Externalizing and internalizing problems at school as signs of health-damaging behaviour and incipient marginalization

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SUMMARY

This study aimed to investigate whether behavioural or emotional problems in adolescents detected by their teachers are signs of a common psychosocial maladjustment and of the beginning of social marginalization. Altogether, 171 pupils (15 years of age) from the eastern part of Finland participated in the survey. Behavioural and emotional problems and academic achievements were assessed separately by two teachers. Pupils filled in a questionnaire about alcohol use, smoking, physical exercise and fitness, self-rated health, psychosomatic symptoms, social relationships and future educational plans. Results showed that poor success at school and the absence of or limited educational plans were associated with both externalizing and internalizing problems. Externalizing problems were associated with health-damaging behaviour and with bullying others. Internalizing problems were associated with poor perceived health and a low level of exercise, with mental symptoms, and with problems in social relationships. Thus, the pupils in both problem groups had a clustering of different risk factors. We conclude that the accumulation in adolescents of self-reported health-damaging behaviour, problems related to school, to future educational plans and to social relationships are already obvious in pupils with externalizing and/or internalizing problems detected by their teachers at the age of 15 years. The capacity of teachers to identify pupils at risk as early as possible should therefore be utilized. The development of a vicious circle might be prevented through early intervention at school, by offering pupils guidance, counselling and treatment.

Key words: adolescence; behavioural problems; health habits; marginalization

INTRODUCTION

Adolescence is a transitional stage of human development, during which the individual undergoes marked physiological, psychological and social change, sets his/her vocational and educational goals and adopts his/her health habits. During this period the first signs of developmental problems may appear and many mental disorders may also have their onset (McGee et al., 1995; Escobedo et al., 1997). Teacher-reported problem behaviours in children have shown persistence over time, especially in girls (Verhulst and van der Ende, 1991a). It has also been found that teachers’ assessments of problem behaviour in their pupils made the next highest contribution after the parent and child interview to the judgement by clinicians of the severity of psychopathology (Verhulst and van der Ende, 1991b).

Many studies have shown that a health-compromising lifestyle and unspecific mental and
Somatic symptoms are the first indicators of problems in both psychological and social development among adolescents (Steptoe et al., 1997; Koivusilta et al., 1998; Karvonen et al., 1999). Adolescents suffering from mental problems, e.g. major depression, eating disorders and behavioural problems, more commonly have harmful lifestyles such as the consumption of intoxicants and smoking, physical inactivity or an unbalanced diet (Fergusson et al., 1996; Neumark-Sztainer et al., 1997). Heavy drinking is associated with severe psychosocial dysfunction, for instance psychosomatic symptoms, a negative social self-image, externalizing and school problems. The association is stronger among girls than boys (Laukkanen et al., 2001).

School is society in miniature where the pupils practice different skills for adulthood. Psychosocial maladjustment in school, i.e. to bully or be a victim of bullying, has a strong tendency to persist for years and in new contexts (Salmivalli et al., 1998). The meta-analysis of the association of peer victimization with psychosocial maladjustment shows that victims are more anxious, depressive and lonely, and their self-esteem is more negative compared with other pupils (Hawker and Boulton, 2000). Both bullies and victims have severe emotional and behavioural problems (Sourander et al., 2000) and both exhibit suicidal ideation (Kaltiala-Heino et al., 1999).

Developmental problems, a lack of learning skills and poor success in school work may marginalize a child or young person to such an extent that she/he has difficulty in progressing in life. Dropping out of studies has often been seen as related to educational or social exclusion, or exclusion from the labour market (Caspi et al., 1998; Taskinen, 2001).

The aim of this study was to investigate whether behavioural and emotional problems in adolescents detected by their teachers are signs of a common psychosocial maladjustment and of the beginning of social marginalization.

**METHODS**

**Study subjects**

This is part of a follow-up study dealing with children’s health, behaviour, life-events and life situation. All the adolescents living in a community in the eastern part of Finland born in 1981 (n = 111) and 1982 (n = 114) were asked to participate in the study in the calendar year in which they reached the age of 15 years. The parents of 32 adolescents did not permit their children to participate in the study at all or did not want to answer the questionnaires, and those of a further 15 adolescents did not respond to the letter seeking permission. Seven questionnaires were rejected due to missing data. The results reported here are therefore based on data from 171 adolescents: 84 girls and 87 boys. At the age of 12 years, the non-participant pupils did not differ from other children according to their teachers’ assessments.

The study was approved by the Ethical Committee of Kuopio University Hospital and the University of Kuopio.

**Teachers**

The Finnish language teacher and the homeroom teacher independently assessed the emotional and behavioural problems of the pupils using a rating scale adapted from Rutter (Rutter, 1967) in which scores ranged from 0 (problems never seen) to 3 (very often seen). This data was then analysed by principal component analysis. In this study we concentrated on externalizing problems (nine items describing disobedience, a poor ability to concentrate and aggressiveness) and internalizing problems (seven items describing loneliness, unhappiness, fear and anxiety). Subscale scores were obtained by summing the scores for items relating to each factor. The α values for the assessment of externalizing problems by the two teachers were 0.87 and 0.90, while for internalizing problems the α value was 0.84 for both teachers. Because the assessments of the two teachers correlated moderately well (r = 0.79 for externalizing problems, r = 0.60 for internalizing problems), the mean of their scores was used in subsequent analysis.

School academic achievements of each pupil in relation to the class average were assessed by two teachers, the Finnish language teacher and the homeroom teacher. The assessments of these teachers correlated well (r = 0.75) and the mean of these assessments was therefore used in the analysis.

The pupils with the greatest internalizing and externalizing problems were those lying above the 85th percentile (the cut-off score for internalizing problems was 7.5, range 0–15, and for externalizing problems 7.0, range 0–17). Six pupils had high scores in relation to both categories of problems. They were allocated according to...
their highest relative score. Three groups were thus formed: (i) the internalizing problems group (nine boys, 16 girls); (ii) the externalizing problems group (15 boys, seven girls); and (iii) the group consisting of all pupils beneath the 85th percentile (63 boys, 61 girls), called the reference group. Externalizing problems were more common among boys, while internalizing problems were more common among girls ($\chi^2$ test; $p = 0.06$).

Pupils

The frequency of exercise was quantified using a six-point scale (1 = daily, 2 = 4–6 times/week, 3 = 2–3 times/week, 4 = weekly, 5 = monthly, 6 = less than monthly), and physical fitness and self-rated health using a four-point scale [from 1 (very good) to 4 (poor)]. Smoking was categorized using a four-point scale (1 = daily, 2 = weekly, 3 = less than weekly, 4 = do not smoke). Alcohol consumption was assessed using two questions relating to the frequency of alcohol consumption and the intention of becoming drunk. Three groups of alcohol users were formed (1 = do not consume alcohol or have only experimented with it, 2 = consume alcohol occasionally or until slightly drunk, and 3 = consume alcohol several times a month until slightly drunk or consume alcohol until very drunk).

The number of friends was quantified using a three-point scale (1 = none, 2 = one, 3 = many) and the frequency of social contact with friends using a four-point scale (1 = daily, 2 = many times/week, 3 = 1–2 times/week, 4 = <1/week). The pupils also answered questions about their attitudes towards school attendance [from 1 (I very much like to go to school) to 4 (I go to school reluctantly)] and how often they were bullied or bullied others [1 = several times/week, 2 = about once/week, 3 = about once/month, 4 = less than monthly or never].

The frequency of mental and psychosomatic symptoms was determined with a 14-item questionnaire providing a five-choice scale for each question (1 = less than once/month, 2 = once/month, 3 = once/week, 4 = many times/week, 5 = almost daily) (Välimaa et al., 1995). Two separate sum scores were obtained by summing the items relating to each of the two dimensions and after that by dividing the sum by the number of items. The sum scores related to mental symptoms (feelings of depression, melancholy, irritability, nervousness, strain, fatigue, sleeping difficulties and waking up at night) and psychosomatic symptoms (dizziness, lack of appetite, headaches, stomach ache, neck ache, back ache). The reliability of the scales was good; Cronbach’s alpha ($\alpha$) for mental symptoms was 0.89 and for psychosomatic symptoms, 0.71.

Four cumulative risk scores and a total risk score were calculated. Variables used in these scores were first dichotomized (health-risking behaviour occurs = 1, or does not = 0). The following sum scores were formed (those categories that contribute to the risk score are in parentheses):

- health-damaging behaviour (physical exercise less than once a week, drinking alcohol moderately/heavily, smoking);
- self-rated poor health [self-rated health poor, self-rated physical fitness poor, mental symptoms score $\geq 85$th percentile (cut-off score 3.0, range 1.0–3.4) and psychosomatic symptoms score $\geq 85$th percentile (cut-off score 2.5, range 1.0–4.2)];
- problems related to social relationships ($\leq 1$ friends, meeting friends in spare time $\leq 1$–2 times/week, being bullied $\geq 1$/week and bullying others $\geq 1$/week); and
- problems related to school and to future educational plans (does not like to go to school, success at school is less than the mean of the class, and no plans for future education).

The total risk score was formed by summing the above-mentioned four risk scores.

**Statistical methods**

The data were analysed using SPSS. Differences between the groups were tested by one-way ANOVA for continuous variables and the $\chi^2$ test or Fisher’s exact probability test was used for categorical variables. The multiple comparisons were made with Scheffe’s post hoc test. If the variables to be tested in relation to problem behaviour were not normally distributed (as determined by the Shapiro–Wilk test), the non-parametric Kruskal–Wallis test was used and the pairwise comparisons between the groups were performed using the Mann–Whitney U-test and Bonferroni’s adjustment.

**RESULTS**

**Health habits**

Adolescents in the internalizing problems group exercised significantly less often than the others
(Table 1). Pupils in the externalizing problems group (64%) smoked more commonly than those in other groups. Fifty-nine per cent of the pupils with externalizing problems drank alcohol to a heavy or moderate extent. Heavy drinking was twice as common among adolescents with internalizing (21%) and externalizing problems (23%) as in adolescents from the reference group (11%).

**Self-rated health, physical fitness and mental symptoms**

Adolescents with internalizing problems had a poorer level of self-rated health and physical fitness than the others (Table 1). They also experienced mental symptoms more often than the reference group. No significant difference was found in psychosomatic symptoms between the groups.

**Social relationships**

Adolescents with internalizing problems had fewer friends and met them less often in their spare time than the others. Almost one in three adolescents with internalizing problems reported that they had been bullied at school, while 18% of adolescents with externalizing problems reported that they had participated in bullying others at least once a week (Table 1).
School attendance

The academic achievements of adolescents with either externalizing or internalizing problems were poorer than those of the reference group ($p \leq 0.001$) (Table 1). Approximately half of the pupils with internalizing problems did not like to go to school compared with one-third of the others. Adolescents in the reference group more frequently had plans for their future education and aimed at higher levels of education than those with problems.

Accumulation of risks

Pupils in the externalizing and internalizing groups had a clear accumulation of problems of all kinds compared with the reference group (Table 2). Pupils with internalizing problems had the highest total risk scores. They had more problems in all areas studied, e.g. health behaviour, perceived health, social relationships and difficulties related to school and future education, than the reference group. Pupils in the externalizing problem group had more problems related to school and future education, and behaved more often in a health-damaging way than pupils in the reference group.

The only significant differences in risk scores between the boys and girls were in the reference group; the social problems score was higher for girls (mean = 0.7, SD = 0.8) than boys (mean = 0.4, SD = 0.7; $p = 0.01$), and boys had more problems in relation to academic achievements and future educational plans than girls (mean = 0.7, SD = 0.9 versus mean = 0.4, SD = 0.6; $p = 0.02$).

DISCUSSION

The aim was to investigate whether behavioural and emotional problems in adolescents detected by their teachers are signs of a common psychosocial maladjustment and of the start of social marginalization. Our study shows that pupils who were assessed by their teachers as having externalizing or internalizing problems also had a clustering of various risk factors for future mental and physical health and social marginalization. These results are in accordance with earlier studies in which associations have been found between developmental problems during adolescence and a health-compromising lifestyle (Fergusson et al., 1996; Kandel et al., 1997). On the other hand, a health-compromising lifestyle has been shown to be associated with a relatively low level of education (Koivusilta et al., 1998; Karvonen et al., 1999).

In our study, subjects were representative of adolescents in a semi-rural area of Finland and comprised 79% of their age cohort in the area. The occurrence of behavioural and emotional problems in pupils was determined on the basis of assessments by two teachers, which increased the reliability of these assessments. Behavioural and emotional problems in pupils detected by their teachers have been shown to be associated with both existing and future mental difficulties (Boyle et al., 1993). The problems detected by an adult are, however, dependent on the role she/he plays in the life of a child or adolescent (Achenbach et al., 1987; Verhulst et al., 1994). It must also be taken into account that many problems of adolescents, particularly internalizing

### Table 2: Risk scores [mean (SD)] for health-damaging behaviour, self-rated poor health, social and school problems in relation to internalizing and externalizing problems

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>Group</th>
<th>Statistical significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reference group ($n = 124$)</td>
<td>Internalizing problems ($n = 25$)</td>
</tr>
<tr>
<td>Health-damaging behaviour</td>
<td>0.7 (0.9)</td>
<td>1.1 (1.0)</td>
</tr>
<tr>
<td>Self-rated poor health</td>
<td>0.3 (0.6)</td>
<td>0.7 (0.9)</td>
</tr>
<tr>
<td>Problems related to social relationships</td>
<td>0.5 (0.7)</td>
<td>1.4 (0.8)</td>
</tr>
<tr>
<td>Problems related to school and to future educational plans</td>
<td>0.6 (0.8)</td>
<td>1.2 (1.0)</td>
</tr>
</tbody>
</table>
| Sum of all scores                        | 1.9 (1.5)                    | 4.1 (1.7)                | 3.4 (2.1) | $p^b < 0.001$  
                                                      |                              |                          | $p^a < 0.01$ |

*aExternalizing problems group versus reference group (Mann–Whitney test with Bonferonni’s adjustment).
*bInternalizing problems group versus reference group (Mann–Whitney test with Bonferonni’s adjustment).
*cInternalizing problems group versus externalizing problems group (Mann–Whitney test with Bonferonni’s adjustment).
problems, go undetected even by their parents (McGee et al., 1995). Our decision to restrict assessment to that by teachers is, however, consistent with our aim of evaluating the ability of teachers to identify pupils with problems. In addition, because the relatively small number of subjects reduced the statistical power in our study, the results can be considered conservative.

In placing pupils into problem groups, we took the 85th percentiles as the cut-off points for both internalizing and externalizing problems. This cut-off point has also been used in earlier studies (Verhulst and van der Ende, 1995). The groups with externalizing and internalizing problems comprised 28% of the adolescents in our study, which could be a slight overestimate (McGee et al., 1995). It is also worth noting that the dichotomy used here (externalizing/internalizing problems) is too simplistic to describe the many problems of adolescents, but these two broad groups of syndromes are the ones most often used in other studies (Achenbach et al., 1987; Verhulst and van der Ende, 1995). However, because our results are based on questionnaires concerning symptoms, it is not possible to say whether those pupils in whom teachers detected problems have any psychiatric disorders.

Both the externalizing and the internalizing group differed significantly from the other adolescents with respect to their poor academic achievement at school and the absence of future educational plans. A lack of education limits an individual’s opportunities radically and quite categorically. It is the highest threshold on the labour market and there is the risk of becoming completely marginalized in the labour market (Rinne and Kivirauma, 1999). There were also differences between externalizing and internalizing problem groups. Health-compromising behaviour was especially frequent among pupils with externalizing problems. They smoked significantly more often and consumed alcohol more frequently than the other adolescents. Their smoking and consumption of large quantities of alcohol were twice as common as in Finnish adolescents of the same age in general (Pohjanpää et al., 1997). It has also been shown earlier that smoking is associated with the abuse of intoxicants and with behavioural and depressive disorders (Brown et al., 1996; Fergusson et al., 1996). Furthermore, psychosocial dysfunction is found to be more common among heavy drinking adolescents, especially girls, than abstainers or moderate drinkers (Laukkanen et al., 2001).

Even though adolescents with externalizing problems reported that they had many friends, 20% of them bullied others at school. Adolescents with internalizing problems had less frequent social contact with their peers than the others and almost one in three was bullied every week at school. It has been found that aggressive behaviour towards others is associated with both narcissistic and antisocial personality characteristics and other types of health-damaging behaviour (Salmivalli et al., 1999). An earlier study also found that depression and suicidal ideation are equally likely to occur among those who are bullied and those who are bullies (Kaltiala-Heino et al., 1999). In our study, however, those who were bullied had different problems from those who were bullies.

Adolescents with internalizing problems exhibited relatively high frequencies of mental symptoms, were more often physically inactive and had poorer self-assessed health than the others. These factors are mutually interactive (King et al., 1996); for example, unpopularity or rejection by peers is associated with depression and with poor academic achievements at school (Hecht et al., 1998).

Teachers’ assessments of their pupils are reliable and valuable, but considerable work is required to identify the appropriate methods to intervene when pupils with problems are identified in school. Finnish comprehensive schools offer a good possibility for both the early detection of adolescents with mental, physical and social problems and for early intervention, because the whole age cohort is present in the school. One experimental project in this field is a school community development programme at a secondary school in Kuopio, Finland. The aims of this intervention are to provide system-level primary prevention that addresses the school ecology and focuses on creating a cooperative and supportive school environment. A central part of the project has been to redefine the role of the homeroom teacher in providing support and liaison between pupils, their families and the school personnel. This programme includes teamwork involving teachers, the school nurse and a social worker to create practical ways to intervene when problems are detected in pupils. Training, counselling and support for this programme has been given by the University of Kuopio and the University Hospital of Kuopio (Koivu et al., 2000). This type of comprehensive approach is needed to address those pupils who have an accumulation
of different types of problems and are potentially at risk of marginalization.

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