J Public Health (2006) 14: 20–28
DOI 10.1007/s10389-005-0005-5

ORIGINAL ARTICLE

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Risk behaviour in adolescence: the relationship between developmental and health problems

Received: 1 August 2005 / Accepted: 8 September 2005 / Published online: 15 November 2005

Abstract Current research is beginning to suggest that the descriptive knowledge base of adolescent risk behaviour is not conceptually based and is inadequate to sufficiently inform a comprehensive assessment of adolescent health and risk. The aim of this paper is to contribute towards the knowledge of adolescent risk behaviour. Building on a developmental perspective, links between health risk behaviour and the socialisation process in adolescence are discussed, and developmental functions and characteristics of risk behaviour are thereby investigated in light of a psychosocial stress model. An integrative model of adolescent problem handling is proposed that distinguishes three different forms of risk behaviour: externalisation, internalisation, and evasive risk behaviours. These are further elaborated on the basis of results from the latest World Health Organization Health Behaviour in School-aged Children study. Finally, conclusions for future research and health-promoting strategies are given.

Keywords Adolescence · Developmental problems · Gender · Risk behaviour

Introduction

Adolescence is a period of rapid development when young people acquire new capacities and are faced with many new situations. This period presents not only opportunities for progress but also risks to health and well-being (Irwin et al. 2002). Adolescents are generally thought to be healthy; by the second decade of life, they have survived the diseases of early childhood, and the health problems associated with ageing are still many years away. Yet many adolescents do die prematurely. Preventable risk behaviours such as fighting, substance abuse, reckless driving, and violent behaviour significantly contribute to adolescent morbidity and mortality (Kulbok and Cox 2002). These behaviours threaten the well-being of teens and limit their potential for achieving responsible adulthood (Resnick et al. 1997).

The concept of "risk behaviour" applies to specific forms of inappropriate problem handling. Risk behaviour is understood to be a behaviour with undesirable consequences that go hand in hand with a probability of harm or loss (Cairns and Cairns 1994). Although there is no clear consensus in the literature about the definition or the key elements that are encompassed in the concept of risk behaviour, it is generally agreed upon that such behaviours are those that are directly or indirectly associated with health, well-being, and the healthy development of personality—for instance, substance use, delinquency, unhealthy dietary behaviour, and inadequate psychosocial adjustment. But psychological impairments such as depression, bulimia, and anorexia nervosa can also be considered as risk behaviours (Jessor 1998). These adverse outcomes can have enduring consequences at considerable cost to individuals, families, and the wider community because many health problems of adulthood have their origins in behavioural patterns that are formed during adolescence. Furthermore, adolescence is a time when coping styles begin to consolidate. Habits and lifestyles formed during these years are likely to continue throughout life. In addition, during adolescence and young adulthood, many consequential life decisions are made concerning educational attainment, occupational choices, relationship and family formation, and lifestyle options, making adolescence an important formative period likely to yield long-term benefits of health-promoting efforts.

So far, risk behaviours have mostly been regarded from an adult point of view. Little attention has been given to the possibly positive functions of such behaviours within the social context (Hurrelmann and Lösel 1990; Ciariano 2004). Understanding the functionality of risk-taking is also crucial to the development of intervention programs that offer alternative behaviours that are less health-

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compromising but are capable of fulfilling the same or similar functions as the risk behaviours they are intended to replace.

The aim of this paper is to contribute to the knowledge of adolescent risk behaviour. The fact that risk behaviour starts and/or occurs particularly often in adolescence points to a linkage with the psychosocial development of adolescents. Building on a developmental perspective, we discuss functions and characteristics of (health) risk behaviour. This perspective is consistent with the developmental-contextual framework that emphasises multidimensional and multidirectional developments across the life span (Schulenberg and Maggs 2002). Links between health risk behaviour and adolescent development are explored, and an integrative model of adolescent risk behaviour is presented. This provides a stronger foundation for addressing fundamental questions about the aetiology of risk behaviour and enables a developmentally more sensitive understanding of risk behaviour.

Developmental tasks in adolescence

A modern concept of risk refers not only to biomedical aspects but also to the negative consequences for individual psychosocial adjustment (Jessor 1998; Ciariano 2004). Taking into account that the psychosocial risk has to be conceptualised within a specific period of life with its peculiar developmental tasks, it is important to consider the socialisation process of adolescents. No other part of the life-course is so characterised by changes, transitions, and developmental tasks as adolescence. The fact that almost all risk behaviours show age-specific changes in adolescence draws specific attention to the socialisation process. Generally speaking, this process can be viewed as "successful" when young people manage to cope with a multitude of developmental tasks and transitions and thus combine the requirements of individuation and integration with each other (Havighurst 1952). Adolescents are confronted with the challenge of how to handle rapid changes in their bodies, emotions, and ways of thinking, while simultaneously adjusting to sociocultural requirements and acquiring socioeconomic qualifications (Hurrelmann 2004). If they do not succeed in doing so, or do so only to an insufficient extent, it is possible for their developmental tasks to run into problems that prejudice the further development of their personality and health (Dryfoos 1990; Irwin and Millstein 1992; Elliott 1993).

Problems arise in the course of the individuation and integration processes when, due to inadequate personal or social resources, the abilities and skills expected and called for by the social environment temporarily or permanently fail to materialise in one or more of these areas. In such a case, the options an adolescent has do not match the respectively established institutional or age-related standards. If these discrepancies between social demands and subjective skills cannot be compensated for by appropriate personal or social strategies, it is possible to expect considerable individual stress and strain, which can in turn disturb the further individuation and integration processes (Jessor and Jessor 1977; Schulenberg et al. 1997; Jessor 2001).

Simply a lack of competence or inadequate competence in one of these areas can have a considerable impact on the overall coordination of developmental tasks. For example, failure at school can result in social isolation and rejection by one's friends. A developmental task left unmastered is usually a poor precondition for mastering another; a backlog of problems resulting from multiple, unmastered developmental tasks that clash with each other becomes a load factor. A favourable course is taken, by contrast, when the tasks encountered at school and in the formation of partnerships, organisation of leisure-time activities, and political participation can be lined up by adolescents in a sequence that harmonises with their coping skills (Hurrelmann 1998; Hurrelmann 2000).

The development of coping skills in adolescence

In adolescence, young people develop fixed patterns of coping with their developmental tasks. These patterns have their roots in the personality structure and reflect to a certain extent the "history" of how they have dealt with their internal and external reality so far. A favourable pattern is the active accessing of a problem constellation through the alert perception of one's internal and external reality, i.e. of one's physical, mental, and socioecological surroundings, with subsequent recourse to a flexible but structured reaction. This attitude is open to new impressions and simultaneously permits recourse to proven rules for the classification and evaluation of events (Seiffge-Krenke 1998).

In terms of socialisation theory, the molding of problem-handling skills is a decisive factor in determining whether the problem constellation posed by developmental tasks can be successfully coped with. The individual coping process is thereby influenced by a large array of individual as well as psychosocial risk and protective factors for adolescent risk behaviour (see Fig. 1).

Appropriate coping guarantees that, despite difficult problem constellations, no harm will come to one's physical and psychosocial state, and no symptoms of social deviation will arise. The chances to attain competence skills that are required to cope with developmental tasks and limit the extent of "crises" right from the start are good for those adolescents who have had an active and open-minded attitude from early childhood on. Also, adolescents who develop a great ability to learn have an advantage because they can turn crises and strain into productive challenges that strengthen and stabilise their personality. They have a high ability to organise their personality "on their own."

Inappropriate coping can lead to problem behaviour. Adolescents with inappropriate coping skills are limited to defensive, passive, or evasive reaction strategies in problematic situations engendered by developmental challenges. These adolescents have not adequately developed

strategies to analyse situations, search for information, influence troublesome conditions, change their behaviour, and harmonise their feelings and expectations. Their resources are inadequate for the job of warding off social and health harms. Their self-organisation skill is low (Silbereisen and Todt 1994)

Inappropriate coping makes it impossible to effectively deal with problem constellations arising from developmental tasks (for instance, premature or delayed sexual maturity, persistent failure in school, and rejection by peers) and from related crises in the individuation and integration process. It is possible that a situation arises in which excessive temporary or permanent demands are made on the ability to act. This is then reflected in an abnormal and unhealthy development with various symptoms of disorders. The discrepancy between developmental demands on the one hand and coping skills on the other results in "unfit" solutions that, in terms of the way they are manifested and their consequences for the social environment, are unacceptable and unproductive for the development of a person's personality and health. Hereby the unfit solutions can take various forms of problem and risk behaviour (Steptoe et al. 1994).

The relationship between developmental and health problems

Developmental transitions and risk behaviour are closely linked during adolescence. Over the past several decades, important changes in the nature of developmental transitions during adolescence have taken place. These changes may have increased the possibility of accompanying health risks (Dryfoos 1990). In particular, the timing and patterns of developmental transitions associated with the transformation from childhood to adulthood have become more diverse and thus less certain. For example, several important social changes have made the transition to adulthood more variable and potentially more difficult. These include changes in the order, timing, and patterns of interpersonal relationships (e.g. cohabitation, parenthood); increased duration of vocational training; difficulty entering uncertain labour markets; and increased pluralism of societal norms and values (Hurrelmann 1984). At the same time, however, it is essential to recognise that the increased diversity in the timing and patterns of developmental transitions may well contribute to more fulfilling options and thus serve to promote health and well-being.

In most of the theoretical models, developmental transitions are viewed as temporary and even as causally preceding risk behaviour (Schulenberg et al. 1997; Schulenberg and Maggs 2002). This behaviour is considered to be a result of experiencing developmental transitions. To the extent that developmental transitions contribute to stress that exceeds current coping capabilities, health and well-being are likely to suffer, and risk behaviours may be used as an alternative way of coping. One developmental transition rarely contributes to stress, and in many cases, coping capacities are not overwhelmed, and health is not adversely affected. Nevertheless, given the major and multiple transitions that occur during adolescence, existing coping strategies may have difficulty in keeping up with the developmental stress. This is consistent with Coleman's focal theory (Coleman 1978), which states that decrements in well-being during adolescence result not from hormone-induced storm and stress, but instead from the multiple and simultaneous transitions that occur in a relatively short period of time. Thus, if it were possible to distribute the transitions more evenly over time, decrements in well-being would be less likely to occur. In other words, adolescent risk behaviour can be seen as the result of a long-lasting and, for the life-phase characteristically, overwhelming psychosocial level of stress linked with inadequate coping capacities. It can also be seen as a reaction to existential threats, as well as an orientation crisis and behavioural insecurity (Raithel 1999).

Risk behaviour in adolescence can as well be viewed as an important component of negotiating a developmental transition. The idea that a certain amount of adolescent and young adult risk taking is normative is supported by the high prevalence rates and the evidence that it often

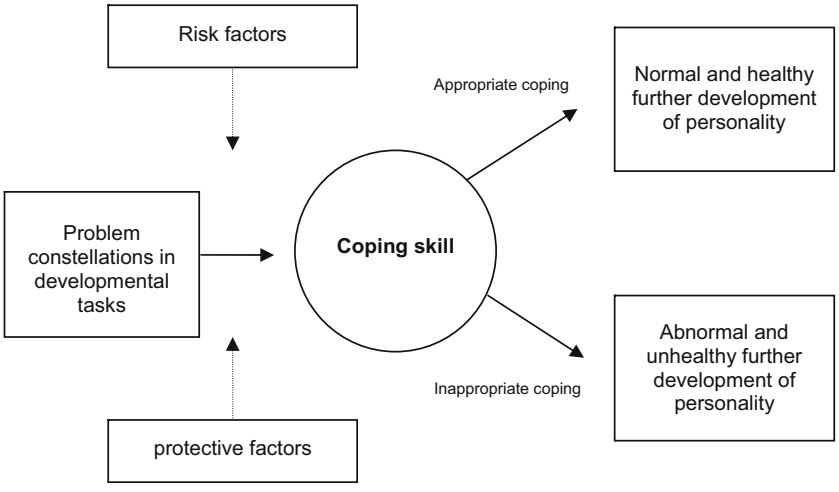

Fig. 1 Developmental tasks and appropriate or inappropriate ways of coping with them

accompanies healthy personality development (Silbereisen et al. 1986). Risk taking and even deviance can have a constructive as well as destructive function in adolescents' health and development (Jessor and Jessor 1977). For example, on one hand, risk taking appears to be an important aspect in negotiating greater autonomy from parents (Irwin and Millstein 1992). On the other hand, such autonomy-seeking behaviour could be detrimental to one's health, such as if it leads to noncompliance with behavioural regimes necessary to manage chronic illnesses. In the next section we take a closer look at these different functions of risk behaviour in adolescence.

Functions of risk behaviour

For adolescents, risk behaviour can fulfil important social functions and be an essential part of their psychosocial development. The main instrumental function of risk behaviour lies in "mastering" the developmental tasks and other challenges. This function is actively employed by young people to meet the specific demands of their phase of life and is considered to be an attempt to confront life's everyday problems and challenges. According to this approach, risk behaviour may assist in or be a fundamental part of negotiating certain developmental tasks. Therefore, risk behaviours can be understood as a manifestation of developmentally appropriate experimentation (Engels and Bogt 2001).

Taking substance use as an example, Fig. 2 shows how risk behaviour can be linked to a wealth of instrumental and expressive functions (Silbereisen and Noack 1988; Raithel 1999), including facilitation of *acceptance by* and *integration* in a clique, *stabilisation of* an acquired social position, and also as an expression of *identification* with the adolescent subculture. Substance use can also been seen as a *symbol of opposition* to demonstrate a break with and resistance to conventional norms and parental/societal value notions. As an excessive pattern, risky behaviour enables one to experience and try out *individual degrees of freedom* (feeling of independence) and to gain control over situations and oneself. It also serves as a *counterpoint* to the routine of normal life. One indulges in risk behaviour for the pleasure of experimentation. In addition, risk behaviours like substance use can be seen as a *relief-providing, compensatory, or surrogate act* aimed at coping with a lack of status, developmental problems, frustrations, failures, or real and anticipated fears. Risky practices likewise help the individual *flee* from the fate of having to become an adult, and thus reasonable.

Several empirical studies have found support for the social function of risk behaviour. The results indicate, for example, that people who are actively involved in risky behaviour are also more involved in relationships with friends and intimate partners (Silbereisen et al. 1986). Tobacco and alcohol use as well as the consumption of illegal drugs, which from a public health perspective are crucial determinants of current and future health, are actively used by adolescents in order to encounter specific requirements of this life span and are used to cope with daily life problems and challenges. What in the eye of adults and researchers is seen as an undesirable behaviour is seen from the perspective of adolescents as a way of coping with developmental problems. Therefore, risk behaviour should not always be evaluated negatively (Janin Jacquat et al. 2001). It is always important to keep in mind that the learning process for a responsible handling of psychoactive drugs can have an adaptive function in the

Fig. 2 Developmental tasks and functions of substance use (Silbereisen and Noack 1988)

Developmental tasks	Functions of substance use
Knowing who one is and what one wants; identity	▪ expression of personal style ▪ search for limit-breaking, consciousness-expanding experience and adventures
Development of friendships; establishment of intimate relationships	▪ easier access to peer groups ▪ excessive/ritualized behavior ▪ establishment of contacts with peers of the opposite sex
Becoming independent / separation from parents	▪ demonstrating independence from parents ▪ conscious violation of parental controls
Shaping/planning life	▪ sharing in subculture lifestyles ▪ having fun and enjoying
Developing one's own system of values	▪ intentional violation of standards ▪ expression of social protest
Developmental problems	▪ surrogate goals ▪ regulation of stress and emotions

adolescent development. The use of legal and/or illegal substances is mainly dangerous if it occurs very early in life or in combination with other risk behaviours and when it becomes an instrumental practice that leads to an early restriction of behavioural patterns during developmental problems and tasks.

Integrative model of risk behaviour

We now turn away from looking at only one single risk behaviour such as substance use and take a closer look at the whole range of health risk behaviours. As already indicated, inadequate coping processes can result in different risk behaviours. Nevertheless, some of these variations seem to cluster on very similar dimensions, which can be described as *externalising*, *internalising*, or *evasive* forms of risk behaviour (see Fig. 3). So far, empirical research concentrated only on externalising and internalising forms of risk behaviour or coping styles (e.g. Achenbach 1982; Döpfner et al. 1997; Crijnen et al. 1997). For further research, it will be helpful to further subdivide the consequences entailed by inappropriate forms of coping with problem constellations.

The pressure exerted by the problems confronting youth can be directed outward, towards the social environment of the family, school, workplace, circle of friends, and the public (*externalising variant*). Regarding the externalised variant, the unpleasant consequences of badly damaged self-esteem are, to a certain extent, shifted to the outside world. This is due to the fact that one is incapable or unwilling to confront them with the core of one's personality. In the social realm, that includes social and political protest, participation in illegal groupings, antisocial behaviour, criminal behaviour and violence. In terms of health, aggression towards other people is a symptom of inadequate skills to cope with problem constellations.

The pressure exerted by problems can also be directed inward to one's psyche and body (*internalising variant*). In the social realm, this variant is expressed by withdrawal and isolation, a lack of interest in public events, and a lack of engagement; in terms of health it can manifest itself in psychosomatic disorders and depressive moods, including suicide attempts. These forms of behaviour are a symptom for a lack of coping skills. The adolescent reacts with helplessness because he/she sees himself/herself as responsible, but lacks the knowledge needed to find a solution.

The handling of problems can take a third direction that is neither outward nor inward (*evasive variant*). This "getting out of the way" is expressed in the social realm by nonconformist types of behaviour and fickle, capricious social relationship patterns. In terms of health-related consequences, it often appears as addictive behaviour, such as the use of legal and illegal drugs, eating disorders, compulsive consumption, or gambling. These types of behaviour are a combination of inwardly and outwardly-oriented variants. They have aggressive and autoaggressive features and are symptomatic of fleeing from and evading arduous "work on oneself" as well as "work on one's situation in life" that could point to a way out of the problem constellation.

In terms of their subjective logic, all three variants represent a respectively conclusive and psychosocially plausible solution to stress and problem constellations. In each case, however, this "solution" is only a pseudo solution because the actual initial problems and their causes are not treated with rigor. Instead of confronting the unpleasant, difficult, and painful work on one's personality, one evades it, blames the others, or withdraws into isolation. In the long run, this mechanism results in negative dynamics for all further development of one's personality.

Examples from the HBSC study

In order to take a closer look at the three different forms of inappropriate problem behaviour (i.e. risk behaviour), some data from the latest World Health Organization Health Behaviour in School-aged Children (HBSC) study is presented in the following section. The aim of the HBSC

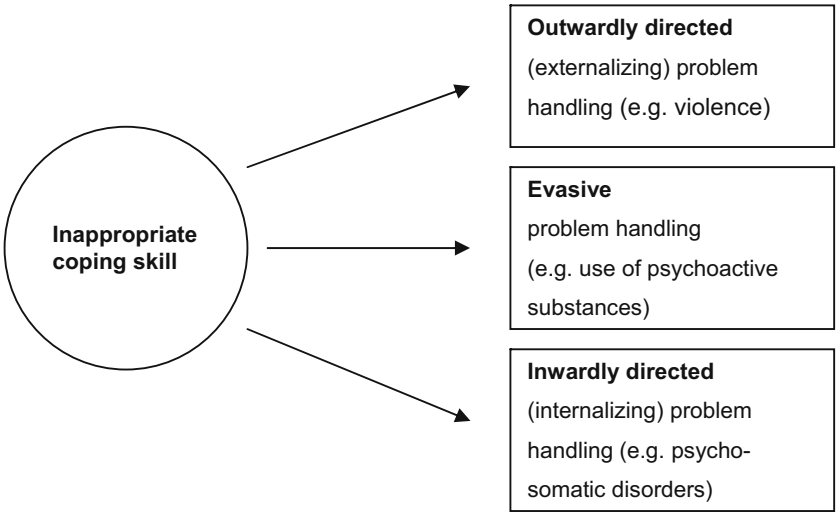

Fig. 3 Forms taken by the consequences of inappropriate coping

study is to describe young people's health and health behaviour and to analyse how these outcomes are related to the social context. Cross-sectional surveys of 11-, 13-, and 15-year-old children and adolescents are carried out every 4 years in a growing number of countries based on an internationally agreed-upon protocol (Currie et al. 2001). The latest survey, in 2001/2002, included a total of 35 countries from Europe and North America. The results were taken from the international report of the study, which was published by WHO (Currie et al. 2004). The first author of this paper is the Principal Investigator for Germany. Three aspects of risk behaviour are chosen that represent the different forms of problem handling: bullying, psychosomatic complaints, and drunkenness. Each of these represents crucial threats to health. The main focus of the presentation is the question of whether the proposed classification of risk behaviour is uniform across genders and countries or if systematic patterns can be identified.

Outwardly directed problem handling: bullying

Bullying and fighting depict different types of involvement in violence during adolescence (Craig and Harrel 2004). Bullying has negative outcomes for those who bully as well as for the victims. Childhood bullying is associated with antisocial behaviour in adulthood, such as criminality, and also with limited opportunities to attain socially desired objectives, such as stable employment and long-term relationships. On the other hand, victimised children are at risk of a variety of negative outcomes, too. Figure 4 shows 15-year-olds who bully others at least two or three times a month; 13% of all students reported that they had bullied someone else at least two to three times a month during the previous couple of months. However, this overall percentage masks significant variation between countries. The rates range across countries from 3% to 41%. The following countries are in the top quartile for perpetrating bullying: Lithuania, Austria, Latvia, Ukraine, Estonia, Switzerland, and Germany. Countries in the lowest quartile are Scotland, Slovenia, Ireland, Macedonia, Wales, Czech Republic, and Sweden. Across all countries, boys reported having bullied others significantly more often than girls. Even though the gender difference is more marked in some countries than in others, the stability of this pattern is striking. This finding does not indicate that boys are more aggressive than girls, but rather that they are more likely to engage in this form of aggression.

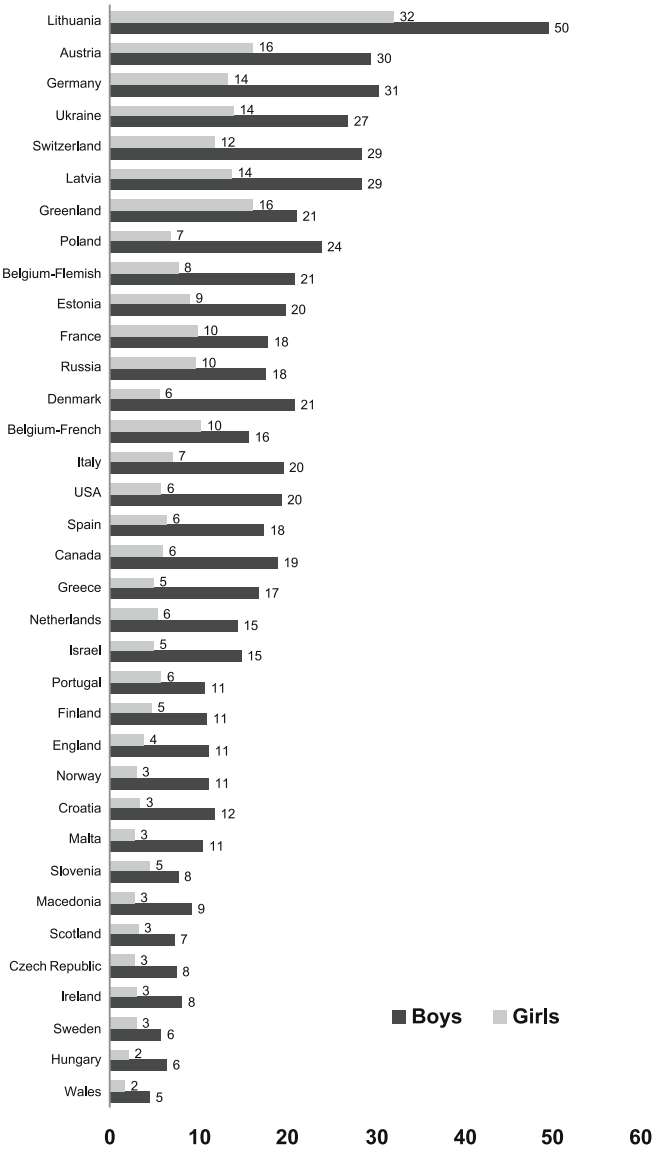

Fig. 4 15-year-olds in Europe and North America reporting having bullied others at school two to three times a month in the previous couple of months (%) (Craig and Harrel 2004)

Inwardly directed problem handling: psychosomatic complaints

Figure 5 shows the percentage of 15-year-olds reporting multiple subjective health complaints by country. This measure represents a significantly heavier burden on daily functional ability and well-being than single symptoms. Such impairments have been associated with lower academic performance, increased demand for primary care services, and increased use of medicine (Torsheim et al. 2004). It can be seen that the percentage of students with multiple subjective health complaints differs substantially across countries. The proportion of young people with multiple subjective health complaints is consistently higher in Italy, Israel, and Greece. In contrast, the proportion is lower among students from Germany, Austria, and Switzerland. In all countries girls reported subjective health complaints more often than boys. In most countries, the gender differences increased with age (results not shown). The gender differences were remarkably high in the Baltic countries and in some southern European countries (Croatia, Greece, Italy, Portugal, and Spain).

Evasive problem handling: drunkenness

Adverse health outcomes from alcohol use are common among young people, and many alcohol-related causes of death occur relatively early in life (Schmid and Nic Gabhain 2004). In addition, social consequences are also linked to heavy drinking, such as missing school classes, getting behind in school work, unplanned and unprotected sexual activities, arguments with friends, damaging of property, rape victimisation, and trouble with police. As Fig. 6 illustrates, the highest rates of drunkenness among 15-year-olds were observed in Denmark, Wales, Greenland, and England (with rates of above 50%). The lowest rates for repeated drunkenness were found for the southern European countries, for instance Italy, France, and Spain. Across all countries, boys are more likely than girls to report having been drunk two or more times (39.8% of boys vs. 31.4% of girls). This pattern is observed for almost all countries. Exceptions are Spain, Finland, and Wales. The largest gender differences were found in the Eastern European countries.

The selected results from the HBSC study show that in all countries, strategies and results of coping behaviour differ between genders in qualitative as well as in quantitative ways. The whole range of risk behaviour's qualitative aspects constitutes different areas of risk. Therein general gender-specific tendencies are reflected because a gender typology of risk behaviour is developed in puberty: Due to the gender-specific socialisation processes, girls cope with developmental tasks and transitions in a much more internalising way than boys do, and they also react directly with health-related psychosocial impairments. In all HBSC countries, boys prefer to use externalising and/or evasive forms of inappropriate coping behaviour. Apparently, male

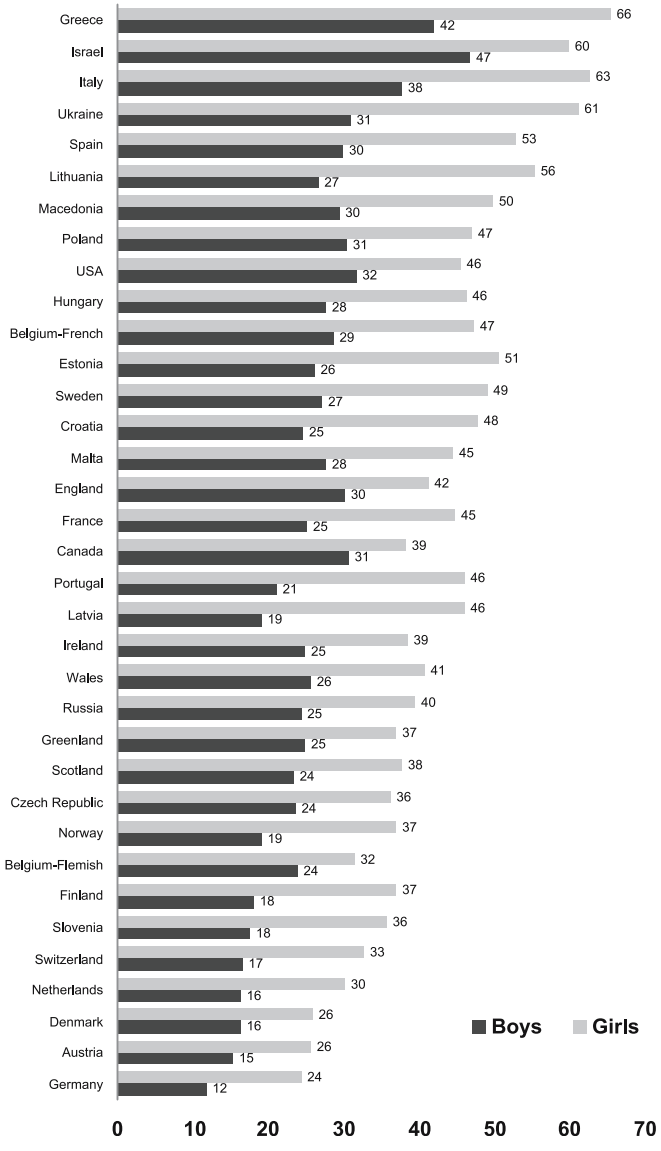

Fig. 5 15-year-olds in Europe and North America reporting two or more symptoms more than once a week (%, Torsheim et al. 2004)

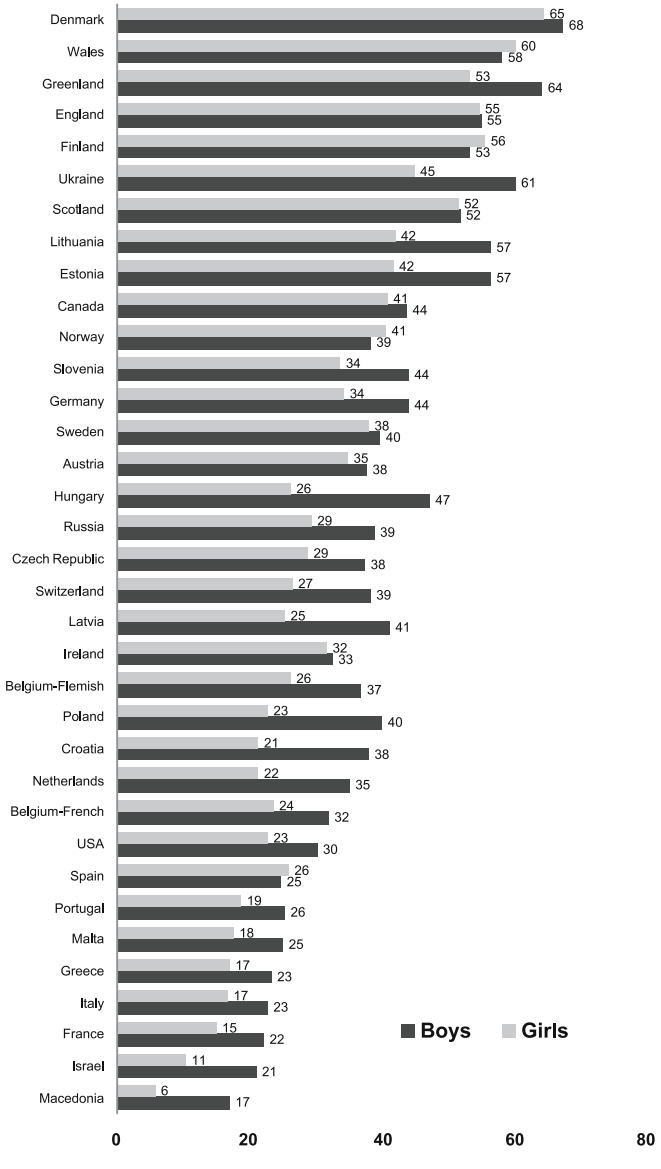

Fig. 6 15-year-olds in Europe and North America reporting having been drunk two or more times (%) (Schmid and Nic Gabhain 2004)

and female risk behaviour follows different logics (i.e. gender-specific functions in the developmental process). Females deal with their environment in a more passive way, whereas boys actively acquire their environment (Hagemann-White 1984; Kolip 1997).

Developmental transition of adolescence: health promotion implications

The passage toward adult roles, relationships, and responsibilities involves fundamental changes in every domain of life. Experiences and decisions during the adolescent years have the potential to build character and competence, develop skills for coping with life's challenges, and enhance health and well-being. At the same time, however, normative and nonnormative developmental transitions expose adolescents to many challenges and hazards that may jeopardise their optimal development and health.

Clearly, it is not subjectively attractive or rewarding to behave in an objectively healthy way in every situation. In adolescence, as in adulthood, behaviours that compromise well-being are an integral and pleasurable part of personal lifestyles. Risky behaviours such as smoking, drinking, and sexual activity can serve as tools for coping with the developmental tasks that arise in adolescence. They fulfil certain essential functions for adolescents, such as exploring one's identity, coping with stress, gaining admission to or acceptance by certain peer groups, opposing adult authority, or indicating a transition to a more mature status (Hurrelmann 1990; Irwin and Millstein 1992; Rutter 1995). One risk behaviour can take on different functions, and in turn, different risk behaviours can have the same function. The fact that risk behaviour fulfils such functions is one of the reasons that preventive and health promoting actions in this area are not only hard to develop but also rarely achieve success.

Although most adolescents negotiate this period of life transition with relatively major disruption or sustained high-risk behaviours (Moffitt 1993), those young people who experience major disruptions and who persistently engage in major problem behaviours are in trouble and have a significant greater chance of being in trouble later in life (Arnett 1999). Therefore, successful interventions with these young people are likely to have important pay-offs in terms preventing future health problems and promoting satisfaction and productive futures. The goal of health promotion, therefore, is to support and enhance an optimal development (Millstein et al. 1993).

Nevertheless, the question of which and how "functional equivalents" of risk behaviour can be offered to adolescents is still unanswered. The development of preventive programs in this area is difficult because an adolescent's health horizon is mainly focused on current well-being and less so on later health-related consequences. From the developmental perspective taken in this paper, health promotion should involve attempts to support, alter, or redirect developmental processes that are already in motion. The goal is not only to alter current attitudes and behaviours but also to have an enduring impact on developmental trajectories. Preventive strategies must support adolescents in coping with the developmental tasks and problems so that risk behaviour as a solution becomes abundant. This includes not only support in building up self-knowledge and self-confidence but also support in the development of skills to cope with stress and to solve problems. The term "developmental intervention" has been used to describe such efforts, which may target any aspect of an individual (biochemical, cognitive, social) or their environments and may take place at any point, or across several points, during the life span.

Health-promoting strategies should contain two content components: First, it is important to have a *general component* in order to ensure a continuous and long-term promotion of an adolescent's psychosocial competence that supports the handling and coping of developmental tasks and problems. Second, the strategies must contain a *specific component* that differs according to the specific risk behaviour. The suggested classification of adolescent risk behaviour into the three forms of externalising, internalising, and evasive behaviours as well as the coherent gender difference enables better identification of what these specific areas of risk are and what groups must be addressed. The knowledge of gender-specific variations in health risk behaviour and of the determinants of these behaviours is especially of crucial importance for developing target-oriented preventive and health-promoting efforts.

In the development of preventive actions, gender aspects play only a small role. For effective and efficient preventive actions, it is crucial to develop and strengthen gender-oriented strategies. Well-tested programs aimed at strengthening "life skills" need to develop more gender-specific approaches that differ for the different forms of expressions and tasks of both girls and boys. In the conception and development of preventive actions, it must be considered whether it is important to target boys and girls separately. First, it is important to evaluate whether gender-specific stress and tasks lead to specific risk behaviours. Subsequently it can be decided whether the intervening action can use gender-specific interests and responses and whether the different resources of both genders can be used successfully. Taking this into account, it appears that for some problem behaviours, a joint intervention for both boys and girls may be the most effective. For other problems, though, it may be quite useful to establish separate groups for boys and girls.

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