Improving prevention in Dutch child health care in schools

Development of a short questionnaire for early detection of psychosocial- and related child rearing problems

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Background: The focus of Dutch child health care among schoolchildren has shifted from preventing somatic diseases to early diagnosis of psychosocial problems. Studying psychosocial problems often requires the use of extensive questionnaires. The LSPPK is a short questionnaire developed for the purpose of school doctors examining five year olds. Methods: A study was carried out comprising data from 2,528 children visiting school doctors. Answers from the children’s parents who filled in the LSPPK questionnaire were compared to those of a health care professional (school doctor). Results: One or more problems were mentioned by 50% of the parents, while 5% indicated severe problems. Internal consistency of the questionnaire was good; Cronbach’s αs were 0.66 and 0.71 respectively for parent’s and professional’s answers. Furthermore, 75% of the school doctors indicated that the LSPPK provides a dialogue-oriented interaction between health care professionals and parents, because it helps parents to express their worries. Conclusion: The LSPPK invites parents to raise their worries about the behavioural and emotional problems of their children. In Dutch child health care the LSPPK is a useful instrument for indicating psychosocial problems among children as experienced by their parents and confirmed by school doctors. This article discusses the usefulness of the LSPPK for child health care in schools in European countries.

Keywords: child health care, child rearing problems, prevention, primary school children, psychosocial problems

In The Netherlands, the major aim of child health care practitioners, since their origin at the beginning of the twentieth century, has been the prevention of somatic diseases and disorders. School doctors and nurses examine schoolchildren several times during their school career. Parents accompany their children when they are young. These visits have three components:

- a medical history of the children is reviewed,
- the children are physically examined (for example, screening of vision and auditory screening) and
- parents are interviewed about problems at school or in the family.

The school doctor decides at the end of the visit whether there is need for follow-up or further preventive or curative actions, either by the school doctor or other specialists. Recent studies have emphasized the importance of identifying psychosocial problems in young schoolchildren.1-3

The increase in the number of children and adolescents with psychological problems stresses the need for early detection, prevention and help. In spite of the extra attention practitioners devote to detecting psychological disorders, most of them are not discovered.4 A British study noted that 22% of children aged 7–11 years who visited a general practitioner had psychiatric or psychosomatic disorders. All these children, however, consulted the practitioner for somatic complaints.5 A recent study in The Netherlands demonstrated that one of the main reasons that general practitioners do not detect the large majority of children with psychosocial or psychiatric complaints is the lack of readiness of parents to discuss these problems. Only a small percentage of parents of children with a clinical score on the Child Behaviour Checklist (CBCL) talk about their worries.6

Child health care-practitioners usually examine children with no serious psychological or psychiatric problems. Children with mental health problems are referred at an early stage to special education schools. Thus, in this field of research psychiatric disorders are not the central issue. Children at this age, however, sometimes demonstrate psychological problems which are firmly related to the child’s environment. The definition ‘psychosocial problems’ points to this relation between psychological development and factors/persons facilitating this development. It refers to the functioning of the child in relation to their family and other significant persons.
Where obedience and parental authority once characterized earlier childhood, parents nowadays are expected to raise their children as self-assured citizens, taking lead and initiative in work and private life. Psychosocial problems persist more readily in family circumstances where parents lack certainty about their role as parents and about the best upbringing methods. Child health care practitioners nowadays find it difficult to respond adequately to worries of parents. Therefore, child health care practitioners need reliable methods of detecting worries of parents about psychosocial problems during early childhood.

STUDIES

Until recently, only a few isolated studies on specific aspects of psychosocial behavior symptoms, such as sleeping disorders and enuresis, had been published in The Netherlands. However, there was a lack of epidemiological studies on the whole spectrum of behavioral and emotional disorders in children. One of the first studies in The Netherlands was based on standardized methods for indicating psychosocial problems was carried out by Verhulst, who examined 2,076 children aged 8 and 11 years in 1983. Results from that study indicated severe psychosocial problems in 7% of the children. Verhulst used an extensive questionnaire: the CBCL.

Recently, a study by Kousemaker on psychosocial and psychological problems in children was published, in which extensive questionnaires were also used. The same results were found, such as unfavourable psychosocial conditions in one-quarter of the children and severe psychosocial problems in 7% of the boys and 4% of the girls. Ferdinand and Verhulst later concluded that psychological problems in the adolescent phase were related to emotional and behavioral problems at ages 8 and 11 years. This conclusion was based on measurement among the same group of children who had earlier answered the CBCL and now had answered the YASR (a checklist that indicates psychological problems among adolescents). In addition, Caspi et al. described a connection between behavioral disorders at younger age and psychological disorders at a later age. This leads in favor of starting preventive measures in early childhood. Kolvin et al. demonstrated that early psychotherapeutic treatment of psychological disorders has positive effects over a longer period.

MOTIVE FOR A SHORT CHECKLIST FOR INDICATING PSYCHOSOCIAL PROBLEMS

Schoolchildren's visits to a school nurse or a school doctor are tightly scheduled. Many different items have to be examined in a short time. The CBCL is not applicable in the daily practice of school doctors and school nurses where no more than 20 min. are available for each child. Therefore, a committee was set up in which epidemiological and sociological researchers and a group of school doctors working at local public health centers developed a short checklist for indicating psychosocial problems in young children. This form, known as the LSPPK (translated as National Checklist for Indicating Psychosocial Problems in Five Year Olds), was specially developed for visits to school doctors.

PROCEDURE

Because of the short time per visit, the LSPPK had to contain no more than ten questions (nine indicative items and one 'open' question). The checklist had to give insight into the concerns of parents and in this way could stimulate dialogue between health care professionals and parents.

Existing checklists like the CBCL were examined to select the items with the highest positive predictive value (in the case where children were referred to mental health services — the best criterion for psychological morbidity). The checklist was evaluated in ten local public health services in different districts in The Netherlands. During 1 month (November 1995), parents of 2,528 children who regularly visit the school doctor were asked to fill in the checklist at home and discuss it during their visit to the school doctor. The school doctor added also his opinion to every item.

STATISTICAL ANALYSIS

The data were entered in the local public health services using Data Entry (an SPSS module). All statistical analyses were performed using SPSS for Windows version 6.0. Gender differences were tested with the Wilcoxon-Mann-Whitney test. Inter-observer variability between parents and school doctors and also differences between local health services were tested with the $\chi^2$ test. Significance was at an $\alpha$ level of 0.05.

PSYCHOMETRIC QUALITIES

Orthogonal (varimax) and oblique (direct quartimin) rotations were performed to identify factors for the concerns of parents and for psychosocial problems detected by school doctors. The first rotated factor (focused here only on the parents' answers, as table 1 shows) had three salient items loading at $\geq 0.57$. This factor was designated as 'behavioral problems'. The second rotated factor (designated as 'emotional problems') had four items loading at $\geq 0.53$.

The remaining scale (language/school development problems) had two items which loaded at $\geq 0.65$. Cronbach's $\alpha$ for the internal consistency of the list as a whole was 0.66. In addition, a discriminant analysis was performed to distinguish between children with severe problems and children with no or only mild psychosocial problems, in order to develop a procedure for predicting group membership of new cases. Two groups of children were compared: children referred to mental health services and children who were not referred. Table 2 shows the number of correct and incorrect classifications. Correctly classi-
fied cases appear diagonally in the table, since the predicted and actual groups are the same. The overall percentage of children classified correctly was 82%. Only 10% of the children predicted by the questionnaire were actually referred, which shows that school doctors indicate less problems than parents report. This also demonstrated the importance of the interview with parents during the visit about whether to refer a child to a mental health service or not.

**EPIDEMIOLOGICAL RESULTS**

**Reported problems**

A lack of self-confidence of their children (item 8 in table 3) was mentioned by approximately one-quarter of the parents of the 2,528 children. In addition many parents (21%) were concerned about the contrariness and stubbornness of their children (item 3). One question in the checklist offers the possibility of mentioning other psychosocial problems. One-third of the problems mentioned were similar to the nine items in the checklist. As shown in table 3 parents of boys obtained significantly higher scores on four of the nine items. The four items include the school-related items (language and concentration problems), item 3 (stubbornness) and item 8 (lack of self-confidence).

**School doctors and parents compared**

School doctors indicated less problems than parents. Sixty-five percent of the school doctors noted no problems, compared to 47% of the parents who reflected no worries. Six percent of the school doctors were worried about three items (2% five items or more). Of the parents, 10% mentioned three or more problem items (5% five items or more). The mean score among school doctors was 0.77 (SD 1.33 problem per child), while the parents score was 1.23 (SD 1.57).

**The effects of dialogue with school doctors on reported problems**

During the visit the school doctor discusses every item of the LSPPK with the parents. A special protocol is written for this purpose. The school doctor adds his opinion to

### Table 1 The results of factor analysis showing three factors underlying parents concerns:

<table>
<thead>
<tr>
<th>Concerns parents about their children</th>
<th>Factor 1: Behavioural problems</th>
<th>Factor 2: Emotional problems</th>
<th>Factor 3: Language/education problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plays not well with other children</td>
<td>0.57</td>
<td>0.19</td>
<td>0.13</td>
</tr>
<tr>
<td>Demands attention in an annoying way</td>
<td>0.80</td>
<td>0.14</td>
<td>0.48</td>
</tr>
<tr>
<td>Stubborn</td>
<td>0.79</td>
<td>0.07</td>
<td>0.12</td>
</tr>
<tr>
<td>No problems with schoolwork</td>
<td>0.29</td>
<td>0.16</td>
<td>0.65</td>
</tr>
<tr>
<td>Speech problem</td>
<td>0.02</td>
<td>0.03</td>
<td>0.83</td>
</tr>
<tr>
<td>Needs parents presence</td>
<td>0.08</td>
<td>0.72</td>
<td>-0.11</td>
</tr>
<tr>
<td>Shy/withdrawn/f timid behaviour</td>
<td>0.06</td>
<td>0.53</td>
<td>0.29</td>
</tr>
<tr>
<td>Lack of self-confidence</td>
<td>0.11</td>
<td>0.66</td>
<td>0.28</td>
</tr>
<tr>
<td>Worries, fears</td>
<td>0.31</td>
<td>0.63</td>
<td>-0.12</td>
</tr>
<tr>
<td>% variance accounted for by factor</td>
<td>30.2</td>
<td>12.0</td>
<td>11.7</td>
</tr>
<tr>
<td>Cronbach's alpha</td>
<td>0.58</td>
<td>0.54</td>
<td>0.35</td>
</tr>
</tbody>
</table>

### Table 2 Classification results of discriminant analysis distinguishing between children whose parents have many concerns (sumscore >3) and whose parents have less concerns (sumscore <3)

<table>
<thead>
<tr>
<th>Actual group</th>
<th>No. of cases</th>
<th>Sumscore &lt;3.33</th>
<th>Sumscore ≥3.33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (not referred)</td>
<td>2467</td>
<td>2040</td>
<td>427</td>
</tr>
<tr>
<td>Group 2 (referred)</td>
<td>61</td>
<td>19</td>
<td>42</td>
</tr>
</tbody>
</table>

Percent of ‘grouped’ cases correctly classified: 82%

### Table 3 Percent of children whose parents mentioned none, little or many concerns, also presented for boys and girls (N=2528)

<table>
<thead>
<tr>
<th>Item</th>
<th>Concerns</th>
<th>Boys Little/many concerns</th>
<th>Girls Little/many concerns</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Plays not well with other children</td>
<td>None 93</td>
<td>Little 7</td>
<td>Many &lt;1</td>
</tr>
<tr>
<td>2</td>
<td>Demands attention in an annoying way</td>
<td>None 86</td>
<td>Little 13</td>
<td>Many 2</td>
</tr>
<tr>
<td>3</td>
<td>Stubborn</td>
<td>None 79</td>
<td>Little 19</td>
<td>Many 2</td>
</tr>
<tr>
<td>4</td>
<td>Problems with schoolwork</td>
<td>None 87</td>
<td>Little 12</td>
<td>Many 1</td>
</tr>
<tr>
<td>5</td>
<td>Speech problem</td>
<td>None 85</td>
<td>Little 13</td>
<td>Many 1</td>
</tr>
<tr>
<td>6</td>
<td>Needs parents presence</td>
<td>None 92</td>
<td>Little 7</td>
<td>Many 1</td>
</tr>
<tr>
<td>7</td>
<td>Shy/withdrawn/timid behaviour</td>
<td>None 95</td>
<td>Little 4</td>
<td>Many &lt;1</td>
</tr>
<tr>
<td>8</td>
<td>Lack of self-confidence</td>
<td>None 75</td>
<td>Little 23</td>
<td>Many 2</td>
</tr>
<tr>
<td>9</td>
<td>Worries, fears</td>
<td>None 86</td>
<td>Little 13</td>
<td>Many 2</td>
</tr>
</tbody>
</table>

* Significance at <0.05
every item and checks whether parents have the same opinion about the seriousness of reported worries. Data from parents who reported problems on the checklist produced the following results. Among the 'worried' parents a proportion (21–33%) still experienced problems after the visit. However, many parents (21–34% of the 'worried') are reassured after visiting the school doctor. A small percentage of school doctors (<4%) reported (still) one or more problems while the parents were no longer worried.

**Further actions advised by the school doctors**

Following the protocol, at the end of the visit the school doctors decide whether there are indications for need of further or additional actions. A group of children will be referred to other practitioners or specialists in mental health agencies. In 51% of the cases there was no indication for further action. Table 4 shows the various other actions which are undertaken. Gender differences were also indicated: school doctors found it necessary to undertake further interventions for boys more often, more boys were invited for a revision and consultations were arranged with schoolteachers more frequently for boys.

**Evaluation of the usefulness of the LSPPK in the practice of the school doctor**

The 57 school doctors who were working with the LSPPK were asked to evaluate this instrument. Fifty-one school doctors completed the evaluation. Seventy-nine percent of the school doctors gave the opinion that the LSPPK doctors completed the evaluation. Seventy-nine percent of the school doctors described the LSPPK as a valuable (appreciable) method of engaging in dialogue with parents. Most of the school doctors answered that the LSPPK guides (them) in their investigation of relevant aspects of psychosocial development. They also experienced much better contact with parents. Furthermore, most of the school doctors (49–57%) also found that the LSPPK provides a standardized method for comparing findings about psychosocial problems between practitioners working in child health care and offers a basis for youth health policy in municipalities. Forty-four percent of the school doctors mentioned the long waiting lists for children referred to mental health services as the main bottleneck in the identification of psychosocial problems.

**DISCUSSION**

Parents of boys obtained significantly higher scores on four of the nine items. The four items include the school-related items, item 3 (stubbornness) and item 8 (lack of self-confidence). This is in accordance with the higher prevalence percentages of psychosocial problems in boys than in girls. Gender differences were also indicated in further actions taken by school doctors. In general, school doctors found it necessary to undertake further interventions for boys more often, more boys were invited for a revision and consultations were arranged with schoolteachers more frequently for boys.

Other studies have demonstrated that, as boys express their emotions in a way which is a burden to parents relatively more often, they will be referred to mental health services earlier. The LSPPK provides a practical approach for preventive actions in Child Health Care. The regular investigations by school doctors offer very little time for detecting psychosocial problems and having conversations about worries of parents. Therefore, the LSPPK has been developed to indicate psychosocial problems among children (as experienced by their parents and confirmed by school doctors). It guides the school doctor's attention to relevant aspects of the psychosocial development of children. The majority of the 57 school doctors who had worked with the LSPPK (and had investigated 2,528 five year old children during 1 month) were positive about the potential of the LSPPK. They felt that, because of the LSPPK, parents talked more freely about their worries when they had filled in the checklist. In the evaluation of the usefulness of the LSPPK school doctors described the LSPPK as a valuable method of engaging in dialogue with parents. Therefore, not only school doctors but also parents and their children profit from this procedure.

In Dutch child health care the LSPPK is a unique instrument. In the setting of the tightly scheduled visits to Dutch school doctors there are no useful, and standardized methods of indicating psychosocial problems. If the LSPPK is implemented nationwide in The Netherlands, a standardized method of detecting the concerns of parents about the psychosocial functioning of their children will exist in local health services.

The LSPPK also appears to be useful for epidemiological purposes. Insight has been obtained into the prevalence of psychosocial problems in the population of five year old children.
children. The results correspond with other studies on psychosocial problems: 10% of the parents responded to three or more psychosocial problems on the checklist (5% responded to five or more). Kousemaker and Verhulst found 5–7% severe psychosocial problems among young schoolchildren. The discriminant analysis in this study demonstrated that, when three or four items were indicated as a problem, school doctors found it necessary to refer the child to other practitioners or specialists of mental health services. Thus, for a score of at least three items, school doctors should seriously consider referring children to mental health services for further preventive actions. This score of 3–4 is not absolute; parents with one severe problem will also need special attention.

The overall percentage of children classified correctly was 82%. The same results were noted with regard to the discriminant score of the CBCL, a much more extensive questionnaire. The CBCL is an instrument for detecting behavioural and emotional problems among children, while the main purpose of the LSPPK to detect worries of parents about psychosocial problems in their children. This has to be taken in account when making a comparison between the two instruments. However, the LSPPK seems to be a reasonably sensitive and specific instrument for its purpose.

Applicability in other countries

Because the LSPPK reflects CBCL-items, we refer to a study by Achenbach et al. They noted that, when using the CBCL for American and Dutch children, remarkably little difference was reported, between the children. Achenbach et al. concluded that the same standardized assessment procedures can be relied on to produce similar results in the two countries despite linguistic and cultural differences.

In the Introduction we mentioned the relevance of preventive research in detecting psychosocial problems – the earlier the better. The method of indicating psychosocial problems has to be reliable and useful in a school doctors practice as well, where an extensive study on psychosocial problems is not a possibility. The LSPPK has satisfactory potential as a short and reliable checklist for early detection of psychosocial problems.

REFERENCES


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