	Oude Noorden (ON)
HOOGVLIET (HV-DG)	Kop van Zuid (KZ)	Liskwartier (LK)
	Katendrecht (KD)	Blijdorp (BD)
Zuidwijk (ZW)	Hillesluis (HS)	Bergpolder (BP)
Tarwewijk (TW)	Feyenoord (FN)	Agniessebuurt (AB)
Pendrecht (PD)	Bloemhof (BH)	NOORD (N-DG)
Oud Charlois (OCL)	Afrikaanderwijk (AW)	
Carnisse (CN)	FEYENOORD (FN-DG)	Overschie (OS)
CHARLOIS (CL-DG)		Kleinpolder (KP)
	Rubroek (RB)	OVERSCHIE (OS-DG)
Zevenkamp (ZK)	Oud Crooswijk (OC)	
's-Gravenland (GL)	Nieuw Crooswijk (NC)	Tussendijken (TD)
Prinsenland (PL)	Kralingen West (KLW)	Spangen (SP)
Oosterflank (OF)	Kralingen Oost (KLO)	Schiemond (SM)
Ommoord (OM)	De Esch (DE)	Oud Matthenesse (OM)
Nessellande (NL)	KRALINGEN (KL-DG)	Nieuw Westen (NW)
Lage Land (LL)		Middelland (ML)
PR. ALEXANDER (PA-DG)	Terbregge (TB)	Delfshaven (DH)
	Schiebroek (SB)	Bospolder (BP)
Lombardijen (LD)	Molenaarskwartier (MK)	DELFSHAVEN (DH-DG)
Gr IJsselmonde (GIJM)	Hillegersberg Noord (HBN)	
Beverwaard (BW)	Hillegersberg Zuid (HBZ)	Stadsdriehoek (SD)
IJSSELMONDE (IJM-DG	HILLEGERSBERG (HB-DG)	Oude Westen (OW)
		Cool (CL)
		STADSCENTRUM (SC-DG)

MEASUREMENT

The questionnaire was conducted via internet among secondary school-goers in the first (12-13 years) and third (14-15 years) grade. The research instrument used for this research was adapted from the Communities that Care Youth survey (Arthur et al, 2006). The adaptation sought to retain semantic meaning of items and the resulting country specific questionnaire showed similar psychometric properties to the original USA survey instrument (Jonkman et al., 2006). The results give an overview of the youngsters' background (e,g, gender, age, ethnicity, school background), various problem behaviors (including anti social behaviour but also other behaviors like alcohol- and drug use) and risk factors in the family, school, friends and neighborhood. The data gathering took place with support of school nurses from the Municipal Health Service (GGD) of Rotterdam (Aalst & Roorda, 2007, 2008).

Risk factors can be seen as approximations of causes of, in this case, anti social behavior. They are part of the domains in which youngsters grow up daily: family, school, friends and communities. In this article we use only the factors which demonstrated high reliability (Cronbach's alpha .70 or higher). These five risk factors are expected to be related to a higher level of anti social behavior.

For this article we concentrated on socio-demographic variables and risk factors as independent variables and anti-social behavior as the dependent variable.

For the independent variables we used four socio-demographic variables: gender, age (12/13 years-14/ 15 years), school type (high/academic-low/vocational) and ethnicity (Dutch-other). We used five risk factors which are researched on a four-point scale (YES, yes, no, NO).

1. Poor family management: This was assessed with the following statements: The rules in our family are clear; when I'm not at home, my parents know where I am; within our family there are clear rules about alcohol and drug use; if I use drugs, my parents will notice this; if I play truant, my parents will notice this (5 items, Cronbach's alpha =.0,75)

2. Family conflict: This was assessed with the following statements: within our family we often shout or snarl at each other; within our family there is always the same battle about the same things; in our family there is often a big argument (3 items, alpha=.76).

3. Attitudes favorable towards alcohol and drug use: Questions here are: What do you think if someone of your age is drunk; uses soft drugs (like marijuana, hash), hard drugs (like heroin, cocain, XTC), other drugs (like valium, glue, paddo's), smokes (5 items, alpha=.77).

4. Interaction with anti-social peers: Questions here are: Do your friends play truant? Do your friends carry a weapon? Do they steal? Have your friends ever been arrested by the police? Did your friends leave school without a certificate? (5 items, alpha=.77).

5. Low neighborhood attachment: This was assessed with the following statements: I would like to move out of this neighborhood; if I had to move I would miss this neighborhood very much; in my opinion I live in a nice neighborhood (3 items, alpha=.85).

For reasons regarding content we also made the risk factors binary. This meant we could later analyze the Attributable Fraction, a measure by which we can say something about the benefits of social investment. For the risk factors we used the median as cut-off point(like Arthur et al. (2006), who compare different cut-off point strategies and defends the median strategy). Youngsters who scored lower on a risk factor got a 0. Youngsters who scored higher got a 1 on this risk factor.

Dependent variable: Anti-social behavior. To examine anti-social behavior we asked six questions (regarding violent and delinquent acts during the past year): 1.Did you sometimes carry a weapon to school? 2. Did you participate in a fight? 3. Did you hit anyone? 4. Did you destroy anything on the street? 5. Did you steal anything? 6. Did you sell stolen goods? Youngster got a 1 when they answered one or more questions in the affirmative. Their score was 0 when they answered no to all of the items.

Other (dependent) variables: For this article we also looked at other adolescent problem behaviors and made use of measures of substance abuse (alcohol use, smoking, all types of hash use). We asked the participants if they drank, smoked or used hash during last month.

STATISTICAL ANALYSES

Statistical analyses (with the use of STATA 11.1 and MLWin 2.20) were conducted in two parts:
1. First, the prevalence of anti-social behavior for Rotterdam was mapped out. In addition, we researched the correlations with other problem behaviors (alcohol, cigarettes, hash). We also looked at the level of prevalence of anti-social behavior within the eleven boroughs and 55 neighborhoods of Rotterdam.

For this part we performed logistic multilevel analysis on the total Rotterdam dataset. Logistic multilevel analysis handles a dichotomous outcome variable (here anti-social behavior yes/no). It is a logistic regression analysis. But because the data in this study are clearly clustered in neighborhoods and boroughs we have to correct for this. Over the last ten to fifteen years new research methods have been developed which can handle these clustered and hierarchical data more accurately. The differences in overall level of the dependent variable may vary for different clusters controlled for covariates (random intercept model). But the differences can also be studied when the effects of the covariates differ over the clusters (random coefficient model). The youngsters are nested within 55 neighborhoods and these neighborhoods are nested within the eleven boroughs of the city.

We put the different variables in one prognostic model. The correlations between anti-social behavior on the one hand and socio-demographic background variables and risk factors on the other hand were determined in this part of the study within the clustered context. We started with a two-level intercept model (a three-level model was not necessary). We first added the socio-demographic variables (the first group of predictors) to the model and then the second group of predictors (risk factors). On the basis of logistic multilevel analyses we were then able to build up a prognostic model with socio-demographic as well as risk factors with a strong predictive power on which targeted prevention in this urban context can be built.

2. With the support of our prognostic model we examine in the second part of this article the possibilities of targeted prevention in this urban context. Many cities set themselves a target of lowering levels of problem behaviors. In this part of the article we asked ourselves what should happen for a western metropolitan city like Rotterdam to lower the prevalence of anti-social behavior from 0.33 to 0.30. With this target in our mind, should prevention be conducted in specific neighborhoods, in specific boroughs or should this preventive work be

done city-wide? To answer this question we first identified high-prevalence neighborhoods and boroughs were the level of anti social behavior is higher than the 'target-mean' of 0.30. We identified eleven neighborhoods and seven boroughs with a significant high level of anti-social behavior.

After identifying these environments we tested our predictive model in each high-prevalence environment. On the basis of this predictive model we selected for every environment the strongest adjusted risk factor for that area and looked at how strong the association with anti-social behavior was for that area. But we looked not only at how strong this relation was. We converted also which profits can be made in neighborhoods, boroughs and the city as a whole, assuming that prevention policy is so successful that the negative influence of the highest risk factor can be reduced completely in each of these environments. So, after we have determined the prevalence of anti-social behavior and selected the most important risk factor for every environment we calculated the (population) Attributable Fractions (AF) for the eleven neighborhoods, seven boroughs and for the city as a whole (Jewell, 2004; Smit, 2006). With these measures (prevalence, odds ratio, attributable fraction) we worked out the different possibilities for risk-oriented prevention of anti-social behavior in this urban context.

RESULTS

PREVALENCE OF ANTI-SOCIAL BEHAVIOR AND A PREDICTIVE MODEL

First, we analyzed the data for the whole city of Rotterdam and build up first our predictive model for targeted prevention of anti-social behavior among youngsters. Anti-social behavior was found in 33% of the Rotterdam youngsters (0.33; CI 95% 0.32-0.34). These anti-social youngsters also exhibit other risk behaviors: they drink more (OR drink 1.99; CI 95% : 1.75-2.26), smoke more (OR smoke: 2.14; CI 95%: 1.44-2.41)) and use more hash (OR hash: 2.14; CI 95%: 1.50-3.05).

Table 2. *Multilevel models*

Model 1a:		Model 2:
Random intercept neighborhood		Random intercept neighborhood and borough (three level model)
Intercept	-0.677 (0.042)	-0.688 (0.055)
Variance		
Neigh	0.050 (0.019)	0.022 (0.01)
Borough		0.032 (0.021)
Model 1b:		
Random intercept borough		
Intercept	-0.692 (0.057)	
Variance		
Borough	0.047 (0.021)	
Model 3a:		Model 4a :
Random intercept neighborhood and first group of predictors (social demographic variables)		Random intercept neighborhood and two groups of predictors (social demographic variables and risk factors)
		Odds
Intercept	-1.765 (0.077)	-2.890 (0.109)

Fixed part			
Gender	1.001 (0.059)	1.030 (0.065)	2.80 (2.67-2.93)
Age	0.081 (0.027)	-0.070 (0.030)	0.93 (0.87-0.99)
School type	0.678 (0.003)	0.577 (0.068)	1.97 (1.84-2.1)
Poor Family Management		0.573 (0.066)	1.77 (1.64-1.90)
Fam Conflict		0.247 (0.068)	1.28 (1.15-1.41)
Positive attitudes alcohol/drugs		0.444 (0.066)	1.56 (1.43-1.69)
Interaction with anti-social peers		0.526 (0.074)	1.69 (1.54-1.84)
Low neighborhood attachment		1.350 (0.074)	3.86 (3.71-4.01)
Variance			
Neighb	0.026 (0.014)	0.025 (0.015)	
Model 3b:		Model 4b :	
Random intercept borough and first group of predictors (social demographic variables)		Random intercept borough and two groups of predictors (social demographic variables and risk factors) Odds	
Intercept	-1.777 (0.079)	-2.905 (0.111)	
Fixed part			
Gender	0.999 (0.060)	1.030 (0.065)	2.80 (2.67-2.93)
Age	0.080 (0.027)	-0.070 (0.030)	0.93 (0.87-0.99)
School type	0.679 (0.063)	0.579 (0.068)	1.97 (1.84-2.1)
Poor Family Management		0.573 (0.066)	1.77 (1.64-1.90)
Fam Conflict		0.248 (0.068)	1.28 (1.15-1.41)
Positive attitudes alcohol/drugs		0.446 (0.066)	1.56 (1.43-1.69)
Interaction with anti-social peers		0.527 (0.074)	1.69 (1.54-1.84)
Low neighborhood attachment		1.348 (0.074)	3.86 (3.71-4.01)
Variance			
Neighb	0.014 (0.010)	0.015 (0.011)	

Multilevel analysis (Table 2) gives us the opportunity to study the association of outcomes and independent variables and to build up a predictive model in a clustered structure. We researched the variance on neighborhood level (Model 1a) and borough level (Model 1b). We also tried out a three-level model (Model 2), but this three-level structure was superfluous because the significance of variances slips away between the two levels.

After the first step we further worked out the two-level models. We moved forward the first group of predictors (socio-demographic predictors: gender, age, school type) to the model (Model 3a and Model 3b). The influence of these variables on the outcome (anti-social behavior) is significant. In the last model (Model 4a and Model 4b) we add also the second group of predictors (five risk factors: Poor Family Management, Family Conflict, Positive attitudes towards alcohol and drugs, Interaction with anti-social peers, Low neighborhood interactions). The results on neighborhood and borough level are the same.

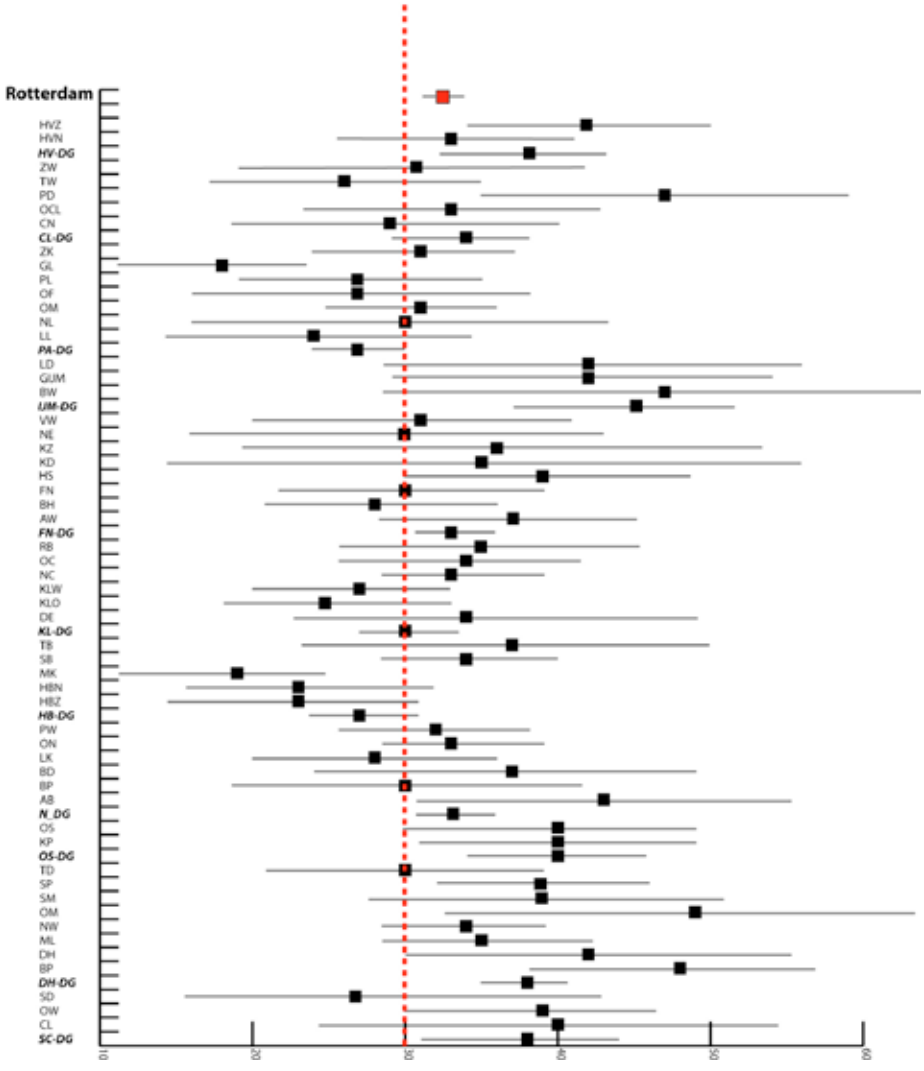
This predictive model shows that there is more anti-social behavior among boys than among girls (OR Gender: 2.8). Youngsters with a lower level of secondary education show more anti-social behavior than youngsters with a higher level of education (OR school type: 1.97). Younger adolescents exhibit more anti-social behavior than older adolescents (OR Age: 0.93). Gender, school type (high-low) and age (12/13-14/15) are significant socio-demographic variables.

The five risk factors which we used in this study were all significantly associated with anti-social behavior. Youngsters who grow up with these risk factors show more anti-social behavior than youngsters without these risk factors. Youngsters from families with poor family management engage in more anti-social behavior (OR Poor Family Management: 1.77). The same is true for youngsters with conflicts in the family (OR Family Conflict: 1.28), for youngsters who show favorable attitudes towards alcohol and drug use (OR Positive attitudes towards alcohol and drugs use: 1.56) and for youngsters who interact with anti-social peers (OR Interactions with anti-social peers: 1.69). The community risk factor is the risk factor with the highest impact in this urban context (OR Low neighborhood attachment: 3.86).

Almost all variance in anti-social behavior between neighborhoods and boroughs is explained by the model. The influence of the predictors is substantial and ultimately we don't need a hierarchical model for prediction. When youngsters are female, older and in a higher level of school and when they have none of the five risk factors the probability that they will exhibit anti-social behavior is 3.7%. The probability of engaging in anti-social behavior is high when they are male, younger and in lower types of education but also grow up with the five risk factors in their family, peer group and neighborhood. The probability that they will engage in anti-social behavior is then 88.6%.

POSSIBILITIES OF TARGETED PREVENTION

Figure 2. *Prevalence of anti-social behavior in Rotterdam, eleven boroughs and 55 neighborhoods (CI: 95%)*



With the use of theoretical and empirical knowledge we could develop our predictive model. But we are not only interested in associations between outcomes and predictors and in one universal model. We want to explore possibilities and possible results for targeted urban prevention policy which takes into account the differences between environments. To explore this further we suppose that the municipal authorities of Rotterdam want to decrease the prevalence of anti-social behavior (as cities do often bravely). In this case the authorities set a specific target and want to lower the prevalence of anti- social behavior from 0.33 to 0.30. After building up our predictive model we tried to answer our three central questions: in which area should we begin; which risk factors should we target in our preventive work; and what gains can be yielded?

First, we selected areas with high levels of anti-social behavior. When we compare anti-social behavior among youngsters in different neighborhoods with the target prevalence of the city (0.30), we see that this problem behavior is significantly higher in eleven Rotterdam neighborhoods (see Figure 2, page X). These neighborhoods are: Oude Westen, Bospolder, Delfshaven, Oud-Mathenesse, Spangen, Kleinpolder, Overschie, Agniesebuurt, Hillesluis, Pendrecht, Hoogvliet-Zuid. Without any anti-social behavior in these neighborhoods, anti-social behavior city-wide would be lowered by 8.5% (24.5% = new total). Of the eleven boroughs seven score significantly higher than the target mean (0.30): Stadscentrum, Delfshaven, Overschie, Noord, Feyenoord; IJsselmonde and Hoogvliet. The added value of these boroughs to anti- social behavior among youngsters in Rotterdam is 20.3% (12.7% = new total).

After identifying the high-prevalence environments we tried out our model as described in the first part of this article in each of these environments. For each environment we searched for thé risk factor with the strongest correlation with anti-social behavior for that area controlled for the other predictors. For these eighteen areas (eleven neighborhoods, seven boroughs) we also looked for the (population) Attributable Fraction. The Attributable Fraction gives us additional information for social policy. Suppose a systematic approach is taken to reduce the risk factor with the highest level in a specific environment and suppose this intervention is completely successful. The results (Table 3) show that ten of the eleven high- prevalence neighborhoods and all of the seven high-prevalence boroughs reflect substantial possible health gains. Only for the neighborhood Kleinpolder, where anti-social behavior among youngsters is significantly high in relation to the city mean, could such a significant risk factor and Attributable Fraction not be found.

Low neighborhood attachment, as we have seen, is overall the strongest correlated risk factor for anti-social behavior in Rotterdam. For seven of the eleven high level neighborhoods this is also the most important risk factor. If, for example, people in the neighborhood of Spangen are completely successful in reducing this risk factor, the level of anti-social behavior will be reduced here by 44%. In the Hillesluis neighborhood a reduction of this risk factor will yield the best results: 54%.

In three of the eleven neighborhoods we detected other important risk factors. Interaction with anti-social peers is the highest risk factor in Agniesebuurt (AF = 72%) and Pendrecht (AF = 73%). In the Overschie neighborhood Positive attitudes toward alcohol and drugs is high. Successful prevention work on this specific risk factor could reduce anti-social behavior by a maximum of 50%.

For all of the seven boroughs Low neighborhood attachment is the most important risk factor, ranging from an AF of 23% for Noord to 41% in Delfshaven.

Table 3. *Selected areas and the influence of risk factor on anti social behavior*

Area	*N*	*Anti social Behavior*	*Risk factors*	*OR*	*AF*	*Antisocial Behavior potential*
11 Neighborhoods						
Oude Westen	*140*	*0.39*	*Low neighborhood attachment*	*7.9*	*42%*	*0.23*
Bospolder	*101*	*0.48*	*Low neighborhood attachment*	*4.7*	*41%*	*0.29*
Delfshaven	*59*	*0.42*	*Low neighborhood attachment*	*5*	*32%*	*0.22*
Oud-Mathenesse	*37*	*0.49*	*Low neighborhood attachment*	*5.3*	*41%*	*0.29*
Spangen	*181*	*0.39*	*Low neighborhood attachment*	*9.7*	*44%*	*0.22*
Kleinpolder	*117*	*0.40*	*Ns*			
Overschie	*96*	*0.40*	*Positive attitudes towards alcohol and drugs*	*4.3*	*50%*	*0.2*
Agniesebuurt	*65*	*0.43*	*Interaction with anti social peers*	*5.1*	*72%*	*0.12*
Hillesluis	*118*	*0.39*	*Low neighborhood attachment*	*11.4*	*54%*	*0.18*
Pendrecht	*74*	*0.47*	*Interaction with anti social peers*	*8.6*	*73%*	*0.13*
Hoogvliet Zuid	*162*	*0.42*	*Low neighborhood attachment*	*4.2*	*38%*	*0.26*
7 Boroughs						
Stadscentrum	*209*	*0.38*	*Low neighborhood attachment*	*6.2*	*40%*	*0.23*
Delfshaven	*975*	*0.38*	*Low neighborhood attachment*	*6.4*	*41%*	*0.22*
Overschie	*228*	*0.40*	*Low neighborhood attachment*	*4.0*	*31%*	*0.28*
Noord	*613*	*0.33*	*Low neighborhood attachment*	*3.4*	*23%*	*0.28*
Ijsselmonde	*164*	*0.45*	*Low neighborhood attachment*	*3.3*	*25%*	*0.34*
Feyenoord	*636*	*0.33*	*Low neighborhood attachment*	*5.6*	*36%*	*0.21*
Hoogvliet	*318*	*0.38*	*Low neighborhood attachment*	*4.5*	*37%*	*0.20*
City-wide						
Rotterdam	*5657*	*0.33*	*Low neighborhood attachment*	*3.5*	*36%*	*0.21*

Rotterdam	*5657*	*0.33*	*Interaction with anti social peers*	*1.23*	*13%*	*0.29*
Rotterdam	*5657*	*0.33*	*Parental attitudes favorable towards alcohol and drug use*	*1.44*	*17%*	*0.27*
Rotterdam	*5657*	*0.33*	*Family conflict*	*1.26*	*13%*	*0.29*
Rotterdam	*5657*	*0.33*	*Poor family management*	*1.38*	*17%*	*0.27*

But what does it mean for the prevalence of anti-social behavior in Rotterdam if targeted prevention is successful? Targeting specific risk factors in the eleven high scoring neighborhoods (Low neighborhood attachment in Oude Westen, Bospolder, Delfshaven, Oud Mathenesse, Spangen, Hillesluis, and Hoogvliet-Zuid; Interaction with anti-social friends in Agniesebuurt and Pendrecht; Positive attitudes towards alcohol and drugs in Overschie) can decrease the prevalence of anti-social behavior of the whole city from 33% to 29.4%. If the highest risk factor can be successfully reduced in the seven boroughs anti-social behavior by youngsters in Rotterdam should decrease by nearly 9% (prevalence of anti-social behavior potential: 24.1%). Although perhaps utopian, successful city-wide prevention policy is also imaginable: all the youngsters of Rotterdam are targeted and a specific risk factor is reduced in all areas. Anti-social behavior among youngsters can be potentially reduced from 33% to 21% if Low neighborhood attachment (AF=36%) is successfully targeted city-wide.

CONCLUSION

1. DISCUSSION

Anti-social behavior is a social problem in many cities. It is impractical to address it merely reactively. Preventive strategies have more potential but they should be targeted. This research addresses the extent to which youngsters engage in anti-social behavior in the urban context of Rotterdam. In this research we make also use of variables of which previous scientific research showed are associated with this anti-social behavior (risk factors). These risks are part of their daily live. We found the influence of Low neighborhood attachment to be particularly high in this metropolitan area. In this article we built up a predictive model which may form the basis for preventive work on anti-social behavior.

But there are also area differences in cities in the extent of anti-social behavior and the risk factors most closely linked to it, as our findings in Rotterdam also show. Using the predictive model of the first part of this article we explored the possibilities of social policy in this urban context in the second part. We set a target (as cities often do), in our case to lower anti-social behavior by three percent city-wide. First, we detected high-prevalent environments (eleven of the 55 neighborhoods and seven of the eleven boroughs) where the level of anti-social behavior is significantly higher than the 'target-mean'. For each of these areas we selected a risk factor (the highest risk factor associated with anti-social behavior for that area in terms of Odds Ratio) and worked out the population Attributable Fraction (a good measure for expressing potential health gains). This Attributable Fraction expresses the maximum possible benefit when the preventive intervention has maximum success in pushing back the most important risk factor for this area.

Successful targeted prevention in high prevalent neighborhoods can lower the level of anti-social behavior in Rotterdam by a maximum of 3.6%. By eliminating the highest risk factor (Low neighborhood attachment) in the high prevalent boroughs, anti-social behavior of youngsters (12-15 years) could be decreased with 9% in this metropolitan city at most. If the most important risk factor (again Low neighborhood attachment) is targeted city-wide anti-social behavior could decrease by 12% (from 33% to 21%).

To tackle anti-social behavior effectively it is good to focus on specific problem areas, identify most closely risk factors associated with that area and to put a package of preventive policies and interventions together to address this. The package of effective preventive policies and interventions should be different for the different environments. Also their possible results will be different. Scientists can and should support city councils with selecting areas, with defining associated variables, defining realistic results and building up rational preventive policy. We (government, scientists and practitioners) should think more clearly and systematically about how the development of youngster can be improved and act accordingly.

2. LIMITATIONS

Clearly, some aspects of this study need further elaboration. In relation to the instrument, we point out that the Netherlands has a number of reliable diagnostic instruments for clinical problems and backgrounds (such as intelligence and depression). But there is a lack of sound social diagnostic instruments for an aggregated level (like schools, neighborhoods and cities). In the Netherlands there are youth monitor reports and census statistics for youngsters. These instruments describe the size of the problems, but they provide no direction for intervention strategies. Our approach goes further. Our research strategy supplies policymakers and people in practice with information on the prevalence of problems (like anti-social behavior) but also with information on the underlying factors for the problems (in this case risk factors).

This study is limited to a youth sub-population (12-15 years). Youngsters of 16 and 17 years are not included in the study. In many studies conducted in various countries, the age crime curve is described. The development of delinquency over the years develops as a U-curve. The prevalence during early adolescence is low, increases quickly halfway through adolescence and decreases during late adolescence. This study is limited to younger adolescents and the development of anti-social behavior cannot therefore be described in its entirety. In future studies we will devote attention to this issue and broaden the sample to include youngsters from 12 to 18 years, fully encompassing the period from leaving primary school to the beginning of adulthood.

3. POLICY RECOMMENDATIONS

This research provides a more sophisticated method for targeting crime-prevention in an urban context. The method applied here in the second largest city of the Netherlands, can be adapted to other communities as well. It is also hoped that significant variation across communities may be detected and that most of the variance can be explained by the risk model used here. Cities need these insights for successful urban policy.

With the introduction of measures through which health gains can be mapped out, we sketch a rather optimistic picture of social intervention policies. A complete wiping out of the risk factors in neighborhoods, boroughs and city- wide should not be seen as realistic. But these measures and calculations give policymakers and practitioners at least some handles for the decision making process and targeted strategies. Potential outcomes provide politicians and professionals with a number of insights for a knowledge-based and realistic urban policy. In the coming years Dutch youth policy will become more and more decentralized. The municipalities need perspectives for action, and methods for legitimizing their social policies, especially urban prevention policy.

Of course, this research has its limitations because it has been conducted in one urban context only, the metropolitan context of Rotterdam. In the future the research projects will be generalized to other environments and to medium-sized cities and rural areas. We will also investigate whether Rotterdam is representative of Dutch metropolitan areas.

In this article we concentrated on choices, chances and possible outcomes from knowledge-based preventive interventions; we explored possibilities of risk orientated prevention and gave arguments for a targeted preventive strategy.

ACKNOWLEDGEMENTS

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6. DIFFERENT WORLDS, COMMON ROOTS. A MULTILEVEL ANALYSIS OF YOUTH VIOLENCE AND DELINQUENCY IN THE NETHERLANDS ANTILLES AS A BASIS FOR CRIME PREVENTION

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ABSTRACT

Most research on the prevalence, determinants and variations of violence and delinquency among youngsters is conducted in Western societies. This multilevel study is set in the Netherlands Antilles (NA) and aims to build up prognostic multilevel models as a basis for targeted crime prevention in a non-western area. Data were collected from a sample of adolescents in the NA. Non-hierarchical and hierarchical analyses were used to investigate similarities and differences between individuals (n=7,842), neighborhoods (N=109) and islands (J=5) in the NA. Descriptive analyses of violence and delinquency are included. Associations and correlations with demographic variables, risk factors and protective factors and the variation on neighborhood and island level are analyzed. Subsequently, prognostic multilevel models are constructed of violence and delinquency among youngsters, by using different variables (socio-demographic factors, risk factors and protective factors) nested within different contexts (neighborhood and island) in the Netherlands Antilles. Risk and protective factors are also strong predictors of violence and delinquency among youngsters in this part of the non-western world. These factors should constitute important strategic targets for social policy and crime prevention.

INTRODUCTION

Predictors of problem behaviors are important strategic targets for the prevention of these behaviors (Coie et al. 1993, Hawkins, Catalano & Miller 1992). Longitudinal and epidemiological studies have identified important risk and protective factors which are correlated with problems during adolescence, such as violence and delinquency (Loeber, Farrington 2001, Loeber, Slot & Sergeant 2001, Loeber et al. 2008). Insights into the prevalence and determinants of problem behaviors should be the starting point for social policy. Social investment should be legitimated by sound social diagnosis (Offord et al. 1999). By targeting these predictors a start can be made in restoring safe and healthy environments and, ultimately, reducing the influx of new cases of specific problem behavior. To inform and rationalize the preventive interventions we need not only insights into the prevalence of problem behaviors but also into causes and correlates of different kinds of problem behaviors in different contexts. Theoretical and empirical insights into risk and protective variables of individual respondents and their direct environments like families, schools, friends and neighborhoods (or other areas) make this preventive work possible. Most research on the prevalence, social determinants and prevention of problem behaviors in youngsters is conducted in western world settings. Although it is clear that there is a lot to learn about problem behaviors and their determinants in different cultures, far less work is done on mental health research in other parts of the world (Bayar, Sayil 2005, Karstedt 2001, Keating, Hertzman 1999, Kloep et al. 2009, Vazsonyi et al. 2008).

In 2006 a study on various problem behaviors in youngsters and the determinants of these behaviors was conducted among the youth of the Netherlands Antilles (NA). This was done at the request of the Government of the Netherlands Antilles. The emotional, mental and behavioral problems of youngsters in this Caribbean area are considerable and include school drop-out, depression and sexuality related problem behavior. But also anti-social behavior, delinquency and violence of youngsters are a social problem in this area, often drugs related. The age of first offenders is decreasing and misdemeanors become more serious. 36% of the population in prison is younger than 24 years (Centraal Bureau voor de Statistiek NA 2001, Centraal Bureau voor de Statistiek, NA 2001, Centraal Bureau voor de Statistiek NA 2003, Centraal Bureau voor de Statistiek NA 2004). For years the government of the Netherlands Antilles had already taken various measures to address these social problems. The problems undermine the health of the youngsters themselves and the people around them as well as the well-being

of society in general. At the same time the government was also searching for a more socio-political solution. What could be done to tackle the problems at an early stage; how can more strategic targets for social policy be developed; what are the differences between the young individuals concerned and what are the differences between the various neighborhoods and islands in the NA? The scientific literature on this topic provides some evidence that the neighborhoods and regions play a role in the development of problem behavior (Wilson 1987, Sampson, Raudenbusch & Earls 1997, Furstenberg 1999, Duncan, Raudenbusch 1998, Leventhal, Brooks-Gunn 2000, Kawachi, Berkman 2003).

In this article the impact of predictors on violence and delinquency in a non-western part of the world are examined in a large sample of a general population of youngsters in the Netherlands Antilles. This kind of research may also be important for regional public health in non-western countries. We sought to address gaps in earlier studies by examining the prevalence and predictors of violence and delinquency in youngsters aged between 13 and 18 years and we looked for variation in the contexts of the five islands and 109 neighborhoods. We also researched the correlates and causes of violence and delinquency in a more comprehensive perspective. With the use of various groups of factors (socio-demographic variables, risk factors and protective factors) violence and delinquency are analyzed on three different levels (individual level, neighborhood level and island level). We asked ourselves: What are the best multilevel/hierarchical models for violence and delinquency with demographic covariates, reliable risk factors and protective factors on individual—as well as on neighborhood—and island level and what is the predictive power? And ultimately, what are the potential uses of the models to develop strategic targets for social policy and crime prevention?

METHODS

PARTICIPANTS

The Netherlands Antilles has a population of 24,180 youngsters in the 11 to 19 age group.(Centraal Bureau voor de Statistiek NA 2001) The 37 schools which participated in this research have a population of 11,054 youngsters spread over 481 classes (Boer, Roorda 2006). 10,117 questionnaires were distributed. There was a response rate of 87% (n=8,761).

Table 1. *Youth in Education*

	Bonaire	Curacao	Saba	St. Eustat.	St. Maarten	Neth Antilles
	2001	2001	2001	2001	2001	2001
13-15 year old in primary school, %	14.3	24.5	15.2	20.2	25.3	23.9
Participation in education of 6-14 year old, %	99.5	99.6	100	99.7	98.4	99.4
Participation in education of 15-17 year old, %	82.1	90.5	86.2	88.1	80.2	88.8
School drop-out raten 15-24 year old., %	43.5	46.3	23.5	44.8	39.3	44.2

note*(Centraal Bureau voor de Statistiek NA 2001)*

12-year old age group is relatively small in secondary schools in the Antilles (see Table 1). Many of the children stay or have to stay longer at primary school (23.9% of primary school children are in the 13 to 15 age group). We decided to take the group of 12-year olds out of the sample. Likewise, the group of 19-year old students was far too small to be representative. Accordingly, we restricted the sample to the 13 to 18 year old students. Ultimately, the total sample comprised 7,842 youngsters living on five islands of the Netherlands Antilles and participating in schools. The vast majority of these live on Curacao (5,937; 76%), as Table 2 shows. The others live on Bonaire (540; 7%), Sint (St) Maarten (1,154; 15%), Sint (St) Eustatius (137; 2%) and Saba (74; 1%). The

spread of youngsters over the five islands in this dataset is the same as the Census data (Centraal Bureau voor de Statistiek NA 2001). The youngsters are students from 37 schools (with a minimum of 52 students and a maximum of 540 students). 26 schools are located on Curacao, 6 on St Maarten, and one school on each of the other three islands (Bonaire, St Eustatius and Saba).[1]

Table 2. *Dataset Used*

Island	N	Percentage	Boy	Girl	13	14	15	16	17	18
Curacao	5,937	76	46	54	18	18	19	17	16	11
Bonaire	540	7	46	54	14	20	25	21	15	4
St Maarten	1,154	15	44	56	32	14	17	19	9	9
St Eustatius	137	2	50	50	25	28	23	6	15	3
Saba	74	1	50	50	15	28	22	19	9	7
Total	7,842	100	46	54	20	18	20	18	15	10

MEASURES

The research instrument used for this research is adapted from the Communities that Care Youth survey (Pollard, Hawkins & Arthur 1999, Arthur et al. 2006, Glaser et al. 2005). The survey was developed from the 1990s onward, to measure problem behavior in youngsters aged 11 to 18-years and their risk- and protective factors. It can be conducted relatively easily in schools. With this instrument the quality of the social domains in which youngsters grow up (family, school, friends and communities) can be measured. In addition, profiles of cities, communities, neighborhoods or other areas can be created and compared with each other. This instrument was tested among groups with different socio-economic backgrounds (Glaser et al. 2005). In recent years the survey was also performed and tested in various other countries like Australia, Canada, Great Britain and the Netherlands (Jonkman et al. 2006).

PROCEDURE

Because of the variety of languages on the different islands three versions of the school survey were compiled at the start of this research. The Dutch version of the questionnaire constituted the starting point but some questions had to be adapted toward the situation in the Netherlands Antilles (e.g. there are differences

1 The following schools participated in this research: On Curacao: Albert Schweitzer Parera, Ancilla Domini, Dr. A. Schweitzer, Kolegio Erasmo, Gouv. Lauffer School, Ignatius College, Maria College, Maris Stella, Marnix Cas Cora, Marnix Mavo, Mgr. Zwijssen, Pierre Lauffer School, Regina Pacis, Scholengemeenschap Parera, Scholengemeenschap Joseph Civilis, SGO Goslinga, SGO Jacques Ferandi, Sint Martinus Mavo, Stella Maris College, Triniteit College, Sint Jozef, Juan Pablo Duarte, Sint Paulus, Peter Stuyvesant College, Maria Imaculata Lyceum, Radulphus College, International School, Vespucci College, Abel Tasman. The schools of Sint Maarten which participated: St. Dominic High school,St. Maarten Academy, Sundial, Sint Maarten Vocational, Milton Peters College, Private School; In Bonaire: Scholengemeenschap Bonaire participated, in Sint Eustatius: Gwendolyn van Putten School and in Saba: Saba Comprehensive school.

between school types in the Netherlands compared to the Netherlands Antilles). Besides a new Dutch version, versions in the local language of Papiamentu and English were also compiled. The school survey was first tried out in two schools on two islands (Curacao and St Maarten, total sample size = 173). The reliability of various scales was too low and these were again adapted. The new version was then tried out among ten students. The definitive version was conducted among all the students of the secondary schools of the five islands in the Netherlands Antilles. The organization of the fieldwork was the responsibility of the NA Central Bureau of Statistics.

The fieldwork started in February 2006 and continued during the following half year. Contact was made with individual schools and school boards. They were officially invited to participate in the research. Researchers on the various islands were given information about the project and how the work should be done in the schools. The interest and cooperation from the schools was very positive. All 37 secondary schools of the Netherlands Antilles participated in this research.

RISK FACTORS AND PROTECTIVE FACTORS

Risk factors (as approximations of causes) and protective factors (as positive factors for pro-social behavior and buffers against the impact of risk factors) are associated with domains in which youngsters grow up: family, school, friends and communities (Loeber et al. 2008). In this article we use only the factors which also demonstrated high reliability in this non-western area (Cronbach's alpha .70 or higher). Six risk factors are expected to be related to a higher level of problem behavior in this dataset. For the risk factors in the domain *family* we used 1). 'History of problem behavior': Are the children growing up in a family in which there is a history of criminal behavior, alcohol or drug use? (4 items, alpha .76); 2). 'Problems with family management': Does the family have problems with setting rules, controlling and supporting children? (8 items, alpha .73); For the domain *school* we used 3). 'Lack of bonding with school': Do they feel themselves committed to the school? (5 items, alpha .70); For the domain *friends* we use three scales: 4). 'Positive attitude toward anti-social behavior': Do they express positive attitudes toward violence and delinquency? (5 items, alpha .72); 5). 'Friends who show anti-social behavior': Are they associated with friends who engage in violence or delinquency (6 items, alpha .80); For the domain *community* one scale is used: 6). 'Lack of organization in the community': Does the community have a high population density, physical deterioration and high level of adult crime? (5 items, alpha .81).

We also used two protective factors, which are expected to have a lowering influence on problem behavior. These are both part of the domain *family*: 1). 'Bonding with family': Do they feel a strong emotional attachment to their parents or legal guardians? (5 items, alpha .72); and 2). 'Possibilities for positive involvement': Do they have opportunities for involvement in pro-social activities (3 items, alpha .72).

For our analyses we dichotomized the predictors (risk factors and protective factors). Although we know that with this binary technique we lose information, logistic regression analysis gives us the opportunity to interpret the results easily and, ultimately, we can present the cumulative effects of important underlying factors for a broader audience. Students got a 'yes' on the six risk factors and two protective factors when they scored higher than the median, a 'no' when they scored lower than the median (Arthur et al. 2006).

OUTCOMES: VIOLENCE AND DELINQUENCY

For this article we analyzed two correlated outcomes: violence and youth delinquency. The two problem behaviors were researched on a last-year basis.

Violence: Violence is defined as all acts which lead or could lead to physical injury. Threatening with physical violence is also part of this problem behavior. Violence is often divided into offences with deadly or physical injury, criminal offenses against life, maltreatment, threatening, raid, extortion and sexual offenses. (Jonkman et al. 2006, Elliott, Tolan 1999, Junger-Tas, Steketee & Moll 2008) Violence is researched by four questions regarding last year events: 1). Did you carry a weapon (weapons)?; 2). Were you involved in fighting (fighting)?; 3). Did you hit someone with the intention of hurting (hitting)?; 4). Did you threaten someone to get money (assault)?

Youth delinquency: Youth delinquency is a generic term covering various punishable acts by youngsters. Besides violent offenses, crimes against property, arson and destruction are also part of youth delinquency. (Jonkman et al. 2006, Elliott, Tolan 1999, Junger-Tas, Steketee & Moll 2008) We asked five questions regarding delinquency: 1). Did you intentionally destroy anything on the street (vandalism)?; 2). Did you steal anything from a shop (theft shops)?; 3). Did you steal anything from school, e.g. from another student (theft schools)?; 4). Did you sell stolen items to someone else, e.g. to another student (selling stolen items)?; 5). Were you arrested by the police (contact with police)?

For these analyses we used binary data for violence and delinquency. Students scored a 'yes' on one of these problem behaviors when they answered yes to one or more of their items. They got a 'no' when they were involved in none of the items.

DATA-ANALYSES

Two sets of analyses were conducted to address our research questions. In the first descriptive part, prevalence of violence and delinquency were studied on the basis of the percentage of students engaged in these problem behaviors and the level of significance for the different items. We looked for the total amount for the

NA, but also for socio-demographic differences by age, gender and school type. We examined the relationship between violence and delinquency on the one hand and three demographic factors (gender, age, school type), six risk factors (History of problem behavior, Problems with family management, Lack of bonding with school, Positive attitudes toward anti-social behavior, Friends who show anti-social behavior, Lack of organization in the community) and two protective factors (Bonding with family, Possibilities for positive involvement) on the other hand. In this part we also researched the variations of violence and delinquency between the different islands and different neighborhoods. For the constructing of neighborhoods we used the administrative boundaries of census block-groups from the Antilles with their own Zip-code (Centraal Bureau voor de Statistiek NA 2001).We used only neighborhoods for which we have data from 20 or more youngsters. For this purpose we could make use of the data of 109 communities (with a minimum of 20 students and a maximum of 326). We conducted the first part of the statistical analyses using Stata, version 10 (Rabe-Hesketh, Everitt 2007, Kohler, Kreuter 2008).

Because of the clustered character of our data we employed hierarchical modeling, using MLWin 2.20 (Rabash et al. 2005). For this second set of the analyses we used multilevel analysis to develop the best and most simple prognostic model for violence and delinquency. We account for the clustering effects of the sampled youngsters within neighborhoods and islands and create a model for the relationships between individuals, neighborhoods and islands and the predictor variables. We start with two and three level intercept models for violence and delinquency. First a group of socio-demographic variables are moved forward, followed by another group of predictors (risk factors and protective factors). Fixed influences and variance components are researched within the prognostic models. The two hierarchical models proposed are the two best possible models for violence and delinquency. We researched the potentials of the models by using a number of indicators.

RESULTS

DESCRIPTIVES

Youngsters in the NA score particularly highly on fighting and hitting (see Table 3). When we put the items in total scores we see that 44% of Antillean youngsters engage in one or more forms of violence and 18% in one or more forms of delinquency.

Table 3. *Prevalence of Violence and Delinquency in the Netherlands Antilles*

	Total	Curacao	Bonaire	St Maarten	St Eustatius	Saba
Violence						
Weapons	0.12	0.12	0.10	0.14	0.16	0.27
Fighting	0.28	0.28	0.25	0.31	0.45	0.45
Hitting	0.27	0.24	0.24	0.39	0.54	0.53
Assault	0.05	0.03	0.03	0.13	0.11	0.19
Violence total	0.44	0.39	0.44	0.53	0.64	0.69
Delinquency						
Vandalism	0.15	0.14	0.17	0.17	0.26	0.35
Theft shops	0.10	0.06	0.12	0.23	0.34	0.44
Theft school	0.08	0.06	0.09	0.13	0.23	0.19
Selling stolen items	0.04	0.03	0.02	0.09	0.05	0.11
Contact with police	0.04	0.04	0.08	0.04	0.14	0.10
Delinquency total	0.18	0.14	0.22	0.32	0.43	0.50

Boys show nearly two times more violence (55% to 32%) and delinquency (23.7% to 12.9%) than girls (as Table 4 shows). Violence increases slowly over the years. Delinquency is highest among 15, 16 and 17 year olds. Violence is higher on lower school types and for delinquency there is hardly difference.

Table 4. *Violence and Delinquency by Gender, School Type and Age*

	Violence (%)	Delinquency (%)
Male	55.0	23.7
Female	32.0	12.9
12 years	37.8	21.4
13 years	37.8	12.4
14 years	43.1	15.4
15 years	42.9	19.3
16 years	43.1	19.6
17 years	43.5	21.1
18 years	45.0	19.7
School type high	31.9	17.7
School type low	44.3	18.5

We also looked for the estimated odds between violence and delinquency and different determinants (Risks and Protection, see Table 5).

Table 5. *Estimated Odds between Violence and Delinquency and Determinants*

Determinants	Violence	Delinquency
Risks		
History of problem behavior	2.08(1.89/2.29)	2.01(1.79/2.26)
Problems with family management	1.71(1.56/1.89)	1.99(1.76/2.24)
Lack of bonding with school	1.95(1.78/2.13)	2.51(2.22/2.83)
Positive attitudes toward anti-social behavior	2.18(1.97/2.42)	3.06(2.71/3.45)
Friends who show anti-social behavior	5.71(4.98/6.54)	5.33(4.66/6.09)
Lack of organization in the community	1.90(1.74/2.09)	1.78(1.58/2.00)
Protection		
Bonding with family	0.71(0.59/0.85)	0.51(0.42/0.63)
Possibilities for positive involvement	0.65(0.54/0.79)	0.55(0.44/0.69)

The risk factor 'Friends who show anti-social behavior' is particularly high for violence (OR: 5.71). But also 'Positive attitudes toward anti-social behavior' (OR: 2.18) and 'History of problem behavior in the family' (OR: 2.08) are high correlating risk factors. The two protective factors lower the chance of violence. 'Possibilities for positive involvement' lowers the violence rate (OR: 0.65) as does 'Bonding with family' (OR: 0.71).

Overall we see the same trend for delinquency. For delinquency school type isn't a significant predictor. In general there is a higher correlation between risk factors and outcome than is the case for violence. Here too, 'Friends who show anti-social behavior' (OR: 5.33) is the highest correlating risk factor. Both protective factors are negatively correlated with delinquency.

We subsequently looked at the variation of violence and delinquency between the five islands. The scores for violence are overall higher in St Maarten, St Eustatius and Saba (three northern islands) than in Curacao and Bonaire. For delinquency we also see higher levels on the Windward Islands (St Maarten, St Eustatius and Saba) than on Leeward Islands (Curacao and Bonaire).

We also looked at prevalence variation between 109 neighborhoods. We see significant differences between the prevalence of violence and delinquency in the neighborhoods. Figure 1 shows that the percentage of violence among youngsters in communities of the Netherlands Antilles ranges from 20% (community with the lowest level) to 74% (highest level). For delinquency this is between 4% and 55%, as Figure 2 shows.

Figure 1. *Violence in Different Neighborhoods in Netherlands Antilles*

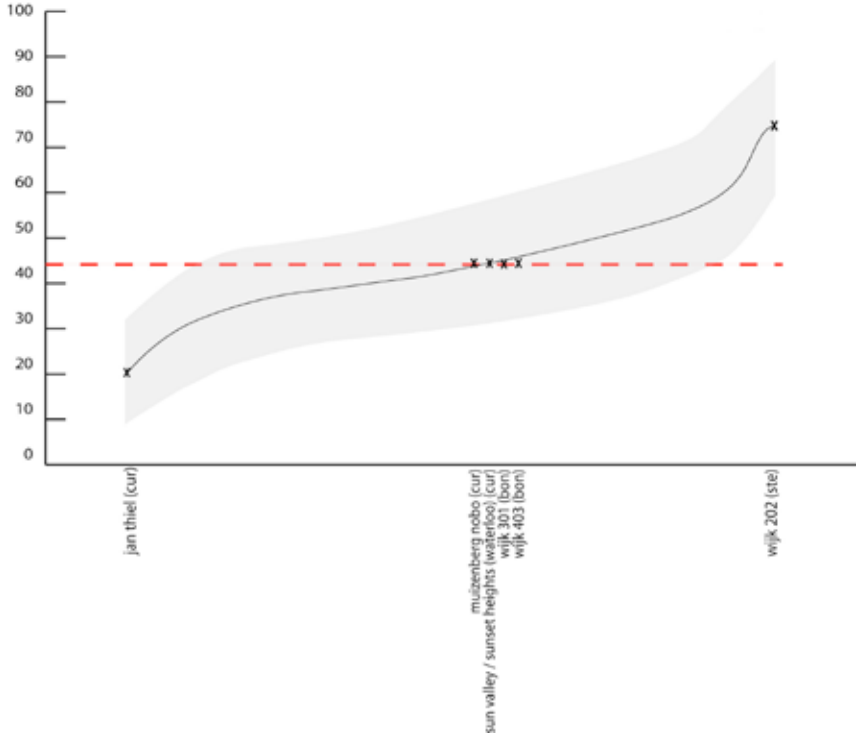
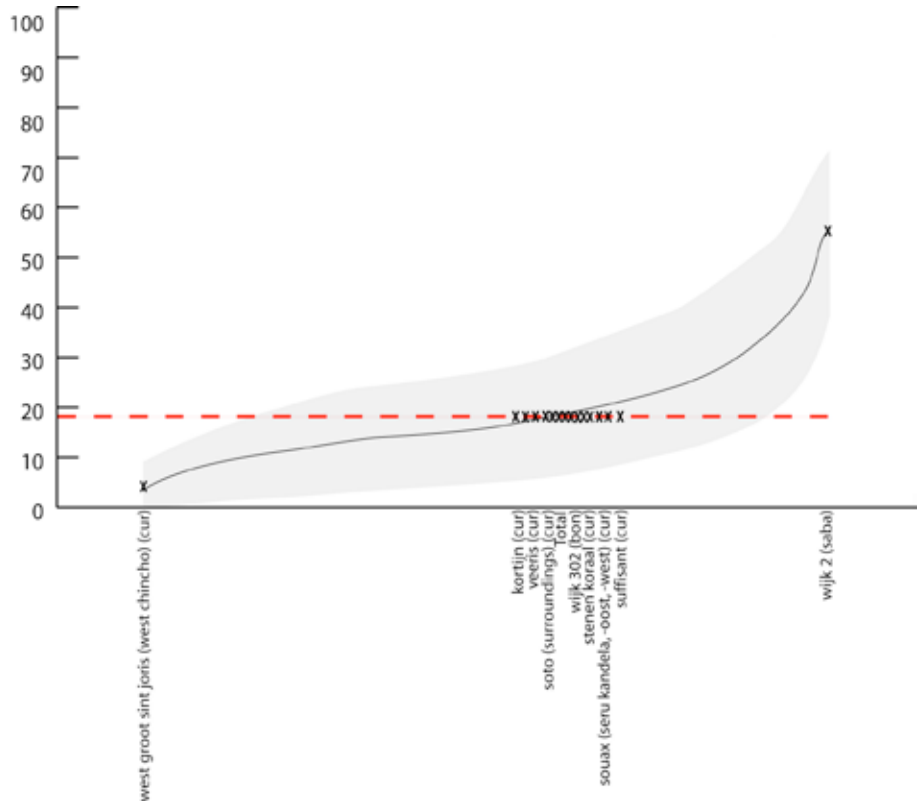


Figure 2. *Delinquency in Different Neighborhoods in Netherlands Antilles*



HIERARCHICAL MODEL BUILDING

After identifying important predictors of violence and delinquency and determining significant variation of prevalence between environments (islands, neighborhoods) we added the second part of the information to a multilevel analysis of this sample (Rabash et al. 2005, Raudenbusch, Bryk 2002, Snijders, Bosker 1999, Luke 2004, Bickel 2006, Twisk 2006, Rabe-Hesketh, Skondal 2008, Gellman, Hill 2007). In this part we are especially interested in constructing prognostic models which may form the basis for targeting preventive policy in this non-western area. With the use of hierarchically clustered covariates (individual, neighborhood and islands) we constructed predictive models for violence as well as for delinquency.

We started with an intercept random model on neighborhood level (Model A). Because we use logistic regression we cannot use the Wald test on variance parameters. If the magnitude of the variance is more than two times higher than the standard error we have to consider the random intercept (Twisk 2006). Model B incorporates the influence of the island level. In our case we propose a three level model for violence and delinquency. Level 1 scores (individuals) can vary across level 2 (neighborhoods) and level 3 (islands).

After this we put socio-demographic variables in the intercept models: gender, age and school type (Model C). In Model D we added the significant risk factors and the protective factors. We also tried out a slope model for violence and delinquency. The results here, however, were no longer significant (for violence or delinquency). The results of the different models are summarized in Table 6 (for violence) and Table 7 (for delinquency). The last model is the best prognostic model for each of the two problem behaviors (Model D for Violence and Delinquency).

Table 6. *Violence. Multilevel Analysis for the Effects of Risk and Protective Factors*

	Model A		Model B		
	Coef.	(SE)	Coef.	(SE)	
Fixed part					
Intercept	0.335	(0.028)	0.139	(0.091)	
Random part					
Vok (island)			0.132	(0.050)	
Uojk (neighborhood)	0.159	(0.032)	0.560	(0.024)	
	Model C		Model D		: 4
	Coef.	(SE)	Coef.	(SE)	
Fixed part					
Intercept	0.366	(0.102)	0.196	(0.153)	
Demographics					
Gender (ref=boys)	0.954	(0.048)	0.880	(0.053)	22.00%
Age (ref=13 years)	0.034	(0.017)	0.042	(0.018)	1.00%
School type (ref=High)	0.408	(0.087)	0.452	(0.090)	11.00%
Risks					
Fam: History of problem behavior			0.612	(0.055)	15.00%
Fam: Problems with fam. Management			0.032	(0.055) ns	
School: Lack of bonding			0.270	(0.054)	6.75%
Peers: Positive attitude toward anti-social behavior			0.590	(0.063)	14.75%
Peers: Friends who show anti-social behavior			1.120	(0.067)	28.00%
Community: Lack of ortganization			0.363	(0.053)	
Protection					
Fam: Bonding with family			0.010	(0.120) ns	
Fam: Possibilities for positive involvement			0.346	(0.125)	8.65%
Random part					
Vok (island)	0.130	(0.050)	0.034	(0.017)	0.85%
Uojk (neighborhood)	0.046	(0.024)	0.058	(0.028)	1.45%

Note. *ns: not significant*

For violence we propose Model D: intercepts on neighborhood and island level, three demographic covariates (gender, age, school type), five risk factors (History of problem behavior (family); Lack of bonding (school); Positive attitude toward anti-social behavior (friends); Friends who show anti-social behavior (friends); Lack of organization (community) and one protective factor (Possibilities for positive involvement (family).

Boys show significantly more violence than girls, older youngsters demonstrate more violence than younger ones and youngsters in lower types of secondary school exhibit more violence than youngsters in higher types of secondary schools. With the exception of Problems with Family Management, all the other risk factors are significantly related to violence, likewise within the clustered character of the data: the higher the risk factor the higher the chance of engaging in violent behavior. In particular the risk factor Friends who show anti-social behavior is a strong predictor (OR: 3.06; CI 95%: 2.93-3.19), here adjusted for the other variables. There is one significant protective factor (Possibilities for positive involvement (family): this protective factor lowers the prevalence of violence (OR: 0.71; CI 95%: 0.47-0.95). Differences remain, although small, between islands and between neighborhoods.

We used two additional indicators to estimate the potential of the predictive model. In Table 6 we added a 'divide by 4' column (Gelman & Hill, p. 82) (Gellman, Hill 2007). These percentages give the maximum possible difference made by the factor to violence, which is important knowledge for preventive science. Investing, for example, on the risk factor Friends who show anti-social behavior (the risk factor with the strongest correlation with violence) can make a maximum difference of 28% to anti-social behavior.

In this second part of the article we are especially interested in the question: what is the best strategy to lower violence among youngsters in the Netherlands Antilles. Now that we know the important fixed variables and the variance components we can use the prediction possibilities of the best statistical model. We can predict the probability of youngsters becoming violent when we know their gender, age, school type, and when we know their risk and protective factors. Thus we can estimate the chance for a youngster growing up in a 'bad neighborhood' on one of the northern islands to become violent. When the youngster is a boy, is older, attends a lower school type, grows up with risk factors in his family, school, his friends and community, the likelihood that he will become violent is 94.7%. If it is a girl and she is younger and attends a higher school type, grows up without risk factors in the different domains of development, has possibilities for positive involvement in the family and grows up in the better communities of the southern islands the probability that she will become violent is 7.9%. For all the different possibilities we can estimate these changes now we know the best model. This is the second additional indicator to check the power of this predictive model.

Table 7. *Delinquency. Multilevel Analysis for the Effects of Risk and Protective Factors*

	Model A		Model B		
	Coef.	(SE)	Coef.	(SE)	
Fixed part					
Intercept	1.736	(0.040)	1.337	(0.154)	
Random part					
Vok (island)			0.412	(0.145)	
Uojk (neighborhood)	0.424	(0.065)	0.086	(0.039)	
	Model C		Model D		:4
	Coef.	(SE)	Coef.	(SE)	
Fixed part					
Intercept	1.306	(0.165)	1.924	(0.210)	
Demographics					
Gender (ref=Boys)	0.736	(0.063)	0.548	(0.069)	13.70%
Age (ref=13 years)	0.118	(0.021)	0.043	(0.023)	1.08%
School type (ref=High)	0.307	(0.112)	0.298	(0.217) ns	
Risks					
Fam: History of problem behavior			0.516	(0.069)	12.90%
Fam: Problems with fam. Management			0.084	(0.070) ns	
School: Lack of bonding			0.378	(0.071)	9.45%
Peers: Positive attitude toward anti-social behavior			0.724	(0.072)	18.10%
Peers: Friends who show anti-social behavior			1.099	(0.072)	27.50%
Community: Lack of ortganization			0.217	(0.069)	5.40%
Protection					
Fam: Bonding with family			-0.235	(0.134)	5.90%
Fam: Possibilities for positive involvement			-0.270	(0.143)	6.75%
Random part					
Vok (island)	0.407	(0.144)	0.234	(0.088)	5.80%
Uojk (neighborhood)	0.067	(0.038)	0.039	(0.037)	0.01%

Note. ns: not significant

For delinquency (Table 7) we also propose Model D, a three level random intercept model with three socio-demographic variables (gender, age, school type), five risk factors: 1). History of problem behavior (family); 2). Lack of bonding (school); 3). Positive attitude toward anti-social behavior (friends); 4). Friends who show anti-social behavior (friends); 5). Lack of organization (community) and two protective factors: 1). Bonding with family (family) and 2). Possibilities for positive involvement (family). Here we see nearly the same pattern as for violence. For the intercept models (Model A and Model B), delinquency on the level of neighborhood and island, is higher.

In Model C we add the socio-demographic variables. Boys are more delinquent than girls. The older the youngster the higher the level of delinquency. School type is not significant here.

In Model D we add the risk and protective factors and see if the influence of each of these predictors is significant. Also here, the risk factors are positively related to delinquency (higher risk factors show higher delinquency, as is shown in theory in western studies). And likewise here, as we saw earlier for violence, the risk factor Friends who show anti-social behavior is the best predictor (OR: 3.01; CI 95%: 2.87-3.15, adjusted for the other variables). Here we see negative relationships between delinquency and the two protective factors ('Bonding with family', and 'Possibilities for positive involvement'). Fairly important differences remain between islands and there are slight differences between neighborhoods.

Reducing the influence of the risk factor Friends who show anti-social behavior can make a maximum difference of 27.5% ('Gelmans Divide by 4- rule') (Gellman, Hill 2007).

Now that we have this information and have developed the predictive model for delinquency we can estimate the likelihood of becoming delinquent. Here too, we have to take account of the socio-demographic variables, any possible risk factors and/or protective factors. And we have to know in which neighborhood or island the youngster lives. The minimum probability of delinquency is 2.8% ('positive environment'), the maximum chance is 89.5% ('negative environment').

CONCLUSIONS

There are clear indications that the various emotional, mental and behavioral health problems of youngsters in the Netherlands Antilles are considerable. This study also confirms the high general level of violence and delinquency. Because not all 'the burden of this suffering'(Offord et al. 1999) can be lowered by individual care, targeted social policy and prevention of youth problems should be considered seriously.

Social determinants of violence and delinquency are important targets for social policy and prevention, especially risk factors and protective factors which are correlated with these two behavioral problems. Targeting these social determinants should be starting points for a more effective social policy. The social determinants of youngsters researched in this article are part of their daily lives. They are part of the contexts and social fabric in which these youngsters grow up: of the families in which they are born, the schools where they spend thousands of hours, the friends with whom they interact and the neighborhoods in which they live. In this study of violence and delinquency we made use of six reliable risk factors and two protective factors. We see that in this non-western area these risk factors are overall significantly positively correlated with the two dependent variables violence and delinquency. The protective factors show negative associations with crime. In this research we first identified the important predictors of violence and delinquency in the NA. Predictors, researched in various studies, mainly in the western world, equally show a strong correlation in this non-western area. The prevalence levels of violence and delinquency are high in the NA, particularly on the three northern islands St Maarten, St Eustatius and Saba compared to the two southern islands of Curacao and Bonaire. The differences in the prevalence rates in the 109 researched neighborhoods are also significant.

In the second part of this article we combined all the information in a multilevel analysis, focusing on fixed and random influences on different levels (individual, neighborhood and island). With the use of multilevel logistic regression analyses we developed predictive models for violence as well as for delinquency. We ended with the best predictive model for each of these two problem behaviors. For violence and delinquency the risk factor 'Friends who show anti-social behavior' is an especially important risk factor (OR: 3.1 and 3.3 respectively,

adjusted for the other variables). Lowering important risk factors (maximum profit 28%) and improving important protective factors can have a strong influence on the outcomes. For violence we propose a three level random intercept model with three socio-demographic variables, five risk factors and one protective factor. This three level random intercept model is also the best predictive model for delinquency, without school type as predictor but with the use of both protective factors. The theoretical and empirical insights as well as the use of modern statistical instruments give us opportunities for effective social policy and prevention in the future. For policy as well for practice it is important to know where to put the energy and work. The proposed predictive models are a good basis for targeting violence and delinquency effectively.

This study is rather unique because, as far as we know, it is one of the first to investigate correlates between problem behaviors and different important social determinants (risk factors and protective factors) clustered in three levels (individuals, neighborhoods, islands) in the non-western world. Of course this innovative study has limitations. The number of social epidemiological studies on adolescence in the non-western world is scarce. Most of the groundbreaking work is done in the western world (Rutter, Giller & Hagell 1998, Hawkins et al. 1998, Elliott 1997, Sherman et al. 1996, Jonkman, Yperen & Prinsen 2008). It is difficult to compare the results of this study with other similar studies. This kind of work requires follow-up research and needs to be broadened. It also needs comparative studies set up with the same measurements to bear out the conclusions in full.

The fieldwork was conducted in schools. Although the participation of the school boards and the students in the schools was very high, this non-western area is characterized by a high level of school drop-out (especially among youngsters older than 14 years). We may expect that the levels of emotional, mental and behavioral health problems of youngsters are higher when the results of this rather large group of school drop-outs are part of the sample.

Studies of this kind in the western world are linked to research on preventive programs, strategies and interventions (Elliott 1997, Sherman et al. 1996, Jonkman, Yperen & Prinsen 2008). By building on this kind of research, effective prevention activities for violence and delinquency could be developed and implemented on a broader scale for violence and delinquency. The resources for this kind of preventive interventions are far more scarce in non-western countries and this limits the possibilities for preventive activities. Especially in these countries it is important that money is invested in disseminating effective programs, strategies and interventions on a broader scale. For political decision-making predictive studies of this nature can be important.

During the fieldwork of this study (2006) the people of the Netherlands Antilles participated in a referendum. The inhabitants of the different islands chose different futures. Although they still will work together in partnership (they all remain within 'het Koninkrijk der Netherlanden'[the Kingdom of the Netherlands]), the responsibilities for social policy changed recently (10-10-2010). We hope that work on the welfare of Antillean youngsters will be part of this partnership.

The burden of suffering among youngsters is very high in this part of the world. Children and youngsters growing up here need help and support to become healthy and social adults. Effective social policy and prevention is necessary for the wealth of this area. To become successful in crime prevention studies of prevalence, social determinants and variation of violence and delinquency in their complexity are important. Social policy and preventive activities in this area can be developed on the basis of these insights. For the science of prevention we have to broaden our knowledge about the development of problem behaviors among youngsters towards non-western areas and to research preventive practices in different cultures. This study is just a start.

7. COMMUNITY VARIATION IN ADOLESCENT ALCOHOL USE IN AUSTRALIA AND THE NETHERLANDS

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ABSTRACT

Aims: To investigate the cross-national relevance of community health promotion, this paper compared community variation in alcohol use and risk and protective influencing factors for adolescents in Australia (State of Victoria, 2009) and the Netherlands (2007/2008). Design: Multi-level analyses examined community variation in heavy episodic (binge) alcohol use (≥5 drinks in a session ≥once in the prior fortnight [>63 millilitres of ethanol]) and associations with predictors. Setting: Representative community samples of adolescents (12 -17 years). Participants: 7,812 students from 36 Australian communities and 15,082 adolescents from 124 Dutch communities. Measurements: Predictors included adolescent reports of family, school, peer and neighbourhood environments and community predictors (rurality, disadvantage). Findings: Overall alcohol use prevalence was similar in both nations. Australia had higher use at younger ages and no difference between genders. In the Netherlands older adolescents and males used at significantly higher rates. Although individual predictors were mostly similar, binge drinking was more strongly associated with poor family management, friend's use of drugs and community disorganization in Australia. Significant community variation in adolescent heavy alcohol use was observed in both countries, but was higher in the Netherlands (Inter Class Correlation 6.1%, [95% CI: 4.5 – 8.3%]) than Australia (ICC 2.4%, 1.3 – 4.5%). Youth from rural areas drank at a higher level, especially in the Netherlands. Conclusions: Targeting community level adolescent alcohol use appears feasible in both countries. Although behavioural patterns and risk and protective influences are similar in the Netherlands and Australia, important differences should be taken into account in tailoring community interventions.

INTRODUCTION

Misuse of alcohol is a problem around the world (Ezzati et al., 2002). Although alcohol use typically begins in adolescence, research on adolescent alcohol use and related problems is lacking in many regions (Karam et al., 2007). Comparative cross national studies on the variation in the prevalence and aetiology of adolescent substance use and related behaviour can make valuable contributions to policy and prevention science (Beyers et al., 2004; Jessor et al., 2002; Hosman, 2000).

Australia and the Netherlands are notable in the international drug policy context as both have adopted harm minimisation policies, focussing on reducing related-harms rather than alcohol and drug use per se (Simons Norton et al, 2010; Laar et al., 2007). Differences in youth alcohol policies in these two nations include the legal minimum age for alcohol purchase, which is 18 across Australia and 16 in the Netherlands for low alcohol drinks. This paper emerges from recent interest in both countries in supplementing existing health promotion with community preventative approaches (Loxley et al., 2005). Youth surveys of secondary school age adolescents were recently completed across the State of Victoria in Australia and the Netherlands. Both surveys used culturally adapted versions of the Communities that Care youth survey (Arthur et al., 2007; Arthur et al., 2002) that was designed to accurately measure community rates of youth alcohol and other substance use, related behaviours and risk and protective influencing factors selected to provide potential prevention targets. These surveys provided the opportunity to compare patterns of alcohol use and associations with risk and protective factors amongst adolescents in Australia and the Netherlands and to study these associations in the context of different communities.

Alcohol use among youth appears to have risen during recent decades in both Australia (White and Hayman, 2004) and Europe (Hibell et al., 2004). Australian trends show a lower initiation age, higher rates of heavy drinking (Karam et al., 2007) and increases in alcohol-related hospitalizations amongst those aged under 18 (Chikritzhs et al., 2004). Similar trends are evident in the Netherlands (Ministerie van Volksgezondheid, Welzijn en Sport, 2007), where 10 to 15 year old adolescents hospitalized for alcohol poisoning increased sixteen fold over the previous decade (Valkenberg et al., 2007).

Although cross-national comparative research studies are emerging, there has been little research comparing European and Australian youth. In this paper we sought to investigate to what extent community-level influences on individual behaviour were similar or different between these two countries. The current paper aimed to specifically investigate the extent of community variation in adolescent alcohol behaviour and their association with community-level influencing factors. Recently evaluations of the Communities That Care (CtC) intervention in the United States have shown that adolescent alcohol use can be reduced by disseminating preventive interventions encouraging healthy community environments for children and young people (Hawkins et al., 2009). Such interventions assume that communities vary both in the rates of adolescent alcohol use and in modifiable influencing risk and protective factors that can be reduced through preventive interventions (Hawkins et al., 2009). The CtC framework assumes that, differences in modifiable risk and protective factors will, at least partially, explain community variation in relevant outcomes such as adolescent alcohol use. In investigating community variation in alcohol use it is important to control for macro social determinants (structural variables) such as rural and community socioeconomic disadvantage. These higher level structural variables may also contribute to community variation in youth health behaviours and alcohol use and influence risk and protective factors in the different countries, however, they are less malleable to community intervention (Galea, 2007).

This paper compares patterns of youth alcohol use in 36 Australian and 124 communities in the Netherlands and the associations with risk and protective factors and structural variables like rural geographic location and community disadvantage. Based on existing research showing similar alcohol trends in the two countries, we hypothesise that community variation and influencing individual and structural variables will be similar in the two countries.

METHODS

PROCEDURE

In both countries data were collected using culturally adapted versions of the CtC Youth Survey (Arthur et al., 2007; Arthur et al., 2002). The adaptations sought to retain the semantic meaning of items and the resulting country specific questionnaires show similar psychometric properties to the original USA survey instrument (Jonkman et al., 2006; Beyers et al., 2004).

Australian data were collected in 2009 through the HowRU secondary student survey that was designed to provide representative epidemiological estimates for all metropolitan local government communities and non-metropolitan regions across the state of Victoria. A two-stage cluster sample design was used to recruit students. In the first stage, schools were randomly selected based on a probability proportional to each community's grade-level size from a stratified sampling frame of all schools in Victoria (government, Catholic, and independent). At stage 2, single intact classes from Grades 7, 9 and 11 were randomly selected in each school. Survey procedures were approved through the Royal Children's Hospital Ethics Office and relevant school authorities. Of the 13,501 eligible students, 10,242 (77.2%) consented and participated.

As part of the implementation of CtC in the Netherlands Municipal Health Services and independent research organisations conducted household surveys, using a common protocol and syntax in ten separated community-studies between 2008 and 2009 (mean participation rate 31,7%). All data were merged into a single dataset comprising 17,961 respondents aged between 12 and 17 years (eligible 31,3%).

SAMPLE

Community sampling in Australia (Victoria) was based on the school location within local government areas across Metropolitan Melbourne and Education Department Regions outside of the main city of Melbourne, reflecting the major community units responsible for youth services. After exclusion of respondents with missing data on relevant measures, the analytic sample comprised 7,812 students aged 12 to 17 attending schools in 36 community areas. The sample size in each area ranged from 117 to 322 (mean 219) respondents.

In the Netherlands community geographic boundaries were defined based on the City, Town, and neighbourhood catchment areas used to define and manage services. Respondents were assigned to a community according to residential address and participants were excluded when their community was unclear or had fewer than 20 survey respondents. The Netherlands analytic sample comprised 15,082 youth aged 12 to 17 years, residing in 124 community areas within 17 municipalities and the sample numbers within community areas ranged from 20 to 472 (mean 121).

MEASURES

Alcohol use: Items were equivalent to those in national US youth monitoring surveys (Johnston et al., 2007). Respondents were asked "on how many occasions (if any) have you … had more than just a few sips of an alcoholic beverage (like beer, wine or liquor/spirits)?" over their lifetime and in the past 30 days. Responses were dichotomized as ever use (1 or more occasions of use in lifetime) and last month use (use in the past 30 days). To estimate rates of *binge drinking* respondents were asked "over the past 2 weeks … how many times have you had five or more alcoholic drinks in a row?" and responses were dichotomized (any binge drinking).

Risk factors: Responses for each risk (and protective) factor scale were coded from 1 to 4 (e.g., strongly agree, agree, disagree, strongly disagree; YES! yes no NO!). Eight scales common to both the Australian and Netherlands surveys were included in analyses (mean Cronbach alpha in the Australian sample [a_{AUS}] =.74; mean Cronbach alpha in the Netherlands [a_{NL}] =.70). Family factors are: 'Problems with family management'(8 items e.g,, "The rules in my family are very clear"; "My parents want to know if I don't come home on time", a_{AUS} =.80, a_{NL} =.75 , 'Conflicts in the family'(3 items,e.g. "People in my family have serious arguments."a_{AUS} =.78, a_{NL} =.74) , 'Parental attitudes favourable toward drug use ' (3 items, e.g. "How wrong do your parents feel it would be four you to smoke cigarettes?"a_{AUS} =.66, a_{NL} =.59), 'Parental attitudes favourable towards anti social behaviour' (3 items, "How wrong do your parents feel it would be for you to: steal something worth more than $10?"$a_{AUS}$ =.74, a_{NL} = .65). The school factor is: 'Academic failure' (2 items, e.g. "Putting them all together, what were your marks like last year?"a_{AUS} =.67, a_{NL} = .58). Peer risk was measured with 'Friends use of drugs' (4 items, e.g. "In the past 12 months how many of your 4 best friends have: Tried alcohol when their parents didn't know about it?"a_{AUS} =.77, a_{NL} = .70). Community risk factors included: 'Low neighbourhood attachment' (3 items, e.g. "I'd like to get out of my neighbourhood." a_{AUS} =.76, a_{NL} =.85) and 'Community Disorganisation' (4 items: e.g. "*How much* **does** *each of the following statements describe your neighbourhood:* Lots of graffiti." a_{AUS} =.77, a_{NL} =.77).

Protective factors: Five scales (mean a_{AUS} =.73; mean a_{NL} =.72) relevant to adolescent family and school environments were included. Three family scales were used 'Attachment'(6 items, e.g. "Do you feel close to your mother?" a_{AUS} =.84, a_{NL} =.85), 'Opportunities for Pro social Involvement' (3 items, "If I had a personal problem, I could ask my mum and dad for help."a_{AUS} =.70, a_{NL} =.74) and 'Rewards for Pro social Involvement' (2 items, e.g. "My parents notice when I am doing a good job and let me know about it."a_{AUS} =.84, a_{NL} =.83). For school we asked about 'Opportunities for Pro social Involvement' (4 items, e.g. "I have lots of chances to be part of class discussions or activities."a_{AUS} =.62, a_{NL} = .57) and 'Rewards for pro social Involvement' (3 items, e.g. "I feel safe at my school."a_{AUS} =.67, a_{NL} =0.62).

Structural indicators: We defined "structural" variables for the adolescents' residential communities by dichotomising rural and high disadvantage areas yes/no. In the Netherlands a community area was defined as rural if the majority of people lived within low population density areas (Centraal Bureau voor de Statistiek, 2011). Disadvantage was defined based on income, education and employment (Steketee et al., 2011). In Victoria rural was based on location outside the Melbourne metropolitan region. The population density of Victoria is 24 persons per square kilometre and within the metropolitan area it is 530 per square kilometre. Disadvantaged communities were those with a disadvantage score in the lowest 20% of the 2001 Australian Bureau of Statistics Census Socio Economic Indices For Area (SEIFA) scores.

ANALYSIS

Both datasets were compared on similar individual outcomes, demographical variables, risk and protective factors and structural factors. We compared alcohol use in both countries with hierarchical modeling (using STATA 11.2) to account for the community clustering effects and created separate models for each country (Hox, 2010; Heck and Thomas, 2009; Rabe-Hesketh and Skondal, 2008; Bartholomew et al., 2008). Initially we ran simple two level intercept models (Model# 0) where individual data are corrected for community influence. Then we introduced individual socio-demographic variables (Model #1), followed by individual predictors based on risk and protective factors. (Model #2). Finally, we added structural variables on community level (rural and disadvantage, Model #3). By comparing more complex with simpler models we assessed the contribution of individual and community influences based on model fit (deviance) and variance components.

RESULTS

Table 1 presents the sample characteristics. In the Netherlands more than twice as many respondents lived in a rural area, while in Australia more respondents lived in disadvantaged areas. The Australian sample (mean ages=14,45) has relatively more 12, 14 and 16 year olds, the Dutch sample (mean ages=14,4) more 13, 15 and 17 year olds. Both samples had slightly more females than males (NL 55.3%, AU 52.5% females). The majority identified themselves as being born in the country surveyed (Dutch or Australian background); in the Netherlands one fifth were migrant youth while Australia -a younger nation- had more migrant respondents (one third of the sample). The Australian sample has 10% more adolescents who live in a 'non-traditional' family (single parent, step parents, grandparents etc). As expected, the majority in both countries have siblings (3% higher in the Netherlands).

Table 1. *Sample characteristics*

	Australia	Netherlands
	N= 7,812	N= 15,082
Rural	16.4%	36.0%
Disadvantage	23.0%	19.8%
Age 12	17.1%	15.4%
13	14.6%	18.7%
14	20.8%	18.3%
15	15.5%	17.9%
16	19.6%	15.7%
17	12.5%	13.9%
Female	52.3%	55.3%
Migrant	29.2%	18.4%
'Non traditional' family	28.3%	18.3%
Siblings	83.5%	86.5%

Table 2 presents prevalence estimates and confidence intervals for different patterns of alcohol use in Australia and the Netherlands. The data reveal general similarities in cross-national levels of alcohol use for boys and girls in the 12 to 17 age group. Boys in the Netherlands had higher binge drinking rates than girls, while rates were similar across gender in Australia.

Table 2. *Prevalence Rates of Adolescent Alcohol use in Australia and the Netherlands*

	Australia		Netherlands	
	Boys	Girls	Boys	Girls
Alcohol ever use	62.1% [59.3 – 64.8]	61.2% [58.1 -64.3]	61.0% [58.4 – 63.2}	60.2% [58.0 – 62.3]
Alcohol last month use	36.7% [33.7 – 39.6]	38.9% [35.8 -42.0]	41.1% [38.4 – 43.8]	41.2% [38.7 – 43.7]
Binge drinking	18.6% [16.5 – 20.7]	18.0% [15.8 – 20.4]	20.1% [17.9 – 22.3]	15.9% [14.2 – 17.6]
Total	N=3,724	N=4,088	N=6,744	N=8,337

Table 3. *Multilevel Models Predicting Binge Alcohol Ase in Australia*

AUSTRALIA								
Model	Model 0 (Empty)		Model 1 (Individual Variables)		Model 2 (IV, Risks, Protection)		Model 3 (IV, Risks, Protection, Structural Variables	
	Coeff.	(s.e.)	Coeff.	(s.e.)	Coeff.	(s.e)	Coeff.	(s.e)
Fixed								
Intercept	- 1.53	(0.06)	- 2.94	(0.13)	- 8.9	(0.52)	-9.00	(0.52)
Individual Variables								
Age			0.55***	(0.02)	0.26***	(0.03)	0.26***	(0.03)
Gender (boys=ref)			- 0.04	0.06	- 0.01	(0.07)	-0.01	(0.07)
Migrants (Aus=ref)			- 0.68***	(0.08)	- 0.385***	(0.09)	-0.36***	(0.09)
Family (two parents = ref)			0.42***	0.07	0.01	(0.08)	0.01	(0.8)
Brothers/sisters (no= ref)			- 0.09	0.08	- 0.06	(0.10)	-0.05	(0.1)
Risks								
F: Family management					0.53***	(0.08)	0.53***	(0.08)
F: Family conflict					0.18***	(0.05)	0.19***	(0.05)
F: Parents attitude t. drug use					0.69***	0.07	0.69***	(0.07)
F: Parent attitude t. AS-beh.					-0.02**	(0.07)	-0.02	(0.07)
S: Academic failure					0.3*	(0.06)	0.28***	(0.06)
P: Friends use of drugs					1.3***	(0.06)	1.3***	(0.6)
C: Low attachment					-0.02	(0.05)	-0.03	(0.05)
C: Com. Disorganisation					0.20***	(0.06)	0.21***	(0.06)
Protection								
F: Attachment family					-0.16*	(0.08)	-0.16	(0.05)
F: Opportunity Pro social					0.22**	(0.08)	0.22**	(0.08)
F: Rewards pro social					0.13*	(0.06)	0.13*	(0.06)

S: Opportunities pro social					0.14	(0.09)	0.15	(0.09)
S: Rewards pro social					-0.04	(0.08)	-0.04	(0.08)
Structural variables								
Rural							0.40**	(0.15)
Disadvantage								
Random								
Variance	0.10	(0.03)	0.07	(0.03)	0.08	(0.03)	0.05	(0.02)
Deviance	-3771.2442		-3326.7575		-2598.8742		-2595.6423	

Note. *** p<0.001; ** p<0.01; * p<0.05*

Table 3 reveals the findings for the multilevel models in Victoria. The variation in binge alcohol use associated with community location was significant (intraclass correlation coefficient [ICC] 2.4%, 1.3 – 4.5%). Improvements in the model fit (based on Deviance) were observed for each step from Model#0 to #3. Model#1 reveals a significant influence of Age (OR=1.73) and Family-status(OR=1.51) in increasing the risk of binge alcohol use, while a decreased risk was associated with Migrant ethnicity (OR=0.51). Model#2 shows that after controlling for other influences, a number of risk and protective factors maintained significant associations with binge drinking. Friend's use of drugs (OR=3.84) and Parental attitudes favourable towards drug use (OR=1.99) are especially important risk factors. Three protective factors were significant. Family Attachment (OR=0.85) lowers binge drinking by 15%, after adjusting for other influences, Opportunities (OR=1.23) and Rewards for Prosocial behaviour in the Family (OR= 1.14) increase the risk of binge drinking. With the addition of the demographic variables, and risk and protective factors, the variance between the 36 Australian communities increases. In Model#3 Rural and Disadvantage were found to be highly interrelated, however, only Rural had a significant effect and was therefore presented in the model. Living in a rural area strongly influences binge drinking after controlling for all other variables (49% higher), and this effect was related to the higher disadvantage in rural areas. The addition of the non-significant variables hardly influences associations between binge drinking and the significant variables but it lowers the variance between communities from 0.08 to 0.05 and the model fit improves slightly.

Table 4 presents the multi-level findings for the Netherlands. The variation in binge alcohol use associated with community location as measured by ICC was 6.1% [95% CI: 4.5 – 8.3%] indicating the variation between the Dutch communities is higher than between the Australian communities. As for Victoria, each of the more complex models showed improved fit in the Netherlands. Model#1 reveals that the model fit decreases by adding the demographic variables Age (OR=2.20), Family (OR=1.54), Gender (OR=0.63), Migrant (OR=0.49) and Brothers/ Sisters (OR=0.76). The variance between communities increases by adding these variables. Model #2 reveals that,

after adjusting for demographic variables, a number of risk and protective factors show independent associations with binge drinking. Friends' use of drugs (OR=4.18), Parental attitudes favourable towards drug use (OR=2.56), Family Management (OR=1.42) and Academic Failure (OR=1.36) are each associated with youth binge drinking. The protective factor, School opportunities for pro-social involvement lowers the outcome by 17%. Model 3# revealed the additional influence of the structural variables. For comparative reasons we kept Rural area in our Model#3 (OR=2.18) and as for Australia, the influence of individual variables hardly changed in Model#3. Adding Rural lowers the community variance from 0.24 to 0.12 and strengthens the model fit. We also tested a slope-model (Model#4, interaction of rural and other variables) but the deviance indice (loglikelihood) didn't improve in either country. Model#3 is our final model for both countries.

Table 4. *Multilevel Models Predicting Binge Alcohol Use in the Netherland*

NETHERLANDS								
Model	Model 0 (Empty)		Model 1 (Individual Variables)		Model 2 (IV, Risks, Protection)		Model 3 (IV, Risks, Protection, Structural Variables	
	Coeff.	(s.e.)	Coeff.	(s.e.)	Coeff.	(s.e)	Coeff.	(s.e)
Fixed								
Intercept	-1.54	(0.05)	- 3.41	(0.16)	- 7.37	(0.48)	- 7.8	(0.5)
Individual Variables								
Age			0.79***	(0.18)	0.45***	(0.02)	0.45***	(0.02)
Gender (boys=ref)			- 0.47***	(0.05)	- 0.40***	(0.06)	- 0.40***	(0.06)
Migrants (Neth=ref)			- 0.73***	(0.08)	- 0.36***	(0.09)	- 0.30**	(0.09)
Family (two parents = ref)			0.43***	(0.06)	0.06	(0.07)	0.06	(0.07)
Brothers/sisters (no= ref)			- 0.28***	(0.07)	- 0.13	(0.08)	- 0.16*	(0.08)
Risks								
F: Family management					0.35***	(0.08)	0.34***	(0.08)
F: Family conflict					0.08	(0.05)	0.08	(0.05)
F: Parents attitude t. drug use					0.94***	(0.06)	0.93***	(0.06)
F: Parent attitude t. AS-beh.					- 0.14	(0.08)	- 0.13*	(0.08)
S: Academic failure					0.31***	(0.05)	0.31***	(0.05)
P: Friends use of drugs					0.14***	(0.05)	1.43***	(0.05)
C: Low attachment					- 0.12**	(0.04)	- 0.12**	(0.04)
C: Com. Disorganisation					- 0.12	(0.06)	- 0.07	(0.06)
Protection								
F: Attachment family					0.01	(0.08)	- 0.01	(0.08)
F: Opportunity Pro social					0.16	(0.08)	0.16*	(0.08)
F: Rewards pro social					- 0.06	(0.06)	- 0.05	(0.06)
S: Opportunities pro social					- 0.19**	(0.06)	- 0.19**	(0.06)
S: Rewards pro social					- 0.03	(0.07)	0.03	(0.07)
Structural variables								
Rural							0.78***	(0.09)
Disadvantage								
Random								
Variance	0.22	(0.04)	0.29	(0.05)	0.24	(0.05)	0.12	(0.03)
Deviance	-6949.7738		-5561.5858		-4538.4338		-- 4509.0332	

Note. *** p<0.001; ** p<0.01; * p<0.05*

DISCUSSION

The above analyses present the first cross-national comparison of the community variation in school age adolescent alcohol consumption in Australia and the Netherlands. In line with the hypotheses, the overall prevalence of alcohol use was similar in both countries, however, some differences were apparent. Australian students had higher use at younger ages and similar rates across gender, while in the Netherlands older males and rural youth used at significantly higher rates. At age 12 to 14 rates of binge drinking were higher in Victoria (8.3%, 6.8 – 9.8%) compared to the Netherlands (4.8%, 3.8 – 5.7%), with no significant gender difference in either country. At ages 15 to 17 binge drinking rates in Victoria were 29.4% (26.8 – 32.0%) with no significant gender difference. Rates were similar for same-aged girls in the Netherlands (27.5%, 24.6 – 30.3%), while the rates for boys were significantly higher (38.2%, 34.5 – 41.8%). The finding of higher rates of binge alcohol use amongst early adolescents in Australia is somewhat surprising given the older minimum legal purchase age (18 in Australia compared to 16 in the Netherlands) and of concern due to the vulnerability of the brain to heavy doses of alcohol at early ages (White and Swartwelder, 2004). The positive association of youth alcohol use with family opportunities and rewards in Australia (Table 5) suggests that alcohol use at family functions may be more common within Australia and suggests a need for parental education on the effects of alcohol at early ages. Significant community variation in adolescent alcohol use was observed in both countries, although it was higher in the Netherlands.

The lower rate of binge alcohol use amongst girls and young adolescents in the Netherlands, together with very high rates amongst older adolescents and males living in rural communities, fits with the finding that heavy adolescent alcohol use shows high community variation in the Netherlands, warranting a community targeted approach.

Importantly, the current analysis confirmed the hypothesis that the association between adolescent binge drinking and modifiable risk and protective factors was consistent across both countries. These effects were maintained after controlling for structural variables. This conclusion is similar to that in previous cross-national comparisons between the USA and Australia (Beyers et al., 2004) and the USA and the Netherlands (Oesterle et al., 2011). In both countries we see the same important influence of the risk factor 'Friends use of Drugs' (Peers).

Where risk factors were found to have different cross-national influences, the patterns suggested alcohol use was more strongly associated with developmental problems in Australia (Family Conflict, Low School Commitment), while Parental Attitudes towards Drug Use and Anti social behaviour were more influential in the Netherlands. Opportunities for Pro social behaviour in school also had some protective effect in the Netherlands. In both countries living in a rural community influenced binge drinking, however, in the Netherlands this influence is stronger. Interaction effects between individual factors and the structural variable Rural were not found. Strengths of this study include the large age-matched samples of adolescents that responded to the same measures in each country, the use of multilevel modelling to analyse community variation, and the analysis of individual risk and protective factors (individual/lower level) and structural variables (community/higher level).

Several limitations are also noted. Different sampling procedures were used, potentially biasing the comparison of community variation. Government youth policy in the Netherlands is organised on the basis of Cities and Towns. Community geographic boundaries have been defined across the Netherlands as sites for working to improve environments for young people and these were the community units selected for the present investigation.

Victoria is one of seven States and Territories in Australia. The geographic areas defined in Victoria for the present analysis tended to be larger than those in the Netherlands and were not based on an analysis of natural communities. In Victoria the definition of rural aggregated all youth located in schools outside of metropolitan Melbourne and, hence included a number of youth living in regional cities. Although the survey identified significant community variation in patterns of adolescent heavy alcohol use in Victoria, for the above reasons the analysis is considered to underestimate that variation. The classroom survey in Victoria was different to the household survey design in the Netherlands, reflecting the reality that school catchments are less aligned with community organisation in the Netherlands. To enable community variation to be cross-nationally comparable, the presented results did not adjust for the classroom clustering in Victoria but allowed this to contribute to community variation. We reran the Victoria analysis adjusting for both community and classroom clustering and found no major differences to the results presented.

Despite differences in survey design, the present study found mostly similarities in each country in the pattern of community variation in adolescent alcohol behaviours that was partly explained by modifiable risk and protective factors. Targeting adolescent alcohol use at a community level appears feasible both in the Netherlands and Victoria. Although behavioural patterns and risk and protective influences show many cross-national similarities, observable differences in the age and gender profile, associated factors as well as community location should be taken into account in tailoring community interventions to reduce alcohol related harms in both countries.

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Authors contributors

HJ, MS and JT designed, analysed and wrote this study. JW managed data collection in Victoria and participated in the analyses and writing of this manuscript. KC did the data management. All authors have been involved in revising the manuscript. All authors read and improved the final manuscript.

Part III: IMPACT

"I don't know, I may go down or up or anywhere, but I feel like this scribbling might stay"

Woody Guthrie

Interest in community interventions is strong. Scientists and politicians, as well as practitioners, see environmental and policy change as a promising way of improving health and well-being and decreasing sickness, disease, and problems. They see community intervention as a promising alternative to individual behaviour change. But community interventions are often difficult to research for various reasons: the outcomes are often difficult to define, changes take place over a long timeframe, they have multiple components, the intervention is often difficult to replicate in different situations, and the costs are high.

Experimental studies are a rarity in the field of social science in the Netherlands. But abroad they have become a more common method to test the effects of policies, programs, and interventions, and are used on a broader scale in social, economic, and prevention science. We find experimental studies in different fields like early childhood development and education, social welfare and unemployment, crime and youth delinquency, and health services. These studies provide answers to questions like what works best for whom. But the interests of these studies are not only on effects, but also on why these programs work. These studies consider the influence of different elements of a program on the outcomes, and ask questions on implementation, participation, and intermediate outcomes which are related to the (longterm) outcomes.

The third and last part of this study focuses on the impact of Communities That Care. Chapter 8 studies the impact and the effect of Communities That Care on preventing adolescent behavioural health problems. Chapter 9 is a discussion paper on the importance of this kind of research.

8. PREVENTION OF PROBLEM BEHAVIOURS AMONG YOUNGSTERS: THE IMPACT OF THE COMMUNITIES THAT CARE-STRATEGY IN THE NETHERLANDS (2008-2011).

Harrie Jonkman, Claire Aussems, Majone Steketee, Hans Boutellier and Pim Cuijpers

(Submitted)

ABSTRACT

Purpose: *This study examines whether the Communities that Care (CtC) prevention system has effects on the development of problem behaviours and on targeted risk and protective factors among youngsters (from 12 to 18 years) in the Netherlands. In this quasi-experimental study of five experimental and five control communities the impact of the CtC-program on outcomes are examined in a four wave longitudinal design among youngsters (12-18 years).* ***Methods****: Propensity score methodology is used as well as three level mixed models to test the effects of intervention by time interaction on problem behaviours, risk factors and protective factors.* ***Results****: No influence of the Communities that Care intervention could be detected on the development of a broader range of problem behaviours, risk factors or protective factors nor on the initiation of drinking and smoking of youngsters in this Dutch study.* ***Conclusions****: Disappointing results, different from earlier experimental studies, are placed in the context of the threats to internal validity (among them lack of tested and effective programs, delayed and partial implementation, contamination) and design limitations (non-randomization, small acceptance rate, small sample size) of this community study. It is important to identify, monitor, address and report threats to internal validity in conducting effectiveness trials where researchers have little control of intervention implementation. Well conducted and reported, this kind of study can contribute to answering persistent social questions.*

INTRODUCTION

Dutch youth belong to the higher drinking groups in Europe, which is by itself worlds highest drinking continent. Lower initiation ages for alcohol use and increasing amounts of alcohol and hospitalisations for alcohol poisoning are concerning trends(Ministerie van Volksgezondheid, Welzijn en Sport, 2007)(Jonkman, Steketee, Toumbourou, Williams, & Cini, 2012, accepted)[2]. Nearly one fifth of the Dutch youngsters in secondary schools have smoked last month, girls as much as boys. Smoking in the Netherlands is still one of the main causes of early death(Trimbos Institute, 2010). The use of soft drugs (hash and marihuana) of youngsters stabilizes the last years. When adolescents are 16 years old nearly one third has used soft drugs: More than 55% once or twice a month and 14% more than 10 times. A small number of youngsters use one or more hard drugs (like cocaine, amphetamine, ecstasy)(van Laar & Ooyen-Houben, 2009). Violence, delinquency and anti-social behaviour of youngsters are important societal problems. It is estimated that 5-7% of the Dutch children show serious problems and are in need of professional help(Loeber, Slot, Laan, & Hoeve, 2008). In the group of adolescents we see similar percentages(Junger-Tas et al., 2011). Boys show more anti-social problems than girls. Migrants are overrepresented in the juvenile system and the institutions for delinquents.

There is evidence that development of a specific problem behaviour is often intertwined with one or more other problem behaviours. Severe alcohol use, for example, is associated with other substance use. Significant correlation between crime and alcohol has been recognized over a longer time in scientific studies(Steketee, 2011). The intertwining of different problem behaviours brought up the idea to intervene on underlying factors which are strongly associated with problem behaviours at the same time(Catalano et al., 2012). Longitudinal and experimental studies demonstrated over the years the variety of risk and protective factors as the underlying factors for the problem behaviours(IOM, 2009). These factors could be identified in the daily contexts in which children and youngsters grow up: family, school, peers and communities, and became the principles of prevention activities for children and youngsters nowadays.

Problem behaviours among youngsters are worrisome phenomena and also possible starting points of a developmental trajectory of long term problems and disorders. Preventing problem behaviours are therefore important societal and political targets within the Dutch society(Jonkman et al., 2008). Against this social

background, interesting approaches are those pointing out problems and dealing with them in as early a stage as possible, thus preventing young people from going downhill. Research and evaluation has shown that a number of programs are beneficial in helping children and youngsters to avoid numerous problem behaviours(Elliott, 1997; Weissberg & Kumpfer, 2003).

In search of identification and dissemination of effective prevention strategies to combat high prevalence of drug abuse, delinquency, youth violence and other problem behaviour Nation et al. found in their 'review of reviews' nine general principles for effective prevention programs for children and youngsters(Nation et al., 2003). Programs should be comprehensive, include various teaching methods, provide sufficient dosage, are theory driven, provide opportunities for positive relationships, are appropriately timed, socio-culturally relevant, include outcome evaluation and involve well trained staff. These principles inform the practice of prevention, provide a rationale for prevention programs and further research in the future. Communities that Care (CtC) is such a prevention program (operating system) developed and ongoing researched in the US in response to increased problematic behaviour and social dropping out among the youngsters(Brown, Hawkins, Arthur, Briney, & Fagan, 2011; Feinberg, Jones, Greenberg, Osgood, & Bontempo, 2010; Hawkins et al., 2009; Hawkins et al., 2011). The strategy is also set out over the years in several other countries. Since 2000 it is set out in the Netherlands.

The Communities that Care operating system is a community-based strategy aimed to prevent adolescent behavioural health problems. It addresses risk factors found in longitudinal studies to increase the likelihood of different problem behaviours(Coie et al., 1993; IOM, 2009; Oesterlee et al., 2012, accepted). It also addresses protective factors that reduce the likelihood of these outcomes or of risk factors(Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004; Loeber et al., 2008). Based on this knowledge, the CtC-approach involves assessing the prevalence of problem behaviours, but also of the risk and protective factors in a community (neighbourhood) related to the problem behaviours. With the local profile based on epidemiological research on problem behaviours, risk factors and protective factors, communities can identify and choose tested and effective, preventive interventions to address these underlying factors(Arthur et al., 2007). A strategic, community-specific process has been designed and tailored to increase communication, collaboration and ownership among professionals, service providers and community members(Brown et al., 2011; Steketee et al., 2012). During this process, communities get technical assistance and specific training courses by trained and licensed CtC-experts. Although it is a community intervention in which different parties bear responsibility, one person (the local project leader) has specific responsibilities during the three year implementation period. After the implementation period, the community will be strong enough to work on its own, using the CtC-prevention framework(Jonkman et al., 2008).

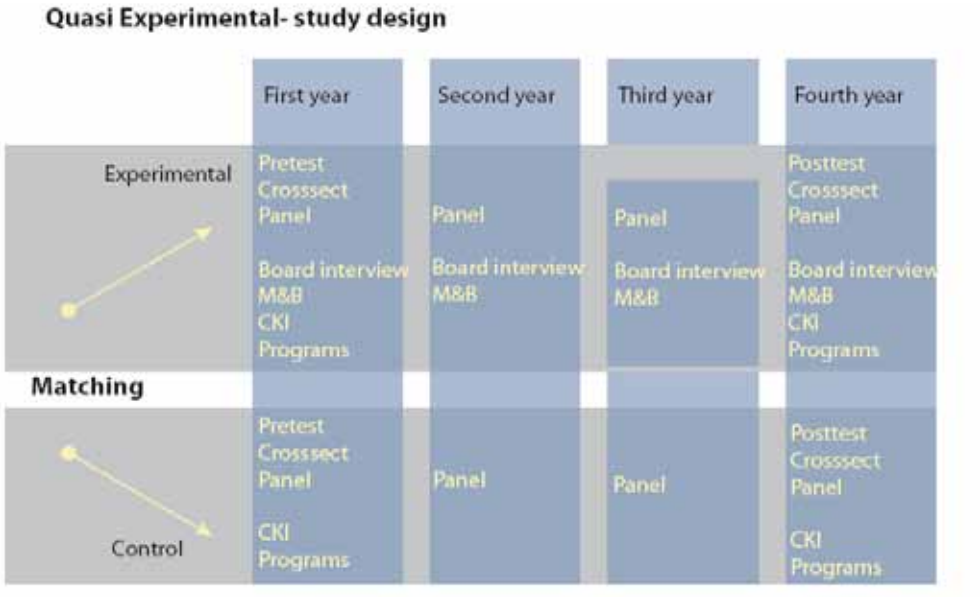
Findings from quasi-experimental studies in Pennsylvania(Feinberg et al., 2010) and the CYDS-randomized trial studies (Hawkins et al., 2009; Hawkins et al., 2011)showed that the use of CtC can contribute to improvements in youth outcomes. It showed that adopting the CtC-system in communities reduces the incidence of alcohol, smoking, smokeless tobacco and delinquent behaviours within four years. The prevalence rates were higher in control communities than in experimental communities for substance use last month: alcohol, smokeless tobacco and binge last two week as well as for delinquency last year(Hawkins et al., 2009). These incidence and prevalence results sustained within six years and the CtC-intervention communities lower the level of risk factors significantly(Hawkins et al., 2011).

The present study, although designed as a randomized controlled trial, became a quasi-experimental study to evaluate the effectiveness of CtC on various outcomes for youngsters in the Netherlands. In this study the long-term effects of Communities that Care on the behaviour of young adolescents (12-18 years) are assessed using longitudinal data. The objective of this study is to examine the effects and results of the prevention strategy of CtC in the Netherlands with regard to driving back problematic behaviours of youngsters. In our study we compare experimental and control community trends in prevalence of health outcomes of young people over a four year period (2008-2011). Outcomes of interest in this study are initiation and frequency of alcohol use, smoking, drug use and anti-social behaviour of youngster from 12-18 years. Beside these primary outcomes we are also interested in secondary outcomes (precursors). Precursors are factors that affect the likelihood of problem behaviours. They include structural, intermediate (family, school, peer) and individual risk factors which increase problem behaviours. But, they also include protective factors which mediate or moderate risk factors or directly decrease the likelihood of problem behaviours(Catalano et al., 2012). Experimental and control community trends of targeted risk and protective factors in the family, school, peer groups and community of these youngsters are compared over a four year period.

METHODS

Design

Figure 1. *Study design*.



The panel study discussed in this article is part of a broader study design (Figure 1) in which the intervention-condition (CtC-communities) is compared to the control-condition (Care as Usual-communities) over a four year time period. Five experimental neighbourhoods are paired to five control neighbourhoods. The effects of the intervention are measured on different ways: on youth outcomes by a Pre-test Youth Survey in the first year (2008) and a Post-test youth survey four years later (2011) on representative cross-sectional samples of youngsters in the experimental and control neighbourhoods. Also different kind of process outcomes (Milestones and Benchmarks (M&B) and Board interview to measure the level of implementation, Community Key-leader Interview (CKI to measure differences in collaboration and adoption of Prevention thinking) and Prevention Programs (to measure the use of effective programs) are researched. These results will be reported elsewhere(Steketee et al., 2012). In this article we present the results of the longitudinal part of this study.

The panel follows the development of a group of youngsters who live in experimental and control communities over a four year period. Measurements took place every year (autumn) and the first measurement (2008) is the baseline measurement. Youngsters were at that time 12, 13 or 14 years. During the last wave they were 15, 16 or 17 years (2011). We received student- and parental consent for each adolescent to participate in the four-year study.

Measurements

Setting

In 2008 five Dutch cities intended to start with the CtC-intervention and they were found prepared to participate in our research project. The five cities are located in the provinces of Zuid-Holland and Zeeland (South-west of the Netherlands). The cities are all middle sized and have an average population of 61,633 (ranging between 44,511 and 77,096, Table 1a). Within each of these cities pairs of neighbourhoods were selected to participate in this study.

The ten Dutch neighbourhoods (total youngsters E=55,2% and C=44,8%) with an average youth population of 768 (biggest 1,183, smallest 390) were matched in pairs within cities on population size, racial and ethnic diversity, economic indicators, and rates of crime and other problem behaviours of youngsters. Assignment accorded on city level in 2008 by City Council (Mayor and Alderman) to participate in the study over a four year period (2008-2011), to work with the CtC-intervention on fidelity base and not to work with the intervention in the control community.

Table 1a. *Number of Inhabitants in Participating Cities and Communities*

City	Inhabitants Total	Inhabitants 12 to 18 years	ExperimentalCommunity	Control Community
A	66,159	4,727	1,143	505
B	77,096	5,124	1,183	764
C	48,076	3,502	637	674
D	72,321	4,972	603	716
E	44,511	2,486	390	545
Total	308,163	20,881	3956	3204

Three of the cities agreed on random assignment. One city wanted to participate in the study but decided already at the end of 2007 with different stakeholders in the city for a specific experimental neighbourhood. The other city which didn't agree on random assignment was confronted with huge youth problems in one of their neighbourhoods and became part of national discussion during the assignment period. The city council decided to participate in the study as the protocol was set up. But, because of national interest and local concern, they wanted to choose the CtC-area themselves.

Participants

Names and addresses were provided by the five city councils of all youngsters who lived in one of the ten communities and were aged 12, 13 or 14 years in 2008. These youths and their parents received an invitation letter at their home address to participate in the panel for four years). Youths were asked to fill in a questionnaire annually on the internet with a personal code. In 2011 (fourth wave) the oldest participants were 17 years of age. Youngsters and parents had to confirm participation consent. In total we contacted 3.368 youngsters in the age group of 12-14 years and their parents. From 148 we got only the parent consent back, from 133 we received a signed letter from only youngsters, 177 parents made clear they did not agree to participation of their children. From 785 we got a signed letter of agreement from parent as well as participant. 24,3% of the youngsters of the experimental communities participated in the panel and 16,3% of the control communities.

In total 785 youngsters participated in this study, more from experimental (511, 70%) than control communities (274, 30%). Over three quarter (75,5%) of the adolescents participated four times (E=76,3%; C=74,1%), 11,6% three times (E=11,0%; C=12,8%), 7,7% two times (E=7,4; C=8,0) and 5,2% once (E=5,3; C=5,1). The participation rates in the experimental and control communities over the waves were similar. Differences on background variables of E- and C-youngsters over the years show similar patterns on age, gender, ethnicity and work of parents (Table 1b).

Table 1b. *Background Variables of Participants over the Waves*

	Total Con-trole	Total Experi-mental	2008 Con-trole	2008 Experi-mental	2009 Con-trole	2009 Experi-mental	2010 Con-trole	2010 Experi-mental	2011 Con-trole	2011 Experi-Mental
Age(12 year is 0)	2.26 (0.04)	2.32 (0.03)	1.0 (0.05)	1.05 (0.04)	1.9 (0.05)	2.00 (0.04)	2.8 (0.05)	2.82 (0.04)	3.7 (0.06)	3.72 (0.04)
Fema-le in %	55,9%	54,7%	55,5%	54,8%	57,6%	55,6%	54,6%	54,5%	55,9%	53,8%
EtnicityDutch in %	69,1%	75,1%	77,5%	82,3%	68,6%	74,8 %	67,5%	73,0%	62,7%	70,2 %
Both work in %	79,2%	84,0%	77,6%	82,3%	78,6%	83,0%	81,0%	85,9%	79,5%	85,2%

•

Measures

Primary outcomes. Alcohol use and other behaviour outcomes are considered as primary outcomes. Regular alcohol use is researched in this study by alcohol use ever, alcohol use last month and binge drinking (use of 5 or more glasses on one occasion last two weeks). Smoking of cigarettes and soft drugs (hash, marihuana) is also been researched on ever use and last month use and hard drugs ever (cocaine, heroin, xtc, speed, amphetamines) is measured. Delinquency (measured on last year occasion) is separated in violence questions (carrying weapons, fighting, attacking someone and threatening) and other delinquency actions (like damaging property, catched by police, shoplifting, stealing on school, selling stolen things). We made one binary antisocial variable of it with a one if yes on two or more on violence or other delinquency items and a no if not. For measuring incidence we used drinking ever, smoking ever, soft drugs ever, and antisocial ever. For measuring the prevalence over the four year period we used all the primary outcomes.

Secondary outcomes. In this study risk and protective factors are seen as secondary outcomes. The risk and protective factor constructs included in this study are created following Arthur et al.(Arthur et al., 2007). Because not all the scales of the precursors demonstrated similar internal consistencies only the scales with Cronbach alpha coefficients of .70 and higher are used in this study. CtC works with selected risk and protective factors as part of the community profiles. Only the community selected factors are used. Following these two restrictions a total of nine risk factors (mean alpha=.81.) and four protective factors (mean alpha =.74.) over multiple domains in which youngsters grow up daily in family, school, peers, community are researched.

To measure risks in the *Family* we used Poor Family Management (8 items, .78), Family Conflict (3 items, . 74) and Parental Attitudes towards Antisocial Behaviour (3 items, .80). To measure *School* we used: Low Commitment to School (6 items, .73). To measure *Peers* we used: Interaction with antisocial peers (5 items, .76). To measure *Community* we used five scales: Low Neighbourhood Attachment (3 items, .85), Community Disorganization (6 items, .84), Transition and Mobility (1 item) and Perceived Availability of Drugs and Weapons (2 items, .93). To measure protection we used Attachment (6 items, .73) and Opportunities for Pro social Involvement (3 items, .73) for *Family*. For *Peers* we used Belief in the Moral Order (.71). Based on criteria of reliability and selection we couldn't use any protective factors for *School*. For the domain *Community* we used: Opportunities for Pro social Involvement (2 items, .76).

Data-analysis

The data are analyzed using the Propensity Score Methodology(Guo & Fraser, 2010; Rosenbaum & Rubin, 1983; Rosenbaum & Rubin, 1984). This approach aims at reducing the problem of non-random assignment of subjects to experimental conditions in observational studies by comparing subjects on a function of observed characteristics expected to be related to intervention assignment. By matching experimental subjects to control subjects on their propensity scores, the experimental and control groups are made more comparable on the variables that are included in the propensity score model, leading to less selection bias in the estimated intervention effect. Using an optimally distance-minimizing matching procedure, such as the full matching approach(Rosenbaum, 1991), similarity of subjects in the matched sample can be increased over traditional matching techniques such as nearest neighbour matching. An additional advantage of using comparable subjects in both conditions only is that intervention effects will not be based on extrapolation beyond the overlapping range of observations in the experimental and control groups. Full matching a sample results in matched sets instead of matched pairs. This means that each matched set can contain more than two subjects; one CtC-youngster can be matched to more than one control youngster or vice versa. In our study there are more youngsters in the CtC than control condition and in general matched sets will contain one control-participant matched to more than one CtC-participant. The advantage of matched sets over matched pairs is that more youngsters can be retained for analysis. Weights to optimize balance between the CtC and control condition are determined by the matchings software and can be used in further analysis of the matched data set. The matching procedure is done with the use of statistical software package R (2.15.0). Within R specialized matchings programs are available. We used Matchit(Ho, Imai, King, & Stuart, 2007).

After pre-processing the data using Propensity Score Matching, mixed models were used that combine a between (experimental- or control condition) and within factor (time of measurement). In these models we controlled for dependency of observations on the city-level by including dummy variables representing the city a subject is living in. By examining a intervention-by-time interaction in these models, the intervention effect could be assessed.

The development of problem behaviours, risk and protective factors of the matched dataset is analyzed with the use of multilevel analysis techniques(Gellman & Hill, 2007; Rabe-Hesketh & Skrondal, 2012). Also this is done within R. Three levels of clustering are modelled in this study: measurements, youngsters and matched sets of communities. Within the analyses we used all the information of the youngsters who participated in the first wave.

We compared four different models. We start with an empty model (Model 0) to research the variance on level 2 (individual) and level 3 (matched set). In Model 1 we add control variables: gender (female is reference), age (twelve years is reference), ethnicity (from abroad is reference), propensity score and dummy variables for city (city A is reference). In Model 2 we add the condition (control is reference) and dummy for time (main effect of time). In Model 3 (final model) we add interaction between condition and dummy variable measurement 4 (last measurement). The regression coefficient of this interaction is the interest of this study. This shows if the development of youngsters in the experimental condition (who live in one of the neighbourhood where they use Communities that Care) differs significant when this is compared to the development of youngsters who grow up in the control group.

Two kind of multilevel analyses are presented in succession. First, we analyze the development of problem behaviours, risk and protective factors. Random slope models with interaction between condition and last measurement are presented for all the cities and the specific cities to analyze the specific targeted risk and protective factors. Because we analyse binary outcomes (problem behaviours) as well as continuous outcomes (risk and protective factors) logistic and linear multilevel analyses are used. We used Bonferroni corrections to control for the number of significant tests(Miller, 1981).

Second, we also look at the impact of CtC on the incidence of problem behaviour (survival analysis). The central question here is: does CtC effect the initiation of drinking and smoking. We also wanted to analyze the use of marijuana and the development of anti-social behaviour but for these outcomes our dataset was too small. New variables are made for drinking and smoking: 0 when it didn't happen yet during the measurement, 1 when it happened and a missing value for left truncation. Because of the small number of observations that showed initiation we did this analysis only for all the cities.

Power analysis

Power analyses were carried out to determine minimum sample sizes for the multilevel longitudinal part of the study and is done with Optimal Design(Raudenbush, S.W., Spybrook, J., Congdon, R., Liu, X., Martinez, A., 2011; Spybrook, J., Raudenbush, S.W., Congdon, R., & Martinez, A., 2011). The necessary sample size for the longitudinal part of the study was determined for a significance level of 5%, a power of 0.80, and an intra-class correlation coefficient of 0.02(Leventhal & Brooks-Gunn, 2000). Furthermore, the number of repeated measures and clusters were set to four and ten, respectively. Power analyses were carried out in which small (0.20), medium (0.50), and large (0.80) sizes of Cohen's D were varied to determine required sample sizes(Cohen, 1988). It was found that medium and large intervention effects can be detected by sample sizes of 270 and 90, respectively. Small effects ($d < 0.30$) can not be found using these sizes.

RESULTS

Descriptives

Table 1c. summarizes the social demographic background variables before and after matching. Before matching we see only significant differences on foreign language background (higher in Control communities) and on fathers, mothers and parents work and youngsters in higher education (higher in E-communities, $p<0.05$). After matching differences on background variables further shrinked and we see only differences between communities on working status of mother and both parents. After matching the total sample became smaller (from 274 Control and 511 Experimental subjects to 230 Controls and 400 Experimental subjects). Only youngsters who are comparable on the propensity score stayed in the sample.

Table 1c. *Composition of control and experimental group before and after matching.*

	After matching			
	Control	Experimental	T-test	P-value
	Mean(SE)	Mean(SE)		
GENDER	0.54 (0.03)	0.54 (0.02)	0.084	0.93
AGE	0.99 (0.05)	1.03 (0.04)	-0.497	0.62
COUNTRYBORN	0.02 (0.01)	0.01 (0.01)	0.893	0.37
COUNTRYBORNFATHER	0.13 (0.02)	0.08 (0.01)	1.934	0.05
COUNTRYBORNMOTHER	0.12 (0.04)	0.08 (0.01)	1.436	0.15
SURINAM	0.04(0.01)	0.02(0.01)	1.206	0.23
ANTILLES	0.02 (0.01)	0.02 (0.01)	0.231	0.82
TURKEY	0	0	-	-
MARROC	0.01(0.01)	0.01 (0.01)	0.562	0.58
INDONESIA	0.01 (0.01)	0.01 (0.00)	0.689	0.49
OTHER	0.09(0.02)	0.08 (0.01)	0.418	0.68
BROTHERSISTERS	0.93(0.02)	0.96 (0.01)	-1.468	0.14
TWOPARENTSFAMILY	0.94 (0.02)	0.94 (0.01)	0.051	0.96
ONEPARENTFAMILY	0.03 (0.01)	0.03 (0.09)	-0.031	0.98
FLANGUAGEBACKGROUND	0.03 (0.01)	0.02 (0.01)	1.623	0.11
FATHERSWORK	0.96 (0.01)	0.97 (0.08)	-0.801	0.42
MOTHERSWORK	0.76 (0.03)	0.83 (0.02)	-2.31	0.02*
BOTHPARENTSWORK	0.73 (0.03)	0.81 (0.02)	-2.373	0.02*
PRIMARYEDUCATION	0.1 (0.02)	0.1 (0.01)	0.204	0.84
HIGHSCHOOL	0.32 (0.03)	0.28 (0.02)	1.11	0.27
VOCATIONAL	0.26 (0.03)	0.23 (0.02)	1.02	0.31
HIGHEREDUCTION	0.07 (0.01)	0.08 (0.01)	-0.364	0.72
HIGHERHIGHEREDUCATION	0.21 (0.03)	0.29 (0.03)	-1.989	0.05
MIDDLEVOCATIONAL	0	0	-	-
SPECIALEDUCATION	0.00 (0.00)	0.00 (0.00)	0.364	0.72
HIGHERVOCATIONAL	0	0	-	-
OTHEREDUCATION	0.03 (0.01)	0.04 (0.01)	-0.31	0.76
AMOUNT	230	400		

Problem behaviours. risk factors and protective factors

We researched first the influence of the CtC-intervention on the development of a broader range of problem behaviours, risk factors and protective factors.

Figure 2. *Problem Behaviours C(0)-E(1) Communities over 4 Waves*

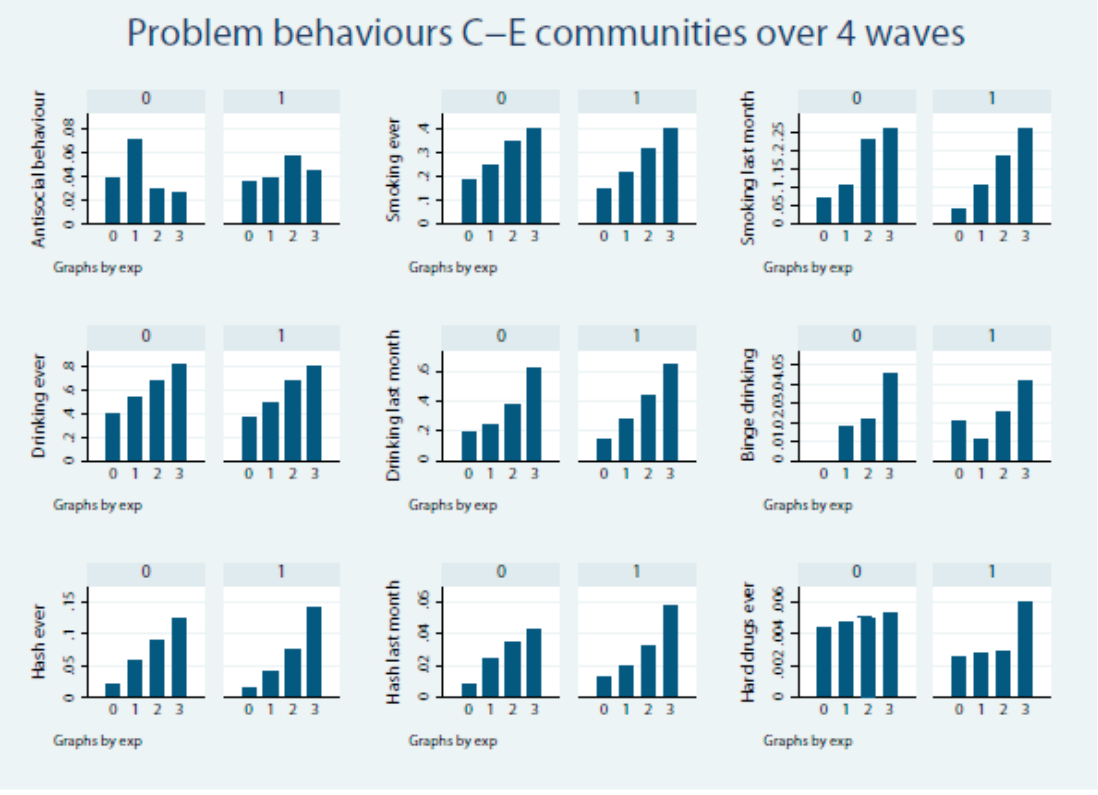


Figure 2. shows similar patterns in the outcomes of different problem behaviours of youngsters in percentages in control and experimental communities researched over a four year period: smoking ever (from 0.19 during first wave to 0.40 for last wave for control communities and from 0.15 to 0.40 for experimental communities), smoking last month (C:0.07– 0.26; E:0.04-0.26), drinking ever (C: 0.40-0.81; E: 0.36-0.79), drinking last month (C: 0.19-0.62; E: 0.15-0.64), binge drinking (C: 0-0.05; E: 0.02-0.04), hash use ever (C:0.02- 0.12; E: 0.02-0.14) , hash use last month (C: 0.01 -0.04 : E; 0.01-0.06) and hard drugs ever(C: 0.00-0.01; E:0.00 -0.01). Only on anti-social behaviour we see difference with, roughly, decreasing percentages on anti-social behaviour for control communities and increasing percentages for experimental communities (C: 0.04- 0.03; E: 0.04-0.05).

Table 2. shows the effects on problem behaviours with the interaction effect between condition and Wave 4 on the whole dataset (samples of individual cities were too small to find effects and not shown). For Hash and Hard drugs the number respondents were also too small (also not reported here). We see no impact of the intervention on any these five behaviour outcomes.

Tabel 2. *Effects of CTC on Problem Behaviours*

	Hele steekproef
	Coeff (SE)
Drink ever	0.077 (.391)
Drnk last month	-0.444 (60.86)
Binge drinking	-0.287 (5.830)
Smoke last month	-0.817 (19.382)
Antisocial	0.816 (4.157)

In Table 3. we present the impact on the development of risk and protective factors. We cannot detect influence on any of the factors, not on one of the risk factors, not on one of the protective factors, not on the whole sample nor in the paired communities.

Tabel 3. *Effects on Targeted Risk Factors and Protective Factors*

	Whole Sample	A	B	C	D	E
	Coeff (SE.)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeffe (SE)	Coeff (SE)
RISK FACTORS						
Poor Family Management	**0.051 (.031)**	**0.116 (.075)**	**-0.047 (.053)**		-0.006 (.082)	
Family Conflict	**0.009 (.045)**	**-0.004 (.094)**				**0.194 (.139)**
Parental Attitudes towards Antisocial Behaviour	**0.029 (.035)**			-0.165 (.066)	0.038 (.101)	
Low commitment to school	**0.049 (.037)**					**0.032 (.157)**
Interaction with antisocial peers	**0.012 (.033)**		0.067 (.048)	0.073 (.083)	0.060 (.115)	
Low neighbourhood attachments	**-0.035 (.051)**	**-0.026 (.102)**			-0.134 (.166)	
Community disorganization	**-0.050 (.041)**	**-0.018 (.091)**			0.111 (.087)	
Transition and mobility	**0.025 (.033)**	**-0.063 (.067)**				
Perceived availability of Drugs and Weapons	**0.059 (.109)**	**0.185 (.212)**				**-0.492 (.342)**

PROTECTIVE FACTORS					
Attachment	**0.005 (.040)**		0.109 (.066)	0.082 (.117)	
Opportunities for prosocial involvement family	**-0.073 (.040)**				**0.177 (.116)**
Belief in moral order	**-0.049 (.034)**			-0.020 (.063)	
Opportunities for prosocial involvement communities	**-0.039 (.058)**	**-0.093 (.119)**	**-0.074 (.105)**	-0.161 (.160)	0.186 (.212)

Note. * = $p < a/13$

Survival analysis

Table 4. shows the initiation of drinking (1360 observations. 629 individuals and 178 matched sets) and Table 5. on smoking (1884 observations. 630 individuals and 178 matched sets). We see no significant influence of the intervention on drinking nor on smoking. Developmental predictors as age and wave are important.

Tabel 4. *Multilevel Survival Analysis on Drinking*

	Model 0: Only intercept	Model 1: Covariates	Model 2: Timing and condition	Model 3: Interactie between timing and condition
	Coef (SE)	**Coef(SE)**	**Coef (SE)**	**Coef (SE)**
Constant	-0.511 (.061)***	-0.704 (.331)*	-0.742 (.315)*	-0.730 (.316)*
City B		-0.190 (.180)	-0.131 (.168)	-0.131 (.168)
City C		-0.109 (.188)	-0.097 (.177)	-0.094 (.177)
City D		0.004 (.222)	-0.009 (.210)	-0.010 (.211)
City E		-0.147 (.279)	-0.334 (.268)	-0.332 (.268)
Gender		0.272 (.051)	-0.080 (.120)	-0.082 (.120)
Age		0.272 (.051)***	0.589 (.077)***	0.591 (.077)***
Etnicity		-0.050 (.037)	-0.061 (.036)	-0.061 (.036)
Propensity score		-0.224 (.444)	-0.280 (.436)	-0.278 (.436)
Wave 2			-0.354 (.197)*	-0.354 (.169)*
Wave 3			-1.285 (.197)***	-1.288 (.197)***
Wave 4			-1.132 (.261)***	-1.264 (.360)***
Condition			-0.068 (.129)	-0.092 (.136)
Condition*Wave 4				0.204 (.377)
Variance				
Individu	.000	.135	.000	.000
Matched set	.068	.065	.026	.027
Deviance	1837	1754	1709	1708

Tabel 5. *Multilevel Survival A ng*

	Model 0: Only intercept	Model 1: Covariates	Model 2: Timing and condition	Model 3: Interactie between timing and condit ion
	Coef (SE)	**Coef(SE)**	**Coef (SE)**	**Coef (SE)**
Constant	-1.877 (.078)***	-2.106 (.436)***	-2.168 (.451)***	-2.140 (.452)***
City B		-0.052 (.250)	-0.024 (.256)	-0.023 (.256)
City C		0.412 (.253)	0.425 (.259)	0.429 (.259)
City D		0.452 (.293)	0.418 (301)	0.419 (.301)
City E		0.394 (.362)	0.279 (.373)	0.285 (.373)
Gender		-0.070 (.172)	-0.075 (.178)	-0.076 (.176)
Age		0.142 (.061)*	0.386 (.108)***	0.383 (.108)***
Etnicity		-0.001 (.051)	-0.007 (.052)	-0.007 (.052)
Propensity score		-0.524 (.577)	-0.721 (.608)	-0.713 (.609)
Wave 2			-0.085 (.217)	-0.083 (.217)
Wave 3			-0.969 (.281)***	-0.964 (.281)***
Wave 4			-0.675 (.352)	-0.849 (.437)
Condition			0.025 (.190)	-0.028 (.205)
Condition*Wave 4				0.277 (.404)
Variance				
Individu	.056	1.081	1.203	1.205
Matched set	.029	.000	.000	.000
Deviance	1553	1471	1454	1454

DISCUSSION

The aim of this social experimental study was to measure the impact of the community prevention system (Communities that Care) on the development and initiation of problem behaviours of youngsters in the Netherlands. We measured primary outcomes as the effect on prevalence of alcohol use, smoking, drug use and delinquent and violent behaviour among adolescents. We measured secondary outcomes (precursors) as the effects on risk and protective factors in the domains of Family, School, Peers and Community. We hypothesized that the CTC prevention system would decrease problem behaviours and the risk factors of adolescents. We also hypothesized that this strategy would increase protective factors experienced by adolescents.

We did not find effects of CTC on the development of risk factors, protective factors or problem behaviours, or on the initiation of drinking or smoking in this study. What should we make of these results? Why are there such apparent differences in the outcomes from the American CTC panel study(Hawkins et al., 2009; Hawkins et al., 2011) and the Dutch CTC panel study? Recall that the US trial of CTC was an efficacy trial in which the researchers provided and controlled resources allocated to CTC communities. In contrast, this is an effectiveness trial. We had no influence on any part of the implementation of CTC in this study and CtC communities did not receive additional resources. This is an important difference. We report elsewhere the degree to which CTC was implemented in the participating neighbourhoods, and the degree to which CTC affected collaborative work in the CTC neighbourhoods (Steketee et al., 2012). Do the Dutch results indicate a failure of CTC, or do they result from plausible threats to the internal validity of this effectiveness trial? Here we assess threats to implementation fidelity of CtC and the internal validity of this study.

Perhaps the greatest potential threat in the Dutch study is the limited number of tested and effective preventive interventions for those in the 12 to 18 age range available in the Netherlands at the time of this study. CTC was developed to encourage communities to select and use tested and effective preventive interventions to address priority risks. CTC's theory of change is explicit in guiding communities to use preventive interventions shown in well controlled trials to have produced significant effects on youth behavioural outcomes. But in the

Netherlands at the time of this study, only 13 youth focused programs had been tested and found to be effective. Of these, 8 programs were treatment programs for individuals with behavioural problems already, leaving only 5 prevention programs, and only 2 of these programs were for those 12 to 18 years of age. CTC communities in the Netherlands selected programs from a databank created by the Dutch Netherlands Youth Institute. The large preponderance of programs on this databank are programs deemed to be theoretically sound, but have not been tested in adequately controlled trials and found to be effective. While the selection and use of tested and effective preventive interventions is a core element of the CTC system, tested and effective preventive interventions were not used consistently in the CTC neighbourhoods in the Netherlands in this trial(Steketee et al., 2012). Without tested and proven effective preventive interventions in place, CTC neighbourhoods did not achieve better outcomes than controls. This is an important lesson for other countries and sites considering the use or testing of CTC. Where tested and effective preventive interventions are not yet available to communities, CTC may not be a viable community prevention system for achieving better youth outcomes.

A related threat was the developmental mismatch between some programs implemented in CTC neighbourhoods and the measures used to assess CTC outcomes in the Netherlands. The Dutch research team did not have resources, influence or authority to ensure that the preventive interventions selected by CTC neighbourhoods would be focused on adolescents aged 12 to 18 and their social contexts, though the measures used to assess outcomes in this study all come from surveys of children aged 12 to 18 years. In fact, 47% of all the programs implemented in the CTC neighbourhoods were focused on preschool and primary school children and their. These programs would not likely have affected the behaviour of 12 to 18 year olds during the time frame of the evaluation. In contrast, the US trial of CTC which found effects on alcohol use, tobacco use, and delinquency limited the menu of tested and effective programs supported in the test to those which focused on youth aged 10 to 15 and their families(Hawkins et al., 2008).

A third threat in the Dutch study was delayed and partial implementation of CTC. Once the research was funded in 2008, the investigators had to search for cities willing to work with the CTC strategy. Recruitment of cities and selection and assignment of neighbourhoods to conditions took time before CTC training could begin. As a result, several sites began the CTC process late in 2008. Further, in some cities CTC coaching was discontinued at the end of 2010. As a result, while the study was planned for four years, the actual CTC prevention work in any specific neighbourhood did not extend longer than three years by the time of the final assessment. Process analyses found that at that time, all the CtC neighborhoods had only recently started implementation of prevention programs(Steketee et al., 2012). It is possible that the three year implementation period of the Dutch study was too short to detect results. The CTC timeline suggests that CTC's effects on behaviour will be seen only after 4 years, and, in fact, in the Community Youth Development Study in the US, effects of CTC on tobacco and alcohol use were observed only after four years of CTC implementation(Hawkins et al., 2009).

Contamination of control neighbourhood is another plausible threat to internal validity in this study. The study was set out in paired neighbourhoods within the same cities. Community workers and professionals in these middle sized cities of the Netherlands communicated with each other frequently, and some were involved in service delivery in both CTC and control neighbourhoods. It is possible that some providers imported parts of CTC and its approach into their control community. The research team was aware of this danger from the beginning, and tried to prevent it by making clear to cities what was possible in experimental neighbourhoods and what in control neighbourhoods. As independent researchers in an effectiveness study we could not control what service providers did in the neighbourhoods. In one of the communities we found some indication of contamination in the last period of the study when they introduced in 2011 a similar prevention plan for the control community when it was confronted with increased youth problems. This was kept hidden from the researchers.

It is likely to be difficult to avoid contamination in experimental studies comparing neighbourhoods within the same cities due to propinquity of experimental and control neighbourhoods and the likelihood of common service providers, , at least in the Netherlands. For experimental community research work it may be better to match neighbourhoods of different cities or to work with cities or towns with less chance of contamination. Researchers and governments should work together to make such designs possible.
With regard to study design, non-randomization of neighbourhoods to condition in two of the five participating cities introduced a possible selection effect, in that city leaders in those cities chose the neighbourhoods for intervention. A further possible selection threat was introduced by the relatively low acceptance rate of 23.3% of those recruited for the study and by evidence that rates of panel participation in the study appeared to differ significantly in experimental versus control neighbourhoods (24,3% of the experimental, 16,3% of the control). Although a quasi-experimental design with modern matching techniques is the best alternative available for addressing non-random assignment and sample size differences across experimental and control neighbourhoods, it remains possible that selection effects at neighbourhood and individual levels influenced these results.

Finally, this study was limited to five CTC and five control neighbourhoods in five cities. This small number of experimental and control units was too small to detect small effect sizes as significant.

It is still possible that Communities that Care prevention system demonstrates significant effects in preventing delinquency and violence, underage drinking and tobacco use by teens when it is installed with fidelity in the United States and that it doesn't show these effects in the Netherlands with similar conditions. At the end there are important differences between the two countries which may influence the effects, for example cultural differences in service provision and quality of service staff between the US and the Netherlands/Europe (Axford,

2012). There are examples of effect studies on prevention programs (e.g. Multisystemic Therapy) which show significant results in US but disappointing results in the UK (Butler et al., 2011). Of course our effect results of CtC are disappointing and we cannot conclude its effectiveness. But, given the threats of implementation fidelity and internal validity in this effectiveness trial of Communities that Care in the Netherlands, we also cannot conclude that the prevention system is ineffective.

What then, are the contributions of this study? First, community interventions to attack problem behaviours of youngsters or to improve their well-being and healthy and social development are often implemented in communities but rarely researched for outcomes on the level they are set out in the Netherlands. This study was designed to address this problem by focusing on outcomes on the shorter (precursors) and longer run (problem behaviours) in a longitudinal panel design.

Second, this study investigated the development of a broad range of behaviours of youngsters and the initiation of drinking and smoking by focusing on the daily contexts of youth development; that is, families, schools, peer groups and communities. Experi-mental studies like this which use this daily life perspective are rare. The design, conduct and analysis of this kind of effectiveness trials offers lessons for researchers. Clearly, successfully overcoming threats to implementation fidelity and internal validity must be a high priority for those seeking to experimentally study interventions in everyday real world contexts. Although complex and difficult, such studies can contribute significantly to answering persistent social questions. In the Netherlands there is still a lot to do.

Authors contributions:

MS and HJ obtained funding. designed and organize the study and co-wrote the paper. MS is Principal Investigator and HJ is co-PI of the Communities that Care effectiveness study in the Netherlands. CA and HJ analyzed the data and CA co-wrote the paper. HB assisted in the design of the study and chaired the study advisory group. PC assisted also in the design of the study and gave advice on specific research questions. All authors have been involved in revising the manuscript of the paper and have given final approval of the publication of the paper.

Competing interests:

The authors declare that they have no competing interests.

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9. International translational research: Promise and caution

Catalano, R.F. & Jonkman, H.

To submit (Editorial on Chapter 8)

A recent series on Adolescent Health in the Lancet described the success of concerted worldwide effort in infectious disease and the global investment in child health (Resnick, Catalano, Sawyer, Viner, & Patton, 2012). As a result more children are surviving into adolescence and the world wide burden of disease has shifted to non-communicable diseases often due to behavior problems that begin during adolescence and add to the burden of disease during adolescence but also through the life course. The Institute of Medicine report on preventing mental and behavioral disorders, for example, demonstrated that mental, emotional and behavioural disorders like depression, substance abuse and conduct disorders affect large numbers of young people which have a life-long psycho-social effect on the young people, their families, schools and communities (IOM, 2009). Unicef also has recently targeted adolescence is the central phase for physical, mental, sexual and reproductive health and promotes its social investment to end the cycle of poverty, to eliminate inequities and to secure a better future for children and young people (Unicef, 2011). The Worldbank gave a message to governments and policy makers to invest in young people for countries development (The Worldbank, 2006). All these documents call on international, national, and local leaders to make prevention and promotion of health among youth top priority.

As described in the third article of the Lancet-series, these behaviour problems are largely preventable (Catalano et al., 2012). Wide ranging approaches have been found to be efficacious in multiple contexts, community, family, school and individual approaches. These approaches have been found to be efficacious in high income and lower and middle income countries. Catalano and colleagues suggested that to reduce the burden of disease from these adolescent initiated behavior problems, the global challenge is to increase use of tested, efficacious prevention policies and programs while recognizing that communities and nations are different from one another and need to decide locally what policies and programs they use.

The Lancet prevention article suggests that research on translating these efficacious prevention approaches to a range of communities and countries is necessary. The issue is how to do this in a way that recognizes local conditions, but also recognizes that the policy or program active ingredients need to be preserved in order for the program to work. While there is evidence that efficacious interventions can be successfully replicated in different contexts, there is considerable debate regarding how to transfer programs to new settings.

Some suggest that high fidelity is necessary to produce outcomes (Durlak & DuPre, 2008; Elliott & Mihalic, 2004), while others contend that adaptations are necessary to ensure that preventive interventions are culturally appropriate and relevant to the new population (Castro, Barrera Jr., & Martinez Jr., 2005; Madon, Hofman, Kupfer, & Glass, 2007; Tsarouk, Thompson, Herting, Walsh, & Randell, 2007).

The Community that Care prevention system was built using the research base for prevention science. It mobilizes community coalitions of stakeholders to prevent adolescent behavioural problems and is designed to build community capacity. Coalitions assess and prioritize local risk and protective factors through the CTC youth survey and plan and deliver adolescent health and community prevention by implementing tested and effective preventive programs to address elevated risks (Hawkins & Catalano, 1992; Hawkins & Catalano, 2005). A randomized trial involving 24 communities in the USA showed positive results on prevention of adolescent drug use and delinquency and showed outcome effects after four years of implementing the program on drug use (tobacco and underage drinking) as well as on delinquency and violence as well as on risk factors (Brown, Hawkins, Arthur, Briney, & Fagan, 2011; Feinberg, Jones, Greenberg, Osgood, & Bontempo, 2010; Hawkins et al., 2009). Sustained effects could be found two years after the end of project funds to support the intervention (Hawkins et al., 2011).

The CtC-prevention system is introduced to communities in the Netherlands with the same core elements as was used in US expecting the same initiation and development outcomes on youngsters in the communities after introduction of the program (Jonkman et al., 2008; Steketee et al., 2012). Different from the US-studies no influence of the intervention could be detected in the effect study. Why was this the case, and what can we learn about the prospects of international prevention translational research?

Translational research can be fostered by identification of the core elements of efficacious interventions—the content, activities, and modes of delivery that best represent their underlying logic and causal mechanisms (Elliott & Mihalic, 2004; Elliott & Mihalic, 2004; Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Rotheram-Borus, Ingram, Swendeman, & Flannery, 2009). Jonkman and colleagues implementation included core elements of CTC. Coalitions were mobilized, training was provided in prevention science and prevention assessment of outcomes risk and protective factors. The CTC survey was translated to Dutch and local adolescents were assessed, and local profiles were constructed to determine priority risk and protective factors to address. However, matching these local priorities to tested, effective prevention programs, a core element of CTC, was not possible due to the lack of rigorously tested programs available in the Dutch context. CTC relies on a rich array of tested prevention programs that can be chosen to address local need. This points out another conclusion of the Lancet prevention article, that most of the testing of preventive interventions has been conducted in high income counties, primarily in the U.S. To achieve the promise of prevention of behavior problems globally, the first step

may be that specific programs need to adapted (translated and fit into the service delivery system) and be tested in rapid trials. Processes like the ADAPT-ITT might be utilized to translate tested interventions to local contexts (Wingood & DiClemente, 2008). This adaptation process must consider core elements of the intervention and adaptations to fit into the local culture (often cultural elements are expressed in prevalence of risk and protective factors), communication methods that local populations can relate to, recruitment to the intervention localized (Catalano et al., 1993), and delivery made compatible with local resources and condition. Once these adaptations are made small randomized trials (with adequate, but minimal numbers to achieve power to detect effects) with efficient measurement of relevant outcomes might be conducted to provide local evidence of the impact of adapted interventions. Programs like CTC which are designed to enhance the use of tested, effective prevention strategies might need to be delayed until the local prevention evidence base is constructed.

Since there is an array of tested prevention programs, a question that arises is which tested, effective programs to start in different contexts. This might be answered locally by assessing risk and protection through national or regional surveys using instruments like the CTC youth survey. The CTC survey, which has been translated and used in a number of contexts with reliable and valid results, is designed to provide a profile of outcomes, risk and protective factors that could point to national or regional priority needs for risk reduction and protective factor enhancement that could be matched to existing tested, effective prevention programs which could become priority targets for translational research.

These global efforts within countries are one way to rapidly build up the local evidence base for prevention, since they can adapt interventions tested in other contexts which have already conducted considerable developmental research and testing. This is also likely to build up the global experience in conducting controlled trials.

Over the last 30 years, prevention science has developed a strong research base in epidemiology and preventive trials. Only recently has the call for tested prevention programs spread beyond high income countries and most prevention trials have been conducted in the U.S. Catalano and colleagues (2012) pointed out that one solution to the global challenge to increase use of tested, efficacious prevention policies and programs globally was to build capacity and interest among researchers, governments and practitioners. Both translational prevention research and building experience with trials would contribute to local capacity and interest in prevention science. Jonkman and colleagues point out that the researchers did not have adequate capacity or funding to control many of the critical processes, funding for interventions, and the ability to prevent contamination of control communities. Further, a lack of appreciation for random assignment to conditions was also a challenge to the scientific integrity of this study. These challenges suggest that a first step may be conducting translational research trials of efficacious prevention programs. Once expertise in trials and prevention program delivery is built

through these best bets, it may be more likely that indigenous prevention programs might be readied or developed for testing, and over the medium term create more efficacious prevention programs to reduce global burden. Further, the experience with trials and program adaptation will increase the capacity of countries to develop and test prevention programs which respond to unique local challenges, leveraging the impact of prevention. The investment and experience in child health has proceeded in a like manner, using translational research to understand how to deliver and adapt tested innovations to increase maternal health and reduce infant mortality. International funding bodies should invest heavily in this type of translational research, to address the burden of behavior problems on adolescent and adult health.

10. DISCUSSION

Winter Syntax

A sentence starts out like a lone traveller
heading into a blizzard at midnight,
tilting into the wind, one arm shielding his face,
the tails of this thin coat flapping behind him.

There are easier ways of making sense,
the connoisseurship of gesture, for example.
You hold a girl's face in your hands like a vase.

You lift a gun from the glove compartment
and toss it out the window into the desert heat.

These cool moments are blazing with silence.

The full moon makes sense. When a cloud crosses it
it becomes a eloquent as a bicycle leaning
outside a drugstore or a dog who sleeps all afternoon
in a corner of the couch.

Bare branches in winter are a form of writing.

The unclothed body is autobiography.

Every lake is vowel, every island a noun.

But the traveller persists in his misery,
struggling all night through the deepening snow,
leaving a faint alphabet of bootprints
on the white hills and the white floors of valleys,
a message for field mice and passing crows.

At dawn he will spot the vine of smoke
rising from your chimney, and when he stands
before you shivering, draped in sparkling frost,
a smile will appear in the beard of icicles,
and the man will express a complete thought.

Billy Collins

Putting things together

Social investment to target the development of problem behaviours like alcohol and drug use, violence and delinquency, and other problem behaviours in youth was the interest of this study '*Some years of Communities That Care. Learning from a social experiment*'. We capture the goal of healthy and social development of all the youngsters with a preventive perspective. Intervening on important risk and protective factors may prevent problem behaviors and promote health. Risk and protective factors in the family, schools, friends, and neighbourhoods that predict these behaviours were studied from a developmental perspective. With this knowledge, targeting preventive interventions at the right moment and in the right place becomes possible. The framework of risk and protective factors provide us a scientific basis for prevention science and up-to-date preventive policy. This thesis is focused on the environments in which youngsters grow up rather than on individual psychology and behaviour of youngsters. Often, scientific interest focuses on the individual, and societal answers receive far less scientific interest than individual interventions. But the rate of problems cannot be reduced only by individual preventive programs, and societal answers sometimes have more power, just as Snow (1855), Durkheim (1951), Rose (1992), Elliott (1997), Sen (1999), Marmot (2011, 2010, 2006, 2004), Wilkinson (2009, 2001), Bloom (2004), and Banerjee and Duflo (2011) showed us in their time. New social interventions on societal problems which make use of scientific knowledge and which can be used on a broader scale are necessary. Communities That Care is such a social investment.

Prevention is not a new idea, but the scientific base for effective practice is rather new. Since 1994, theoretical perspectives have evolved, standards for prevention research have been developed, and experimental research has improved. There has been much work focused on detecting early onset of developmental disorders and problem behaviours. Also, important factors associated with these disorders and problems can be identified and detected. Progress has been made concerning practical initiatives and policies, programs, and new practices to eliminate specific risks or increase strengths. Family resources, school quality, and community efficacy can all play a substantial role in this. The field of prevention has evolved partly by the success of local policies and programs which have contributed to the well-being of youngsters and the prevention of negative development outcomes in the last twenty years (Mrazak & Haggerty, 1994; IOM, 2009).

Still some questions remain. One of the big challenges is developing effective preventive interventions that are supported at the community level. Within prevention science and public health there are community-based initiatives, but knowledge about these initiatives is less well known and less used. Community-level interventions are interventions with several components operating at the same time, often combining individual and environmental change strategies across multiple settings to prevent problems and disorders in youth and to promote their well-being (Wandersman & Florin, 2003). Communities That Care is a community-based preventive initiative. In this initiative the development of youngsters is related to the social environments in which they grow up and the way we organise these environments. In this community-based program, recent scientific knowledge and development come together. Researchers, politicians, and practitioners need to take seriously these kind of practical answers to societal problems. But let us recap the results of this study.

In this thesis we examined three issues. Newly developed theoretical and empirical knowledge regarding pathways to problem behaviour was employed in the prevention program Communities That Care. But also, practical knowledge of effective programs and successful local implementation directed the development of this preventive initiative. The CTC program was developed in the eighties and nineties in the U.S., conducted on a broader scale, and has been researched since then. Also, it has been conducted in other countries around the world, among them since 2000 the Netherlands (Chapter 2). In the Netherlands it was imported as a population-targeting method to reduce delinquency among youngsters, adapted with fidelity to the Dutch context, and tested in different neighbourhoods. The result of this first phase was that this program improved the quality of planning and decision making, collaboration and coordination, to focus on intervening on risk and protective factors and the use of effective programs. It was seen as a promising strategy for planning prevention policies and interventions in neighbourhoods. The first phase was the basis of a lot of work which has been conducted since then in many cities and neighbourhoods across the Netherlands and beyond. Prevention science must provide answers to practical questions, the first objective of this thesis. The non-transparent field of preventive interventions has changed a lot the last ten years. We have seen this development in other countries as well as in the Netherlands. Effective and promising approaches could be identified to support families, schools, and communities as we made clear in Chapter 3. Translating prevention science into practice (translational research), findings of which were presented in Chapter 4, is another example of the practical objective of the first part of this study (Practice).

Research on specific problem behaviours of youngsters in communities as well as their association with social determinants is studied in Chapter 5 (a metropolitan study), Chapter 6 (a non-Western study), and Chapter 7 (a bi-national study). Problem behaviours like violence and delinquency and alcohol use are identified in different contexts such as cities, communities, and countries, and are connected to social determinants (risk and protective

factors). Comparative studies must produce reliable information for prevention policy and potential interventions. These three articles present commonly defined targets for the future which can be used for evaluation of prevention policy later on. These topics are the objective of the second part of this thesis (Research).

There is worldwide interest in impact of social investment. People want to know the details of interventions that matter, and the core elements and results of these investments. They want to define the conditions under which the investments are carried out and the results produced. New research methods were developed over the years, new designs were created, and specific data were collected. The third and final objective of this study (Impact) was to model the impact of Communities That Care and to assess long-term effects on adolescent problem behaviours and risk and protective factors, and on community prevention service systems. Interest in community-based interventions is strong. Research on these kinds of interventions is difficult but possible, as Chapter 8 (impact research) and Chapter 9 (the importance of this kind of translational research) show. The results were disappointing, as well as understandable, in the Dutch study. Design problems (quasi-experimental, small sample size), as well as problems with internal validity (among them contamination and lack of tested and effective programs in the Netherlands) are presented. Still, these studies are promising and provide answers to a question which many people have, but which is rarely researched: do preventive programs and policies have impact?

Although the three parts of the thesis deal with different questions, they have two characteristics in common: up-to-date research on adolescent (12-18 years) problem behaviours, and preventive possibilities for the daily contexts in which they grow up.

Strengths and limitations

This study has different strengths, and we mention some here. The first strength is that the different parts of this study are based on practical and real-world social intervention work conducted over the last few years. These activities (including data collection) are carried out in different cultural contexts in the Netherlands, mainly, but also abroad. All parts of the study are conducted with general population samples and target development of all youngsters. The key goal of these articles is to identify problems and social determinants in populations, to determine the best programs, and to implement them within a similar framework across diverse contexts. Community-based prevention is of interest for science and policy, as well as for practitioners in the field of public health and prevention to address common public concerns and questions. This study shows that it is possible to use general knowledge and to adapt it to different situations.

Second, in this study, different parts of social investments (research, innovation, effective programs, and evaluation) are connected to each other in one study. We need real-world studies which take seriously the problems people face, are carried out under daily conditions, and study the broader spectrum of social investments.

Third, in this study, a quasi-experimental design is used with experimental and control communities as units of intervention. Social interventions in the Netherlands are seldom researched in this way. This study can be seen as an innovative study. Quasi-experimental designs and observational studies are good alternatives when they follow scientific methods. Randomized research is not always possible, is financially costly, and not always ethical (Diaz & Handa, 2005). But quasi-experimental and observational methods need scientific attention, including in the field of prevention. Propensity Score Matching (PSM) is a new method and is used in this study, which makes it possible to study causality without the use of a RCT. PSM is not often used in Dutch social scientific research.

The application of a community perspective on prevention may raise many questions and, of course, such a study has its limitations. We will mention three. First, in this study, problem behaviours are the centre of interest. They play an important role in the life of many adolescents. But healthy behaviours of adolescents (e.g. societal participation and level of education) and relations with social determinants are understudied in this study. More

and more research should be done on this topic. Communities and cities, politicians and practitioners see the perspective of problem behaviours and social determinants as negative and too restricted. They want to underline the importance of changes and possibilities for children and youngsters in their youth policy, and researchers should support them in this.

Second, when we set up our impact study it was designed as a randomized multiple-site study. All the cities that started with Communities That Care in 2008 wanted to participate in the study for the coming years. For them it was important that their practical work could be included in this study. But confronted with the consequences of such a study design, not all of the cities could or wanted to be randomized. Because of practical (one city) and political (one city) reasons in two of the five cities, randomization of experimental and control communities was not possible. We had to change the original RCT design we had in mind into a quasi-experimental design. Outcomes and social determinants were controlled on the basis of many social demographic background variables. Although this statistical procedure has potential, especially in cases of practical difficulties confronting us our study, in the end, propensity score matching does not account for unobserved characteristics ('hidden bias').

Third, the development of effective interventions and the use of them in real social settings is a difficult combination. Discussion about fidelity of the intervention as it is developed and the adaptation of it in specific cultural contexts is important. One of the biggest practical limitations may be the limited time to conduct the community intervention and funds available to carry it out in cities and communities. It was not easy to find participating cities and communities. In the end, we did not succeed in getting the high number of participants we had in our mind at the start of the study. This kind of research, we found, after four years of work, can only be fulfilled when another party (government, fund) is responsible for or is strongly involved in the finance and organisation of the implementation. Here researchers on the one hand, and policymakers and practitioners on the other, have to work closely together, and plans for doing this kind of work should be made at the highest level. In this study, researchers had to negotiate with local parties and had to discuss planning and activities. The researchers tried to handle this as flexibly as possible without endangering the research design. But, in the end they had to change things more then they had wanted.

Implications for social policy

This study provides several implications for social policy. Promotion of well-being of youth, prevention of problem behaviours, and detecting social determinants should be at the heart of youth policy on international, national, and local levels. The framework of Communities That Care, with its developmental and contextual perspective, risk and protective factor focus, and its scientific orientation, can be applied in different communities with different social and cultural backgrounds. It is a sustainable framework to carry out policies, programs, and projects in the different environments in which youngsters grow up, learn, play, age, and live their lives. This framework can put social policy into action, create goals for the future, and make healthy social and physical development of all youngsters an endeavour for every community. It can be put into action in three ways.

First, communities need population-based surveillance systems to monitor the incidence and prevalence of youth problem behaviours and benchmark the daily environments in which they grow up. Risk and protective factors of their family, school, peer, and neighbourhood which contributed to the prevalence rates are the best determinants we have at the moment in prevention science. Surveillance systems can be worked out on different levels such as communities, cities, or countries. Research on how well youngsters are functioning in communities is important to agree upon and target prevention policy on, guide prevention programming, evaluate what is done, and in the end, learn from. Again, this framework can be used in international, national, and local initiatives.

Second, the development of physically and socially healthy youngsters benefits when families, schools, different organisations, and parties within communities carry out well-coordinated and research-based work. Local prevention efforts work better when they are coordinated, and professionals, as well as community members, learn from each other where individual competences are strengthened, where connections between systems are made, and which contributions to the community are made by whom. Working together is already an established social policy target. Well-coordinated community systems with clear goals, as presented in this study, can make a difference.

Various international studies have shown that the population-wide reduction of problem behaviours among adolescents is possible by using evidence-based prevention programs and policies. They affect whole populations by targeting relevant risk and protective factors and reduce the public health burden. International, national, and local governments have to take this knowledge seriously. But changes take time, and policymakers have to be more patient then they often have been in the past. Researchers, politicians, and practitioners have to find ways to use these programs on a broader scale. Societal improvement needs political will and research capacity to expand scientific evidence of what works. Communities That Care tries to bring different parties together, to cooperate on evidence base, and to make this evidence-based knowledge accessible for people. Also, this work should be done on different levels (international, national, and local).

Social policy, programs, and interventions should, more than is the case is now, emerge from social experimentation in order to improve social conditions. Science allows us to look at societal problems in a 'new' way. In line with Bacon (1958), Dewey (1916), and Campbell (2002, 1966), science used in this study is seen as an experimental, hypothetical form of inquiry on which to model social and political life. Solutions should come from continuing experiments in which we learn from things that work, as well as (or even more so) from the mistakes we make. Or, as Donald Campbell wrote more than 40 years ago: "The United States and other modern nations should be ready for an experimental approach to social reform, an approach in which we try out new programs designed to cure specific social problems, in which we learn whether or not these programs are effective, and in which we retain, imitate, modify or discard them on the basis of apparent effectiveness on the multiple imperfect criteria available"(Campbell, 1969) [1].

1 *Campbell, D.T. Reforms as experiments. American Psychologist, April 1969, 24: 409*

Implications for research

There is still a long way to go for this young field of prevention science. Certainly in terms of preventive investments in communities, cities, and countries, this science in its infancy. Some subjects call for at least scientific attention in the coming years.

The first issue that needs scientific attention in the coming years is the how to promote healthy development of youth. Politicians and practitioners want to have and to use this knowledge, and researchers should take this seriously. What is healthy social development, how do we define it, and how can we research it? Risk and protective factors are defined, but how they relate to these positive indicators needs to be worked out more in depth.

A second important issue is the relationship between development of problem behaviours (and healthy behaviours) in children and adolescents, the contexts in which young people grow up (family, school, friends, and communities), and the risk and protective factors they are dealing with. We know a lot about the importance of the factors and about their correlation and associations. But in the near future, the focus throughout will move from associations between behaviours and risk and protective factors for a whole group of youngsters in a community to patterns of behaviours for groups of youngsters within and between communities.

There is a lot of knowledge about the influence of risk and protective factors on the behaviour of youth (proximal factors). The influence of structural indicators (distal factors like poverty, socioeconomic status of the environment of young people, or social capital) and the relation and interaction with social determinants (proximal factors within the family, school, peers, and communities) is less researched. The influence of the broader social context on risk and protective factors has been given too little attention in prevention science up until now. The public health burden among adolescents worldwide also underlines the need to act on a structural level also. Surveys of communities within countries and between countries, as presented in this study, may contribute to this knowledge.

Research to detect and understand causal pathways to problem behaviours as well as to positive behaviour and well-being and the influence of social determinants is conducted mainly in the Western world. We also need knowledge about youngsters who grow up in poor and non-Western countries. Improving the health and well-being of youngsters is not restricted to the Western world of high-income countries. Because of that, longitudinal and experimental studies should be expanded to other parts of the world (low- and middle-income countries) where 86% of the world's young people live. Our knowledge about their health and well-being is restricted, effective and tested programs are out of reach, and we should support prevention work there.

Going back to the Netherlands, we can say that so far there has been relatively little research on the impact of social actions (policy, program, intervention) on the development of youth. Although these studies are being conducted more and more, experimental studies to determine effects are primarily clinical in nature. Social studies of the effects of interventions that are plotted at the level of countries, cities, and communities are, unfortunately, scarce. Communities That Care stimulated thinking about tested and effective programs. During our experimental work in communities it became clear for us that the work on effective prevention programs is not finished, and doesn't reach communities. There is still a lack of controlled trials that assess long-term effects on developmental outcomes, as well as replication studies for preventive programs. We need to raise the quality level from promising to tested and effective programs, and also do this for prevention programs which can be used on a larger scale to support families, schools, and communities outside clinical settings.

Conclusion

Problem behaviours of youngsters (underage drinking, smoking, and drug use, as well as delinquency and violence, sexuality related problem behaviour, and depression) remain public health problems for every community. Understanding these problems and improving the effectiveness of prevention remains important. Well-designed, implemented, and researched prevention programs can positively influence health and social outcomes of youngsters. There is no doubt that the development of problem behaviours among youngsters is connected to the environments in which they grow up. Risk and protective factors are important for prevention science at the moment. But, to advance our understanding, more is necessary then simply pointing to associations between specific problem behaviours and risk and protective factors. We have to research them in interaction with each other and also over a longer time period. For example, long-term panel studies (in Western as well as in non-Western countries) need to be conducted in the future. But, also, the role of structural variables cannot be ignored. They influence the resources and exposure to risks that youngsters and their communities experience. Also, this higher level of policy needs to be taken seriously in prevention science. And, of course, the work on tested and effective preventive programs (development, research, implementation, and bringing it to scale) should be continued and broadened. But that is for the future. I have tried to 'upstream' the perspective of youth development. This is just a beginning. Taking social interventions seriously in science is important for the development of effective social and preventive policy. Good policy should be based, at least partly, on scientific evidence and understanding of how health outcomes and determinants operate, as well as what can be done about them. I hope I may raise awareness of some important preventive issues and contribute to informed debate and to more effective policies and programs for youngsters in the developing world.

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12. Summary

The purpose of this study is to examine the prevention of youth problem behaviours, research of problem behaviours and their relationships with social determinants, and the effect of a community-based prevention strategy. Research questions addressed in this study come from activities that have been carried out during the last ten years in different socio-cultural contexts, especially in the Netherlands. Communities That Care (a community-wide prevention strategy for neighbourhoods and cities) played a central role in these activities.

Chapter 1 (*'Introduction'*) introduces this study. It describes the extent to which youth in the Netherlands deal with problem behaviours. This chapter describes the theoretical model presented in this thesis, with emphasis on development of problem behaviours, the importance of the contexts in which young people grow up, risk and protective factors, and structural indicators. Also, the social experiment, Communities That Care, is presented, and it demonstrates the importance of investigating the results of such social experiments. The introduction presents the purpose and structure of this study.

Then, the three parts of the study are presented: Practice, Research, and Impact. Prevention science is an eminently practical science that gives answers to developing, implementing, and monitoring daily prevention

activities. Three chapters (Chapters 2, 3, and 4) form the first part of this study (PRACTICE) and answer the research question: What can we practically do to deal with problem behaviours in youth?

Chapter 2 (*'Behind dikes and dunes: Communities That Care in the Netherlands'*) describes the Communities That Care (CTC) program. It also gives an overview of the first period of CTC in the Netherlands. The introduction of this strategy in the Netherlands can be seen as a social response to the increase in violence and delinquency among young people during the second half of the nineties. Communities That Care builds on theoretical and practical insights that arose in the nineties. During the first year, the instruments were developed and used simultaneously in four cities in the Netherlands. The first study results show that the deployment of the strategy 1) increases the quality of planning and decisions, 2) strengthens cooperation between local stakeholders, 3) improves the programming and coordination of interventions, 4) puts more emphasis on risk and protective factors, and 5) increases the use of effective and promising interventions. These results are the foundation for what follows in subsequent years and in this study.

Prior to 2000, scientific thinking about prevention and effective programs was developing in the Netherlands. Within Communities That Care, having a menu of tested and effective programs is a critical element. The introduction of Communities That Care in the Netherlands was not only a catalyst for thinking in new ways about community prevention efforts, but also motivated the development of a data bank of prevention programs in the Netherlands. Further, the need for expanding the evidence on prevention program has stimulated research on prevention programs in the Netherlands. Chapter 3 (*'Prevention'*) examines the first steps towards improving prevention in the Netherlands and builds a theoretical model for prevention. Important to this model are risk factors that young people are facing, the timing of the intervention, and the goals of the intervention. A number of effective programs in the Netherlands nowadays are also described.

In Chapter 4 (*'Communities That Care, core elements and context. Examination of implementation in two countries'*), the implementation of Communities That Care in twenty-two communities in two countries are studied: twelve in the United States and ten in the Netherlands. It identifies four core elements of the program: 1) mobilization of community stakeholders in the process, 2) use of epidemiological data, 3) use of effective programs, 4) ongoing evaluation of results and adjustment of community planning. With the use of two instruments (Milestones and Benchmarks and Board Interview), the implementation processes of the strategy in U.S. and Dutch communities are compared. This study shows that the introduction of CTC in both countries leads to more cooperation, more understanding of the problems, and greater use of risk and protective factors. Despite the differences in cultural contexts, we see that all but one community succeeded in mobilizing stakeholders, using epidemiological data, and making more use of effective programs. Continuous review and updating of the plans presented more challenges for the Dutch communities than the U.S. communities.

The second part (RESEARCH) contains three chapters (Chapters 5, 6, and 7), is methodological and analytical in nature, and explores options to investigate specific problem behaviours (anti-social behaviour, violence/delinquency and alcohol use) among young people in communities and countries. This part of the study answers the question: Where should we start our preventive work? These articles defend the proposition that prevention activities should focus on 1) the prevalence of environments (problem), and 2) insights into the social determinants (risk and protective factors and structural indicators) of problem behaviours (causes). Three social epidemiological studies demonstrate how it can be examined.

In urban contexts, there is an enormous variety of preventive interventions for reducing antisocial behaviour. It is often not clear in which areas they should be used, what they should be focusing on, and how they will profit. Chapter 5 (*'Targeted prevention of anti-social behaviour in an urban context'*) is a study of antisocial behaviour among 5,657 adolescents (12-15 years) in fifty-five neighbourhoods in eleven districts of the metropolitan city of Rotterdam. In this chapter a new form of social crime prevention is presented. Problem areas are identified, as well as certain health risk factors for young people which can benefit from intervention (expressed in Attributional Fraction). Based on these insights, preventive measures can be determined.

By far, most of the research on prevalence, determinants, and variation in violence and delinquency among young people is conducted in the Western world. Chapter 6 (*'Different worlds, common roots. A multilevel analysis of violence and delinquency of youth in the Netherlands Antilles as a basis for crime'*) describes a study of 7,842 young people (85%) of the Netherlands Antilles in 109 neighbourhoods across five islands. Violence and delinquency, demographic factors, and risk and protective factors are investigated in a hierarchical study. Risk and protective factors among adolescents in this part of the non-Western world are strongly associated with violence and delinquency. To be more successful in crime prevention, it is important that prevalence and social determinants of violence and juvenile delinquency are researched in their variety and complexity. Such studies should also be conducted in non-Western societies. This study is just a start.

Problem drinking among young people is a global problem. Comparative studies between countries on prevalence and aetiology of alcohol use and determinants can contribute significantly to prevention science. But to be compared properly, these studies should be constructed similarly. In Chapter 7 (*'Community variation in adolescent alcohol use in Australia and the Netherlands'*), alcohol consumption by young people from Australia (n = 7.812, N = 36) and the Netherlands (n = 15,082, N = 124) was compared. In this chapter, the problem of youth drinking (binge drinking), the associations with risk and protective factors in adolescents (12-17 years), and structural indicators that characterize the area (urban and poor) were examined. Alcohol prevalence among young people is similar in both countries. In Australia, binge drinking at a young age is higher. In the Netherlands, binge drinking is

more common in later life, is higher among men, and is more common in rural areas. The variation between areas in the Netherlands is also greater than in Australia. Despite similar effects on risk and protective factors in both countries, this bi-national study shows that there are differences between the environments in which young people grow up and these environments influence binge drinking. Targeted preventive interventions must take these environmental differences into account.

The third and final part of this study (IMPACT) answers the question: Is Communities That Care effective to prevent adolescent behavioural health problems? and focuses on examining the results of Communities That Care in the Netherlands.

Chapter 8 ('*Prevention of problem behaviour among youngsters: the impact of the Communities That Care-strategy in the Netherlands (2008-2011)*') examines whether the Communities That Care (CTC) prevention strategy has effects on the development of problem behaviours and on targeted risk and protective factors among youngsters (age 12 to 18 years). Propensity score methodology is used, as well as a three-level, mixed-model panel design to test the effects. No influence of the Communities That Care intervention could be detected on the development of a broader range of problem behaviours, risk factors, or protective factors in the Dutch data, nor on the initiation of drinking and smoking by youngsters. Disappointing results are placed in the context of the threats to internal validity (among them, the short duration of study, contamination, and lack of tested and effective programs) and the limitations of the study design (quasi-experimental and small sample sizes).

Chapter 9 ('*International translational research: Promise and caution*') is a discussion paper on this kind of trials, program adaption and, above all, the importance to invest in this type of translational research internationally.

In Chapter 10 (*'Discussion'*), the main findings of this study are summarized. The first part shows that Communities That Care may be among a new generation of prevention programs which integrate research, innovation, and evaluation of effective programs. The strategy is a rational approach to youth problem behaviours which brings more coherence to this policy area, allows local governments get a better grip on their own problems, and enhances the effectiveness of local youth policies. It also answers practical questions as to which effective programs can currently be carried out in the Netherlands and what the introduction of the program means in two different socio-cultural contexts (the Netherlands and the United States). The second part of this study shows that targeted youth policy is possible when it focuses on specific problems and the social determinants (risk and protective factors) of these environments. It also shows how this ecological research can be conducted. The third part of the study shows how effects of a community intervention program can be researched, and presents disappointing results which are understandable in the light of the study design and the conditions under which the program was carried out.

This study has several strengths. 1) The results are based on long-term practical work over the years, conducted in very different environments. Important innovative social interventions such as the one in this study don't get the scientific attention they deserve. 2) In this study we used a (quasi-)experimental design. Social investments in the Netherlands are rarely experimentally researched (even though there is much debate about them). 3) Finally, very different areas of social investment (such as research, innovation, and evaluation of effective programs) are associated with each other in this study.

But of course, this study has its limitations. 1) The emphasis is on problem behaviours in adolescence. The healthy development of adolescents (for example participation in education, sports, and society) and its relation to social determinants have not been addressed. In this area, more and more scientific research is appearing. Cities and communities increasingly look for insights in this area because of the negative and limited perspective on problem behaviours and risk factors. 2) Concerning the quasi-experimental research which is part of this study, it can be said that all five cities which started with CTC in 2008 wanted to participate in this research. But not all cities were able to meet the requirements for randomization. The study was designed as a Randomized Controlled Trial, but has a quasi-experimental nature. The empirical outcomes of the study are checked for a large number of background variables and the results are verified with the modern technique of propensity score matching. 3) Finally, we failed to study the large numbers we had in mind at the start of the study. In the end, we have to conclude that such research can be performed only if another party (a government, a fund) is accountable for implementation and is financially and organisationally responsible for it. The researchers had to deal too often with many different parties and had to negotiate and try to schedule appointments with varying agencies. The researchers have been as flexible as possible without putting the original research plan in jeopardy. But in the end we had to make some concessions.

Based on this study, we can offer some suggestions to politicians with regard to future preventive interventions and programs. Promotion of the well-being of youngsters, prevention of problem behaviours of youngsters, and detecting their social determinants should be the core of youth policy, international, national, and local. The framework of Communities That Care is a good basis for this. 1) Communities need surveillance systems to research well-being, problem behaviours, and social determinants. The monitoring system of CTC shows how communities function, makes targeted youth policy possible, and is the basis for programming and evaluation. 2) Effective coordination of activities of organizations and parties, as presented in this study, improves local prevention work. 3) Effective and tested prevention programs support the positive development of youngsters. Knowledge about and use of the programs assume political will and scientific capacity. The prevention strategy brings different parties together and improves cooperation in evidence-based work. 4) Social policy, programs, and interventions to reform social conditions should, more than is the case now, be derived from social experiments. Solutions for social problems must be found by continuing experimentation, through which we learn from our errors what works.

Scientifically, this young science still has a long way to go. Certainly in terms of preventive investments in communities, cities, and countries, this science is in its infancy. Some subjects call for, at least, scientific attention in the coming years. 1) The first issue that needs attention in the coming years is the healthy development of youth. How can this be addressed and how is it related to risk and protective factors? 2) A second issue is the relationship between development of problem behaviours (healthy behaviours) in children and adolescents, the contexts in which young people grow up (family, school, friends, and communities), and the risk and protective factors to which they are exposed. The focus throughout will move from associations between behaviours and risk and protective factors towards patterns of behaviour. 3) There is a lot of knowledge about the influence of risk and protective factors on the behaviour of youth. The influence of structural indicators (for example, poverty or socioeconomic status of the environment in which young people live) is less researched and hence the influence of the broader social context on risk and protective factors is given too little attention. Surveys of communities within countries and between countries, as presented in this study, may contribute to this knowledge. 4) Longitudinal and experimental prevention studies need to be expanded to other parts of the world where 86% of the youth population lives. The question of how youth development and well-being are related to social determinants and tested and effective programs begs attention. 5) In the Netherlands we need to improve the quality and use of tested and effective prevention programs. In doing so, we will support families, schools, and communities in their contribution to the healthy development of youngsters, also outside clinical settings.

Taking social interventions seriously is important for the development of social policy. Social policy must be at least partially based on scientific research. This study focuses on some topics that play a role and would particularly contribute to informed debate and effective policy.

Samenvatting

Het doel van deze studie is onderzoek van preventie van probleemgedragingen van jongeren, onderzoek van probleemgedragingen en de relaties met sociale determinanten en het effect van een wijkgerichte preventie strategie. Onderzoeksvragen die in deze studie zijn gesteld komen voort uit activiteiten die gedurende de laatste tien jaar zijn ondernomen in verschillende sociaal-culturele contexten, vooral in Nederland. In deze activiteiten speelde Communities that Care (een gemeenschapsbrede preventiestrategie voor wijken en steden) een centrale rol.

Hoofdstuk 1 (*Introductie*) introduceert deze studie. Beschreven wordt in hoeverre jongeren in Nederland te maken hebben met probleemgedragingen. In dit hoofdstuk wordt het theoretisch model gepresenteerd met aandacht voor ontwikkeling van probleemgedragingen, het belang van de contexten waarin jongeren opgroeien, risicofactoren en beschermende factoren en structurele indicatoren. Tevens wordt het sociale experiment Communities that Care gepresenteerd en het belang onderstreept om de resultaten van dergelijke sociale experimenten te onderzoeken. In de *Introductie* worden het doel en de opbouw van deze studie gepresenteerd.

Vervolgens worden de drie delen van deze studie gepresenteerd: Preventie, Onderzoek en Impact. Preventie wetenschap is een bij uitstek praktische wetenschap die antwoorden moet geven op zaken waar bij de invoering van activiteiten in het dagelijkse werk tegenaan wordt gelopen. Drie hoofdstukken (Hoofdstuk 2, 3 en 4) vormen het eerste deel van deze studie (*PRAKTIJK))* en geven antwoord op de onderzoeksvraag: *Wat kunnen we praktisch doen als we te maken hebben met probleemgedragingen van jongeren?*

Hoofdstuk 2 (*Achter dijken en duinen: Communities that Care in Nederland*) beschrijft het programma Communities that Care (CtC). Het geeft tevens een overzicht van de eerste periode van CtC in Nederland. De invoering van deze strategie in Nederland kan worden gezien als een maatschappelijk antwoord op de toename

van geweld en delinquentie onder jongeren gedurende de tweede helft van de jaren negentig. Communities that Care bouwt voort op theoretische en praktische inzichten die in de jaren negentig ontstaan. Gedurende de eerste jaren zijn de instrumenten ontwikkeld en is het initiatief tegelijkertijd uitgezet in vier steden in Nederland. Het eerste onderzoek naar resultaten maakt duidelijk dat met de inzet van de strategie 1) de kwaliteit van planning en beslissingen toeneemt; 2) de samenwerking tussen lokale partijen versterkt; 3) de programmering van de interventies meer gecoördineerd plaats vindt 4) meer nadruk komt te liggen op risicofactoren en beschermende factoren; 5) meer gebruik wordt gemaakt van effectieve en veelbelovende interventies. Met deze resultaten is de basis gelegd voor wat in de jaren erna volgt en deze studie.

Tot 2000 wordt er in Nederland nauwelijks wetenschappelijk nagedacht over preventie en effectieve programma's. Binnen de Communities that Care hebben effectieve programma's een belangrijke plaats. Met de introductie van het programma Communities that Care in Nederland wordt ook een bijdrage geleverd aan het denken over en de ontwikkeling van preventieve programma's in Nederland. In hoofdstuk 3 (*'Preventie'*) worden de eerste stappen onderzocht op weg naar verbetering van preventie in Nederland en een theoretisch model voor preventie gepresenteerd. Leidraad hierbij zijn risicofactoren waar jongeren mee te maken hebben, het tijdstip van ingrijpen en de doelen van de interventie. Een aantal effectieve programma's dat Nederland anno nu kent wordt beschreven.

In hoofdstuk 4 (*'Communities that Care, kernelementen en context. Onderzoek van implementatie in twee landen'*) wordt de implementatie van Communities that Care in 22 gemeenschappen van twee landen onderzocht: twaalf in de Verenigde Staten en tien in Nederland. Allereerst worden vier kernelementen van het programma gedefinieerd: 1) mobiliseren van stakeholders in het community proces; 2) gebruik maken van epidemiologische data; 3) gebruik maken van effectieve programma's; 4) voortdurende evaluatie van resultaten en bijstellen van community plan. Met de inzet van twee instrumenten (Milestones and Benchmarks en Board Interview) kon het implementatieproces van de strategie in de Amerikaanse en Nederlandse gemeenschappen met elkaar worden vergeleken. Uit dit onderzoek blijkt dat er met de invoering van CtC in gemeenschappen van beide landen meer wordt samengewerkt, meer begrip is voor de problemen en meer gebruik wordt gemaakt van risicofactoren en beschermende factoren. Ondanks de verschillen in culturele contexten zien we dat op één na alle gemeenschappen erin slagen stakeholders te mobiliseren, gebruik maken van epidemiologische data en meer gebruik maken van effectieve programma's. Voortdurende evaluatie en bijstellen van de plannen kost in de Nederlandse gemeenschappen meer moeite dan in de Amerikaanse.

Het tweede deel (*ONDERZOEK*) van deze studie (Hoofdstukken 5, 6, en 7) is methodologisch en analytisch van aard en exploreert mogelijkheden om specifieke probleemgedragingen van jongeren (anti-sociaal gedrag, geweld/delinquentie en alcohol gebruik)in gemeenschappen en landen te onderzoeken. Dit deel van de

studie geeft antwoord op de vraag *Waar moeten we ons preventieve werk beginnen?* In deze artikelen wordt de stelling verdedigt dat preventieve activiteiten zich moeten richten 1) op prevalentie gegevens van omgevingen (probleem); 2) en inzichten in de sociale determinanten (risicofactoren en beschermende factoren en structurele indicatoren) van de probleemgedragingen (oorzaken). Vier sociaal epidemiologische studies laten zien hoe dit kan worden onderzocht.

In stedelijke contexten wordt gebruik gemaakt van diverse preventieve interventies om anti-sociaal gedrag van jongeren te verminderen. Het is vaak niet duidelijk in welke omgevingen deze moeten worden uitgezet, waar deze zich op zouden moeten richten en welke winst ermee is te behalen. Hoofdstuk 5 '*Gerichte preventie van anti-sociaal gedrag in een stedelijke context'* is een studie van anti-sociaal gedrag onder 5,657 jongeren (12-15 jaar) die in 55 wijken wonen binnen 11 stadsdelen van Rotterdam. In dit hoofdstuk wordt een nieuwe manier van sociale criminaliteitspreventie gepresenteerd. Probleemgebieden worden geïdentificeerd evenals de risicofactoren van jongeren waarmee bepaalde gezondheidswinst (uitgedrukt in Attributieve Fractie) kan worden geboekt. Op basis van deze inzichten kunnen preventieve maatregelen worden genomen.

Veruit het meeste onderzoek naar prevalentie, determinanten en variatie van geweld en delinquentie onder jongeren is in de westerse wereld uitgevoerd. Hoofdstuk 6 *('Verschillende werelden, gemeenschappelijke wortels. Een multilevel analyse van geweld en delinquentie van jongeren in de Nederlandse Antillen als basis voor criminaliteitspreventie')* is een studie onder 7,842 jongeren (85%) van de Nederlandse Antillen die in 109 buurten wonen verdeeld over vijf eilanden. Geweld en delinquentie, demografische factoren alsmede risicofactoren en beschermende factoren worden in deze hiërarchische studie nader onderzocht. Risicofactoren en beschermende factoren zijn ook onder jongeren in deze niet-westerse wereld sterk geassocieerd met geweld en delinquentie. Om meer succesvol te worden in criminaliteitspreventie is het belangrijk dat prevalenties, sociale determinanten en variatie van geweld en jeugddelinquentie vanuit complexiteit worden onderzocht. Dergelijke studies moeten ook in de niet-westerse samenleving worden uitgevoerd. Deze studie is slechts een start.

Problematisch alcoholgebruik onder jongeren is een wereldwijd probleem. Vergelijkende studies tussen landen naar prevalentie en etiologie van alcoholgebruik en determinanten kunnen een belangrijke bijdrage leveren aan preventie wetenschap. Studies moeten dan wel vergelijkbaar zijn opgebouwd. In hoofdstuk 7 (*'Cross-nationale vergelijking van gemeenschapsvariatie in problematisch alcoholgebruik in Australië en Nederland'*) wordt het alcoholgebruik van jongeren uit Australië (n=7,812; N=36) en Nederland (n=15,082; N=124) met elkaar vergeleken. In dit hoofdstuk worden het problematisch drinken van jongeren (binge drinken), de associaties met risicofactoren en beschermende factoren van adolescenten (12-17 jaar) én structurele indicatoren die de omgeving karakteriseren (stedelijkheid en achterstand) onderzocht. Alcohol prevalentie onder jongeren is vergelijkbaar in beide landen. In Australië komt het binge drinken op jonge leeftijd meer voor. In Nederland daarentegen komt binge drinken

op latere leeftijd meer voor, zijn het meer jongens en komt het meer voor in landelijke gebieden. De variatie tussen gebieden is in Nederland ook groter. Ondanks vergelijkbare invloed van risicofactoren en beschermende factoren in beide landen laat deze bi-nationale studie zien dat er verschillen zijn tussen de omgevingen waarin jongeren opgroeien en dat deze het binge drinken beïnvloeden. Bij gerichte preventieve interventies moet met deze omgevingsverschillen rekening worden gehouden.

Het derde en laatste deel van deze studie (*IMPACT)* geeft antwoord op de vraag: Is Communities that Care effectief om probleemgedragingen van adolescenten te voorkomen? en gaat in op onderzoek naar de resultaten van Communities that Care in Nederland.

Hoofdstuk 8 ('*Preventie van Probleemgedrag onder Jongeren: de impact van de Communities that Care-strategie in Nederland (2008-2011)'*) onderzoekt of de Communities that Care preventiestrategie effecten laat zien op de ontwikkeling van probleemgedragingen en specifieke risico en beschermende factoren van jongeren (12-18 jaar). Propensity Score Matching is gebruikt binnen een drie niveau mixed model paneldesign om de effecten vast te stellen. Er kon geen effect worden vastgesteld voor de ontwikkeling van probleemgedragingen, risico en beschermende factoren noch op de initiatie van drinken en roken. De teleurstellende resultaten van deze community- interventiestudie worden geplaatst in de context van beperkingen van de studie (quasi-experimenteel, kleine sample size) en bedreigingen voor interne validiteit (waaronder te korte duur van interventie, contaminatie, gebrek aan effectieve en geteste programma's).

Hoofdstuk 9 (*'Internationaal translationeel onderzoek: Belofte en voorzichtigheid'*) is een discussiepaper over dit soort onderzoek, programma adaptatie en, vooral, het belang om internationaal te investeren in dit soort translationeel onderzoek.

In hoofdstuk 10 (*Discussie)* worden de belangrijkste bevindingen samengevat. Het eerste deel van de studie laat zien dat Communities that Care kan worden gerekend tot de nieuwe generatie preventieprogramma's waarin onderzoek, innovatie, effectieve programma's en evaluatie zijn geïntegreerd. De strategie is een rationele benadering van jeugdbeleid waarmee meer coherentie is aan te brengen in dit beleid, lokale overheden meer greep krijgen op hun eigen problematiek en de effectiviteit van het lokale jeugdbeleid wordt versterkt. Dit deel geeft ook antwoorden op praktische vragen zoals met welke effectieve programma's kan op dit moment in Nederland worden gewerkt en wat betekent invoering van het programma in twee verschillende sociaal-culturele contexten (Nederland en de Verenigde Staten). Het tweede deel van deze studie laat zien dat gericht jeugdbeleid mogelijk is wanneer dit beleid zich richt op de specifieke problemen én de sociale determinanten (risicofactoren en beschermende factoren) van deze omgevingen. Het laat ook zien hoe dit ecologisch onderzoek kan worden uitgevoerd. Het derde

deel van de studie laat zien hoe de effecten van een community-gericht programma kunnen worden onderzocht, presenteert tegenvallende impact resultaten maar maakt deze ook begrijpbaar tegen het licht van het studiedesign en de beperkte voorwaarden waaronder het programma in Nederland is uitgezet.

Deze studie kent enkele sterke punten. 1) De resultaten zijn gebaseerd op langdurig praktisch werk dat over de jaren is verricht en uitgezet binnen zeer verschillende omgevingen. Lang niet alle sociale interventies krijgen de wetenschappelijke aandacht die ze verdienen zoals de sociale interventie die in deze studie centraal staat. 2) Binnen deze studie kon tevens gebruik worden gemaakt van een experimenteel design. Naar sociale investeringen wordt in Nederland zelden experimenteel onderzoek gedaan (ook al wordt er wel veel over gediscussieerd). 3) Tot slot worden zeer verschillende onderdelen van sociaal investeren (zoals onderzoek, innovatie, effectieve programma's en evaluatie) met elkaar in verband gebracht in één studie.

Maar uiteraard kent deze studie zijn beperkingen. 1) De nadruk in deze studie ligt op probleemgedragingen in de fase van adolescentie. De gezonde ontwikkeling van adolescenten (bijvoorbeeld deelname aan onderwijs, sport en samenleving) en de relatie met sociale determinanten zijn niet aan bod gekomen. Op dat terrein wordt meer en meer wetenschappelijk onderzoek gedaan. Steden en wijken vragen steeds vaker naar inzichten op dit gebied omdat het perspectief van probleemgedragingen als negatief en te beperkt wordt ervaren. 2) Wat het experimenteel onderzoek betreft, dat deel uit maakt van deze studie, kan gezegd worden dat alle vijf steden die in 2008 met CtC zijn gestart aan het effectonderzoek mee wilden doen. Maar niet alle steden konden aan de eis van randomisatie voldoen, zoals als doel gesteld. Het onderzoek was opgezet als een Randomized Controlled Trial maar kreeg om deze rede een quasi experimenteel karakter. De uitkomsten van de studie zijn vervolgens wel gecontroleerd op een groot aantal achtergrond variabelen en de uitkomsten zijn gecontroleerd met de moderne matchings techniek van de 'PSM'. 3) Uiteindelijk zijn wij er niet in geslaagd om de grote onderzoeksaantallen te behalen die ons voor aanvang van de studie voor ogen stonden. Dit soort onderzoek kan alleen worden uitgevoerd als een andere partij (een overheid, een fonds) de implementatie voor rekening neemt en daar financieel en organisatorisch voor verantwoordelijk is. Nu moesten de onderzoekers toch vaak en veel met verschillende partijen onderhandelen en rekening houden met planning en afspraken binnen soms verschillende praktijken. De onderzoekers hebben zich zo flexibel mogelijk opgesteld zonder het oorspronkelijk onderzoeksplan in gevaar te brengen. Maar uiteindelijk moest er meer water in de wijn worden gedaan dan hen bij aanvang van de studie voor ogen stond.

Op basis van deze studie kunnen we de politiek enkele suggesties meegeven met betrekking tot preventieve interventies en programma's in de toekomst. Promotie van welzijn van jongeren en het voorkomen van probleemgedrag van jongeren en het detecteren van sociale determinanten die hieraan ten grondslag liggen moet de kern zijn van jeugdbeleid, internationaal, nationaal en op lokaal niveau. Het raamwerk van Communities

that Care biedt hier een goede onderlegger voor. 1) Communities hebben onderzoekssystemen nodig waarmee welzijn, probleemgedrag en sociale determinanten zijn te onderzoeken. Het monitor systeem van CtC laat zien hoe gemeenschappen functioneren, maakt gericht jeugdbeleid mogelijk en biedt de basis voor preventieve programmering en evaluatie. 2) Goede coördinatie en afstemming van activiteiten van organisaties en partijen, zoals in deze studie gepresenteerd, verbetert lokaal preventieve inspanningen. 3) Effectieve en geteste preventieve programma's ondersteunen de positieve ontwikkeling van jongeren. Kennis en gebruik van deze programma's veronderstellen politieke wil en wetenschappelijke capaciteit. De preventiestrategie Communities that Care kan verschillende partijen bij elkaar brengen en samenwerking bevorderen met betrekking tot evidence based-handelen.4) Sociale politiek, programma's en interventies om sociale omstandigheden te verbeteren moeten, meer dan nu het geval is, voortkomen uit sociale experimenten. Oplossingen voor sociale problemen moeten worden gevonden door continue experimenten waarmee we leren van wat werkt en leren van de fouten die we maken.

Wetenschappelijk is er nog een lange weg te gaan voor deze jonge wetenschap. Zeker wat betreft preventieve investeringen in wijken, steden en landen staat deze wetenschap in de kinderschoenen. Enkele onderwerpen vragen in ieder geval wetenschappelijke aandacht de komende jaren. 1)Het eerste onderwerp dat de komende jaren aandacht vraagt is de gezonde ontwikkeling van jongeren. Hoe kan dit worden vastgesteld en wat zijn de relaties met risicofactoren en beschermende factoren? 2)Een tweede onderwerp is de samenhang tussen ontwikkeling van probleemgedragingen (en gezond gedrag) van kinderen en jongeren, de contexten waarin jongeren opgroeien (gezin, school, vrienden en gemeenschappen) én de risicofactoren en beschermende factoren waar ze hier mee te maken hebben. De aandacht daarbij zal meer verplaatst moeten worden van associaties tussen gedragingen en risicofactoren en beschermende factoren naar patronen van gedrag. 3)Er is veel kennis opgebouwd over de invloed van risicofactoren en beschermende factoren op het gedrag van jongeren. De invloed van structurele indicatoren (zoals bijvoorbeeld armoede of sociaal economische status van de omgeving waarin jongeren) en daarmee de invloed van de bredere maatschappelijke context op risicofactoren en beschermende factoren heeft daarbij te weinig aandacht gehad tot nog toe. Onderzoeken van gemeenschappen binnen landen en tussen landen, zoals ook in deze studie gepresenteerd, kunnen aan deze kennisontwikkeling bijdragen. 4) Longitudinale en experimentele preventie studies moeten worden uitgebreid naar andere delen van de wereld waar 86% van de jeugdbevolking leeft. Onze kennis over hun gezondheid en welzijn in relatie tot sociale determinanten en geteste en effectieve programma's om ze te bereiken vraagt aandacht. 5) In Nederland moeten we het niveau en het gebruik van geteste en effectieve preventie programma's versterken. Daarmee steunen we gezinnen, scholen en wijken in hun bijdrage aan de ontwikkeling van kinderen en jongeren, ook buiten klinische settings om.

Het serieus nemen van sociale interventies is belangrijk voor de ontwikkeling van sociale politiek. Sociale politiek moet in ieder geval voor een deel gebaseerd zijn op wetenschappelijk onderzoek. Deze studie geeft aandacht aan enkele onderwerpen die daarbij een rol spelen maar wil vooral bijdragen aan geïnformeerd debat en effectief beleid.

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geanimeerd in gesprek met en vooral door elkaar
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misschien had ik ze goed gekend maar ondertussen vergeten of, nog gekker,
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Curriculum Vitae

Harrie Jonkman was born on 29 November, 1956, in Hengelo(O) in the Netherlands. He received his secondary school diploma from Twickel College in 1976. He studied Sociology in Utrecht (1980), and Pedagogy and Educational Studies (1984) in Groningen and Clinical Pedagogy (2003). He worked on youth studies at the Criminological Institute Groningen, in the schools of special education and human rights institutes (Amnesty International and National Comité 4 and 5 May). In 1999 he moved to the National Youth Institute, and since 2008 has been senior at the Verwey-Jonker Institute. His interests are in social and cognitive development of children and adolescents, social determinants, and prevention. Over the years he has been active in steering committees on education and in international prevention science. Besides highbrow science, he likes lowbrow Americana music, poetry, global travelling, as well as local gardening. He lives with his family on a houseboat in the outskirts of Amsterdam.

Appendix 1.

Overview Study

Chapter	Title	Authors	Presented	Published in journals or chapter of books	Sample	N
1	Introduction	Jonkman, H.		2012		
Part I	Practice					
2	Communities that Care behind dikes and dunes	Jonkman, H., Junger-Tas., J. Dijk, B. van	SPR, Quebec 2004	2005 Children & Society, 19, 105-116		
3	Prevention	Jonkman, H., Yperen, T. van & Prinsen, B.		Chapter 11, in: Tomorrow's Criminals. The development of Child Delinquency and Effective Interventions, Ashgate Publicing, 2008 (ook als Preventie in Misdadigers van morgen? Over de ontwikkeling en effectieve aanpak van jeugddelinquentie onder twaalfminners, 2010, 149-165.	Children 0-12 years	
4	Communities that Care: Core elements and context. Research of implementation in two countries	Jonkman, H., Haggerty, K., Steketee, M., Fagan, A., Hanson, K. & Hawkins, D.	SPR, San Francisco 2008	Social Development Issues, 2008, 42-57	Community participants in two countries	N=22J=2 countries
Part II	Research					
5	Prevention of anti-social behaviour in an urban context. Where to begin, what to target, what to expect?	Jonkman, H., Boutellier, H., Cuijpers, P. Looy, P. van de & Twisk, J.	SPR, Washington 2009	Crime Prevention and community safety, 13 (2), 102-118	Adolescents 12-15 year	n=5.657 N=55 neighborhood J=11 boroughs
6	Different worlds, common roots. A multilevel analysis of youth violence and delinquency in the Netherlands Antilles as a basis for crime prevention.	Jonkman, H., Cuijpers, P. & Twisk, J.	Crime and violence conference, Mexico City, oktober 2010	Wellbeing and social policy, 6(2), 2010, 25-45/ Bienestar y Politíca Social, 6(2), 2010, 27-47	Adolescents, 13-18 years	n=7.842 N=109 communities J=5 islands
7.	Cross-national adolescent alcohol use. Comparison of community variation in adolescent heavy alcohol use in Australia and the Netherlands'	Jonkman, H. Steketee, M. Toumbourou, J.. Williams, J. & C. Karly	SPR, Washington, 2011	Health Research International, September 6, 2012,	Adolescents 12-17 years	n=7.866/ n=17.961 N=36/124 communities J=2 countries

Part III	Impact				
8	Prevention of problem behaviours: an quasi-experimental study of Communities that Care in the Netherlands (2008-2011).	Jonkman, H., Aussems, C. Steketee, M., Boutellier, H., Cuijpers, P.	Submitted	Adolescents 12-18 years	N=785 N=10 J=2
9	International translational research: Promise and caution	Catalano, R.F. & Jonkman, H. .	Editorial. To submit		
10	Discussion	Jonkman, H.	2012		

Appendix 2.

Survey

´Communities that Care´

The Netherlands

OPPORTUNITIES FOR PROSOCIAL INVOLVEMENT (FP2) (alpha=.73)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion.				
v58_7	If I had a personal problem, I could ask my mom or dad for help.	NO!	no	yes	YES!
v58_9	My parents give me lots of chances to do fun things with them..	NO!	no	yes	YES!
v58_3	My parents ask me what I think before most family decisions affecting me are made	NO!	no	yes	YES!

REWARDS FOR PROSOCIAL INVOLVEMENT (FP3) (alpha=.83)

Naam Variabel	Vraag	Scoring			
	Choose the answer that describes your opinion.				
v57_10	My parents notice when I am doing a good job and let me know about it.	NO!	no	yes	YES!
v57_4	My parents let me know when they are proud of me for something I have done.	NO!	no	yes	YES!

SCHOOL – RISK FACTORS

ACADEMIC FAILURE (SR1)
(alpha=.58)

Variable name	Question	Scoring			
v19	Putting them together, what were your report marks like last year?	Mostly, unsatisfactory	Mostly, sixs	Mostly, sevens	Mostly, eights or higher
	Choose the answer that describes your opinion.				
v21_7	My report Marks are better than the Marks of most students in my class.	Mostly, unsatisfactory!	Mostly, sixs	Mostly, sevens	Mostly, eights or higher

LOW COMMITMENT TO SCHOOL (SR2)
(alpha=.73)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion.				
v22_2	A lot of difficulties to go to school.	NO!	no	yes	YES!
v22_3	On school my attention is fixed on the lesson.	NO!	no	yes	YES!
v22_4	Sitting in school is difficult for me.	NO!	no	yes	YES!
v22_5	I hate going to school	NO!	no	yes	YES!
v22_1	I try to do my best on homework	NO!	no	yes	YES!

v20	During the last FOUR WEEKS did you miss a whole school day because you skipped or 'cut'?	NO!	no	yes	YES!

SCHOOL – PROTECTIVE FACTORS

OPPORTUNITIES FOR PROSOCIAL INVOLVEMENT (SP1) (alpha=.60)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion.				
v21_1	In my school, students have lots of chances to help decide things like class activities and rules.	NO!	no	yes	YES!
v21_3	There are lots of chances for students in my school to get involved in activities outside of class.	NO!	no	yes	YES!
v21_4	There are lots of chances for students in my school to talk with a teacher one-on-one.	NO!	no	yes	YES!
v21_8	There are lots of chances to be part of class discussions or activities	NO!	no	yes	YES!

REWARDS FOR PROSOCIAL INVOLVEMENT (SP2) (alpha=.62)

Variable name	Question	Scoring

	Choose the answer that describes your opinion.				
v21_2	My teacher(s) notices when I am doing a good shop and let me know about it.	NO!	no	yes	YES!
v21_6	My teachers praise me when I work hard in school.	NO!	no	yes	YES!
v21_5	I feel safe at my school	NO!	no	yes	YES!

PEER-INDIVIDUAL– RISK FACTORS

REBELLIOUSNESS (IR1) (alpha=.65)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion.				
v26_5	I like to see how much I can get away with	NO!	no	yes	YES!
v26_6	I ignore rules that get in my way.	NO!	no	yes	YES!
v26_8	I do the opposite of what people tell me, just to get them mad.	NO!	no	yes	YES!

GANG INVOLVEMENT (IR2) (1 item)

Variable	Question	Scoring

name										
v46_7	*How old where you when you first…* ..belonged to a gang?	Never have	10 or younger	11	12	13	14	15	16	17 or older

EARLY INITIATION OF ANTISOCIAL BEHAVIOUR (IR3) (alpha=.36)

Naam Variabel	Vraag	Scoring								
	How old where you when you first:									
v46_4	..carried a weapon?	Never have	10 or younger	11	12	13	14	15	16	17 or older
v46_5	..got suspended from class?	nooit gedaan	10or younger	11	12	13	14	15	16	17 or older
v46_8	.. got arrested?	nooit gedaan	10oryounger	11	12	13	14	15	16	17 or older
v46_9	..attacked someone with the idea of seriously hurting him?	nooit gedaan	10oryounger	11	12	13	14	15	16	17 or older

EARLY INITIATION OF DRUG USE (alpha=.54)

Variable name	Question	Scoring								
	How old were you when you first..:									
v46_1	..smoked a cigarette?	Never have	10 oryounger	11	12	13	14	15	16	17 or older
v46_2	..drank alcohol?	Never have	10 oryounger	11	12	13	14	15	16	17 or older
v46_3	..used soft drugs (fe marijuana)?	Never have	10 oryounger	11	12	13	14	15	16	17 or older
v46_6	..used hard drugs (fe cocaine, XTC, heroin)?	Never have	10 oryounger	11	12	13	14	15	16	17 or olderr

FAVOURABLE ATTITUDE TOWARDS DRUGS (IR5) (alpha=.77)

Variable name	Question	Scoring			
	How wrong do you think it is for someone your age to..				
v23_6	..be drunk?	Very wrong	Wrong	alittlebitwrong	Not wrong at all
v23_7	.. use soft drugs (fe marihuana or hash)?	Very wrong	Wrong	alittlebitwrong	Not wrong at all
v23_8	.. use hard drugs (fe cocaine or XTC)?	Very wrong	Wrong	alittlebitwrong	Not wrong at all
v23_9	..smoke cigarettes'?	Very wrong	wrong	alittlebitwrong	Not wrong at all

FAVOURABLE ATTITUDE TOWARDS ANTISOCIAL BEHAVIOUR (IR6)

(alpha=.74)

Variable name	Question	Scoring				
	How wrong do you think it is for someone your age to..					
v23_1	..take a weapon?	Verywrong	wrong	alittlebitwrong	notwrongatall	
v23_2	..to steal something?	Verywrong	wrong	alittlebitwrong	notwrongatall	
v23_3	..pick a fight with someone?	Verywrong	wrong	alittlebitwrong	notwrongatall	
v23_4	..attack someone with the idea of seriously hurting him?	Verywrong	wrong	alittlebitwrong	notwrongatall	
v23_5	..stay away from school?	Verywrong	wrong	alittlebitwrong	notwrongatall	

FRIENDS USE OF DRUGS (IR7)
(alpha=.75)

Variable name	Question	Scoring					
	In the past year (12 months), how many of your best friends have..						
v24_1	..smoked sigarettes?	None	1 friend	2 friends	3 friends	4 friends	Dn'tknow
v24_2	..used alcohol?	None	1 friend	2 friends	3 friends	4 friends	Dn'tknow
v24_3	..used softdrugs (fe marihuana, hash)?	None	1 friend	2 friends	3 friends	4 friends	Dn'tknow
v24_4	..used harddrugs (fe XTC, cocain or amphetamin)?	None	1 friend	2 friends	3 friends	4 friends	Dn'tknow

INTERACTION WITH ANTISOCIAL PEERS (IR8) (alpha=.76)

Variable name	Question	Scoring					
	In the past year (12 months), how many of your best friends have..						
v24_5	..been suspended from school?	None	1 friend	2	3 friends	4 friends	Donotknow
v24_6	een wapen bij zich hadden?	None	1 friend	2 friends	3 friends	4 friends	Donotknow
v24_7	iets hebben gestolen?	None	1 friend	2 friends	3 friends	4 friends	Donotknow
v24_8	door de politie zijn opgepakt omdat ze iets hadden gedaan?	None	1 friend	2 friends	3 friends	4 friends	Donotknow
v24_9	zonder diploma van school zijn gegaan?	None	1 friend	2 friends	3 friends	4 friends	Donotknow

PEER-INDIVIDUAL– PROTECTIVE FACTORS

BELIEF IN MORAL ORDER (IP1)
(alpha=.61)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion.				
v26_1	I think it is okay to take something without asking if you can get away with it	NO!	no	yes	YES!
v26_2	I think it is okay to cheat at school.	NO!	no	yes	YES!
v26_4	It is important to be honest with your parents	NO!	no	yes	YES!
v26_3	It is all right to beat up people if they start the fight	NO!	no	yes	YES!

SOCIAL SKILLS (IP2)

(not used in our research)		
Variable name	**Question**	**Scoring**
v27	You are looking at T-shirts in a cloth-shop with a friend? You look up and see her slip a T-shirt under her coat. She smiles and says :"Which one do you want? Go ahead, take it while nobody's around". Ther is nobody in sight, no employees and no other customers. What would you do now	-Ignore her -Grab a T-shirt and leave the store -Tell her to put the T-shirt back -Act like it's a joke and ask her to put the T-shirt back
v28	It's 8.00 on a weeknight and you are about to go over to a friend's home when your mother asks you where you are going. You say "oh, just going to go hang out with some friends". She says, "No, you'll just get into trouble if you go out. Stay home tonight". What would you do now?	-Leave the house anyway -Explain what you are going to do with your friends, tell your mom or dad when you'get home, and ask if you can go out -Not say anything and start watching TV -Get into an argument with your mom and dad
v29	You are visiting another town, and you don't know any of the people your age there. You are walking down the street, and some teenager you don't know is walking toward you. He is about your size, and as he is about to pass you, he deliberately bumps into you and you almost lose your balance. What would you say or do?	-Push the person back -Say "Excuse me" and keep on walking -Say "Watch where you're going" and keep on walking -Swear at the person and walk away
v30	You are at a party at someone's house and one of your friends offers you harddrugs (for example cocaine). What would you say or do?	- Take the drugs and use - Tell your friend"No thanks, I don't use". - Tell your friend that you are against use of harddrugs - Make up a good excuse, tell your freind you had something else to do and leave

COMMUNITIES THAT CARE SURVEY
Item Construct Dictionary

RELIGIOSITY (IP3)

1 item

Variable name	Question	Scoring			
	Choose the answer that describes your opinion.				
v26_7	Religion/spirituality is important in my live	NO!	no	yes	YES!

PROBLEM BEHAVIOUR OUTCOMES

VIOLENCE

Variable name	Question	Scoring	
	How many times in the past year (12 months) have you..		
v25_10	.. carried a weapon?	no	yes
v25_2	.. purposely damaged or destroyed something on the street?	no	yes
v25_5	.. participate in a fight?	no	yes
v25_6	.. attacked someone with the idea of seriously hurting him?	no	yes
v25_7	.. threatened someone to get money?	no	yes

DELINQUENCY

Variable name	Question	Scoring	
	How many times in the past year (12 months) have you..		
v25_3	.. stolen something from a shop?	no	yes
v25_4	.. been arrested by the police?	no	yes
v25_8	.. sold stolen things?	no	yes
v25_9	.. stolen something on your school?	no	yes

SCHOOL DROPOUT

Variable name	Question	Scoring	
	How many times in the past year (12 months) have you..		
v25_1	..been suspended from your class?	No	yes

ALCOHOL AND DRUGS - SMOKING

Variable name	question	Scoring				
v38	Have you ever smoked sigarettes?	no			yes	
v39	Have you smoked sigarettes during the past 30 days?	no			yes	
v40	How many sigarettes do you smoke daily?	0 cigarettes	1-5 cigarettes	6-10 cigarettes	11-15 cigarettes	16 or more cigarettes

ALCOHOL AND DRUGS – ALCOHOL

Naam Variabel	Vraag	Scoring				
v41	Have you ever dronk alcohol (beer, wine, hard liquor)?	No				yes
v42	How often did you drink alcohol during the last 30 days?	0 occassion		1-2 keer	3-5 keer	6-10 keer / meer dan 10 keer
v43	How many glasses of alcohol did you drink totally during the last 30 days?	0	1-5	6-10	11-15	16 or more
v44	Think about the last two weeks: How often did you drink five or more glasses on one occasion?	0	1-2	3-5	6-10	10 or more

ALCOHOL AND DRUGS - DRUGS

Variable name	Question	Scoring				
	How often did you use one of the following drugs during the last 30 days:					
v45_1	..hash, marihuana, wiet/weed?	0	1-2	3-5	6-9	10 or more
v45_2	..XTC (ecstasy)	0	1-2	3-5	6-9	10 or more
v45_3	..cocaine, heroine, speed or amphetamines	0	1-2	3-5	6-9	10 or more
v45_4	..valium, poppers, lijm, paddo´s etc	0	1-2	3-5	6-9	10 or more

SEXUALITY RELATED PROBLEM BEHAVIOUR

Variable name	Question	Scoring		
v32	What do you think about unsafe sex?	I would never do that	It's not impossible I will do that	I did it already
v33	Did you have sex last year (12 months) with someone with whom you had no love relation?	no	yes	
v34	With how many persons you had sex last year without having a love relation?	1	2 or more	
v35	Did you use a condom last time you had sex with a person without having a love relation?	no	yes	
v36	Are you ever been sexual misused ? (for example sexual activitities without given permission, assault, raped))	no	yes	
v37	Only girls: have you ever been pregnant?	no	yes	

DEPRESSION (alpha=.87)

Naam Variabel	Vraag	Scoring			
	Choose the answer that describes your opinion.				
v31_1	Sometimes I think that life is not worth it.	NO!	no	yes	YES!
v31_2	At times I think I am no good at all.	NO!	no	yes	YES!
v31_3	All in all, I am inclined to think that I am a failure.	NO!	no	yes	YES!
v31_4	In the past year, have you felt depressed or sad MOST days, even if you felt OK sometimes?	NO!	no	yes	YES!

DEMOGRAPHICS

OPEN QUESTION

VariablE name	Question	Scoring

v2a	What is the name of your school?
v2b	In which town.city you go to school?
v17	What is the name of your neigbourhood?
v18	What is your postcode?

AGE

Variable name	Question	Scoring								
v1	What is your age?	11 year	12 year	13 year	14 year	15 year	16 year	17 year	18 year	19 jaar or older

SCHOOL BACKGROUND

Variable	Question	Scoring					
v3	What's your class?	First class	Second class	Th class	4th cl	5 c	6 c
v4	What kind of education you follow?	special education MBO (mbo, roc, meao, mts)	vocational other school/educ	Prim class	Vmbo	havo	vwo

GENDER

Variable name	Question	Scoring

v5	Are you a boy or girl?	Boy	girl

ETNICITY

Variable name	Question	Scoring						
v6	In which country are you born?	Nether-lands	Surinam	Antilles/ Aruba	Turkey	Maroc	Indonesia	Other
v7	In welk land is je vader geboren?	Nether-lands	Surinam	Antilles/ Aruba	Turkey	Maroc	Indonesia	Other
v8	In welk land is je moeder geboren?	Nether-lands	Surinam	Antilles/ Aruba	Turkie y	Maroc	Indonesia	Other

HOME SITUATION

Variable name	Question	Scoring			
v9	With whom are you living in your house?	Mother stepmother pleegmother grandmother	father stepfather pleegfather grandfather	uncle aunt brother(s) stepbrother(s)	Sister (s) Stepsister(s) Other children Other adults
v10	Ho many brothers and sisters do have?	no brothers/siters	1	2	3 of more

LANGUAGE

Variable name	Question	Scoring			
v11	What is the language at home?	Dutch Sranantongo	Chinese Hindi	Papiamento Turkish	Arabic Berber Other language
v12	What language do you speak with other friends?	Dutch Sranantongo	Chinese Hindi	Papiamento Turkish	Arabic Berber Other language

Social Economical Status PARENTS

Variable name	Question	Scoring		
v13	What school did your father follow?	Primary school Ibo, VBO	Secondary school Mbo	Hbo or university Don't know
v14	Does your father have a job?	no	yes	Don't know
v15	What school did your mother follow?	Primary school Ibo, VBO	Secondary school Mbo	Hbo or university Don't know
v16	Does your mother have a job?	no	yes	Don't know

HONESTY						
Variable name	**Question**	**Scoring**				
v60	Did you filled in the most questions of this survey honestly?	NO!	no	yes	YES!	
v59	Did you participate honestly in this schoolsurvey?	NO!	no	yes	YES!	
v45_5	On how many occasions have you used phenoxydine, pox of px during the past 30 Days?	0 occa-sions	1-2 occa-sions	3-5 occa-sions	6-9 occa-sions	10 or more occasions

COMMUNITY – RISK FACTORS

LOW NEIGHBOURHOOD ATTACHMENT (CR1) (alpha=0.85)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion				
v48_7	I'd like to get out of my neighbourhood	NO!	no	yes	YES!
v49_1	If I had to move, I would miss the neighbourhood I now live in.	NO!	no	yes	YES!
v49_3	I like my neighbourhood	NO!	no	yes	YES!

COMMUNITY DISORGANIZATION (CR2) (alpha=0.84)

Variable name	Question	Scoring			
	In the neighourhood in which I live				
v50_4	There is drug selling	NO!	no	ja	JA!
v50_3	There is crime	NO!	no	ja	JA!
v50_2	There is a lot of garbage on the street	NO!	no	ja	JA!
v50_1	There is lots of graffiti	NO!	no	ja	JA!
v50_5	There are often fights	NO!	no	ja	JA!
	Choose the answer that describes your opinion.				

v48_6	I feel save in the neigbhourhood I live.	NO!	no	yes	YES!

TRANISITION AND MOBILITY (CR3)
(1 item)

Variable name	Question	Scoring			
v52	Have you changes home in the past year?	No		YES	

PERCEIVED AVAILABILITY OF DRUGS AND WEAPONS (CR4)
(alpha=.93)

Variable name	Question	Scoring				
v47_1	If you wanted to get hard drugs in your neighbourhood (like cocaine, XTC or amphetamines) how easy would it be for you to get some?	Very Hard	Sort of Hard	Sort of Easy	Very Easy	Don't know
v47_2	If you wanted to get a weapon, how easy would it be for you to get one?	Very Hard	Sort of Hard	Sort of Easy	Very Easy	Don't know

LAWS AND NORMS FAVOURABLE TO ANTISOCIAL BEHAVIOUR (CR5) (alpha=.63)

Variable name	Question	Scoring			
	. Choose the answer that describes your opinion.				
v48_1	If a kid would destroy something in your neighbourhood would he or she be accost by someone?	NO!	no	yes	YES!
v48_2	If a kid in your neighbourhood would beggar some other kid, would he or she be accost by someone?	NO!	no	yes	YES!
v48_3	If youngsters have a serious fight in your neighbourhood would someone in the neighbourhood call the police?	NO!	no	yes	YES!

COMMUNITY– PROTECTIVE FACTORS

OPPORTUNITIES FOR PROSOCIAL INVOLVEMENT (CP1) (alpha=.76)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion				
v49_4	There are lots of adults in my neighbourhood I could talk to about something important	NO!	no	yes	YES!

v48_5	In your neighbourhood there are activities for people of my age (like sport clubs).	NO!	no	yes	YES!

REWARDS FOR PROSOCIAL INVOLVEMENT (CP2) (alpha=.78)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion.				
v48_4	There are people in my neighbourhood who are proud of me when I do something well.	NO!	no	yes	YES!
v48_8	There are people in my neighbourhood who encourage me to do my best.	NO!	no	yes	YES!
v49_2	My neighbours notice when I am doing a good job and let me know about it.	NO!	no	yes	YES!

FAMILY– RISK FACTORS

FAMILY HISTORY OF ANTISOCIAL BEHAVIOUR (FR1) (alpha=.86)

Variable name	Question	Scoring

v56_3	Has anyone in your family ever had a severe alcohol or drug problem	no	yes	don't know	
v56_1	Has anyone in your family ever used hard drugs?	no	yes	don't know	
v56_2	Has anyone in your family ever sold drugs?	no	yes	don't know	
v56_4	Has anyone in your family ever been in prison?	no	yes	don't know	

POOR FAMILY MANAGEMENT (FR2)
(alpha=.78)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion..				
v57_9	The rules in my family are clear	NO!	no	yes	YES!
v57_5	My parents want to know if I don't come home on time	NO!	no	yes	YES!
v57_7	My family has clear rules about alcohol and drug use	NO!	no	yes	YES!
v57_6	If you would use some drugs would you be caught by your parents?	NO!	no	yes	YES!
v57_8	If you skipped school, would you be caught by your parents?	NO!	no	yes	YES!
v58_10	My parents ask if I've gotten my homework done	NO!	no	yes	YES!
v58_12	Do you parents notice if you are not on time home?	NO!	no	yes	YES!
v57_2	When I am not at home, one of my parents knows where I am and who I am with..	NO!	no	yes	YES!

FAMILY CONFLICT (FR3)
(alpha=.74)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion.				
v57_1	People in my family often insult or yell at each other.	NO!	no	yes	YES!
v57_3	We argue about the same things in my family over and over	NO!	no	yes	YES!
v58_11	People in my family often insult or yell at each other	NO!	no	yes	YES!

PARENTAL ATTITUDES FAVOURABLE TOWARDS DRUG USE (FR4) (alpha=.73)

Variable name	Question	Scoring				
v55_1	What do your parents think if you often drink alcohol?	Very wrong	wrong	alittlebitwrong	not wrong at all	Dontknow
v55_2	What do your parents think if you often smoke cigarettes?	Very wrong	wrong	alittlebitwrong	not wrong at all	Dontknow
v55_3	What do your parents think if you often use soft drugs (like marihuana or hash)?	Very wrong	wrong	alittlebitwrong	not wrong at all	Dontknow

PARENTAL ATTITUDES FAVOURABLE TOWARDS ANTISOCIAL BEHAVIOUR (FR5) (alpha=.80)

Variable name	Question	Scoring

v55_4	What do your parents think if you steal something?	Very wrong	wrong	alittelbitwrong	notwrongatall	Dontknow
v55_5	What do your parents think if you destroy something in the Neighbourhood	Very wrong	wrong	alittlebitwrong	notwrongatall	Dontknow
v55_6	What do your parents think if you pick a fight with someone?	Very wrong	wrong	alittlebitwrong	notwrongatall	Dontknow

FAMILY– PROTECTIVE FACTORS

ATTACHMENT (FP1) (alpha=.73)

Variable name	Question	Scoring			
	Choose the answer that describes your opinion.				
v58_1	Do you feel very close to your mother?	NO!	no	yes	YES!
v58_2	Do you share your thoughts and feelings with your mother?	NO!	no	yes	YES!
v58_8	Do you feel very close to your father?	NO!	no	yes	YES!
v58_4	Do you share your thoughts and feelings with your father?	NO!	no	yes	YES!
v58_5	Do you like to do activities with your mother?	NO!	no	yes	YES!
v58_6	Do you like to do activities with your father?	NO!	no	yes	YES!

Appendix 3

Family- Risk Factors

FR1 Family History of ProblemBehaviour

As children grow up in a family with a history of alcohol or drug addiction is more likely that they themselves will develop later. The same is true for children growing up in a family with a history of criminal behavior.

FR2 Poor Family Management

Poor Family Management means there is no clear picture of desired behavior, that parents not adequately monitor and guide their children and that parents give excessive or inconsistent penalties. As children grow up in families that are poorly managed, they run more risk of developing problem behaviors.

FR3 Family Conflict

Continuing and major conflicts between main caregivers or between caregivers and children increase the risk of developing behavioral problems in children who grow up in such families. It appears that conflicts between family members greater influence on the development of problem behavior than family structure.

FR4 Parental Attitudes Favorable Towards Drug Use

Positive attitudes of parents regarding alcohol and drug use of children or young adolescents can lead to an increased risk of developing alcohol and drug related problems.

FR5 Parental Attitudes Favorable to Antisocial Behaviour

The same applies to a positive attitude of parents in relation to antisocial behavior such as theft, vandalism and aggression. If the parents are in favor of this behavior, the children will be more likely to exhibit these behaviors.

School-Risk Factors

SR1 Academic Failure

Poor school results during primary school indicate an increased risk of drug use, crime, violence, sexuality-related problem behavior and dropouts. Hence the figures for young people are asked what they get in school and whether they think they have better school results than their classmates.

SR2 Low Commitment to School

Children with low commitment to school often loose their involvement with the school. Because of this, they are at risk of developing problem behaviors.

Peer-individual-Risk Factors

IR1 Rebelliousness

Children who feel they may fall outside because of their recalcitrant behavior. This could include their attitude does not comply with societal rules or they adopt an active rebellious stance toward society. These children are at increased risk for drug use, crime and school drop-out.

IR2 Gang Involvement

The likelihood of different behaviours increase of when youngsters are part of a group of friends who accept illegal things or even do illegal things.

IR3 Early Initiation of Antisocial behavior

The sooner children show antisocial behavior, the more likely that this behavior later in life will continue.

IR3 Early Initiation of Drug Use

The same is true for the early start of smoking, alcohol and/or drugs. The earlier children start with this, the more likely their behavior later will take chronic forms.

IR5 Favourable Attitudes towards Drug Use

In elementary school, young people not often use cigarettes, alcohol and drugs and on that moment it is for them hard to imagine why people use these. In high school, they learn to know others who do use cigarettes, alcohol and of drug. This creates a greater tolerance. As a result, they are also more at risk.

IR6 Favourable Attitudes towards Antisocial Behaviour

The same applies to the attitude that children have with respect to antisocial behavior.

IR7 Friends Use of Drugs

Children who interact with peers who smoke cigarettes, drink alcohol and/or use drugs are at increased risk themselves to use.

IR8 Interaction with Antisocial Peers

Young people who interact with peers who exhibit problem behavior (even young people from balanced families) are at higher risk of these problems themselves.

Community-Risk Factors

CR1 Low Neighbourhood Attachment

Neighborhoods where people have little connection to their neighborhood and exhibit more problems related to drugs, drug trafficking, crime and violence. This situation occurs not only in poor neighborhoods, even wealthier neighborhoods suffer from these problems.

CR2 Community Disorganization

The same applies to areas where the organization of neighbourhood is defective. Disorganized communities with a lack of shared norms, social control and trust have a positive impact on the development of delinquent behaviour as well as on the use of alcohol and drugs.

CR3 Transition and Mobiltiy

Residents of neighborhoods that are characterized by a high degree of mobility show a higher risk of drug and crime problems. The more people move within a district, the greater the risk of both criminal behavior and drug problems within families. Some people defend themselves against the negative effects of mobility by searching clues in new communities. Others can not cope with the consequences of frequent moves and therefore more prone to problems.

CR4 Perceived Availability of Drugs and Weapons

The more drugs are available in a district, the greater the risk of drug use within the district will occur and young people will use drugs. Also, in many studies demonstrated a correlation between availability of firearms and violence.

CR5 Laws and Norms Favourable to Antisocial Behaviour

Young people are at increased risk of problem behaviors as the standards regarding drug use, violence or crime are unclear or even simply missing.

Family-Protective Factors

FP1 Attachment

The adhesion strength of the family is generally seen as a factor that reduces the risk of problem behaviors, which may be thought as to do things together and talking about problems.

FP2 Opportunities for Prosocial Involvement

This factor measures the extent to which young people's attitude in their family are seen as positive or socially

desirable behavior.

FP3 Rewards for Prosocial Involvement

Rewarding of positive or social desired behaviour of youngsters within their family reduces the risk of problem behaviours.

School-Protective Factors

SP1 Opportunities for Prosocial Involvement

This factor measures the extent to which young people within the school experience their opportunities as positive or desirable, such as extracurricular activities or clubs.

SP2 Rewards for Prosocial Involvement

This factor measures the extent to which people are rewarded for positive behavior by their environment, in this case within the school.

Peer-individual-Protective Factors

IP1 Belief in the Moral Order

This factor measures whether the student has clear rules about appropriate behavior.

IP2 Social Skills

Young people with better social skills know better how to deal with new, strange or unpleasant situations.

IP3 Religiosity

This factor measures the degree of religious commitment of the young which in general reduces the likelihood on problem behaviours.

Community-Protective Factors

CP1 Opportunities for Prosocial Involvement

This factor measures the extent to which young people experience their behaviour in their neighborhood as positive or socially desirable, such as participating in activities or clubs in the community center.

CP2 Rewards for Prosocial Involvement

This factor measures the extent to which people are rewarded for positive behavior by their environment, in this case around

Appendix 4

Development of Communities that Care in the Netherlands

Years	National	Local
1997-1999: Setting up	- Youth and Family I&II, reports of prof. dr. J. Junger-Tas. Introduction of the program in the Netherlands - Start workgroup of Ministery of Justice and Health,Welfare&Sport (VWS) - CtC-plan Ministery of Justice and VWS - Development of Program by NIZW and youth survey by DSP-Group	- Interest from Rotterdam - Selection of four pilots to implement CtC
2000-2003: Development phase	- First youth surveys by DSP-Group - Training coaches by CtC-coaches US - Start development of program-materials by NIZW-Youth - Start training and coaching of teams of four communities in the Netherlands	- Four pilots: Rotterdam Oude Noorden, Amsterdam-Noord, Zwolle-Zuid, Arnhem Presikhaaf - First community profiles and plans - First guide effective programs: Promising and Effective. - First evaluation by DSP
2004-2007: Expanding phase	- Second round: money from government for three years - Investment in CtC by Province of Zuid-Holland - Investment in CtC by city of Rotterdam - Four communities in Friesland - CtC on the Netherlands Antilles - Dutch licence owner: NIZW Youth (survey by DSP-Group), collaboration with other institutes	- New communities: Almere Buiten and Leeuwarden - New communities in Zuid Holland: e.g. Maassluis, Dordrecht, Leiden, Alphen a/d Rijn, Capelle a/d Ijssel, Zoetermeer, Gouda, Westland - Also Rotterdam Hoogvliet, Feyenoord, Charlois, Kralingen, Crooswijk, Delftshaven and, at the end, Rotterdam overall - On the five islands of the NA - Evaluation of CtC by Verwey-Jonker Institute
2008-2012: Experimental phase	- Effect research financed by ZonMW and set out by Verwey-Jonker Institute - New interest from other provinces/cities - further collaboration with other CtC-countries (e.g.US, Australia) - support of implementation in Germany - Dutch CtC consortium: NJI (former NIZW Youth), Seinpost and DSP-Group - start European network of CtC (secretary NL)	- five experimental and five control communities within five Dutch cities - Hardewijk and three cities in province of Zeeland - Third evaluation report (for city of Rotterdam and Province of South Holland) by Verwey-Jonker Institute - Report effect research - Thesis 'Some years of Communities that Care. Learning from a social experiment'

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