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## Professional Identification of Psychosocial Problems among Children from Ethnic Minority Groups: Room for Improvement

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**Objective** To assess the effectiveness of child health care professionals (CHP) in identifying psychosocial problems among children originating from industrialized and nonindustrialized countries and to assess whether parental concerns enhance CHP problem-identification.

**Study design** During routine well-child visits data were collected from a sample of children aged 5 to 12 years of Dutch, Moroccan, Turkish, Surinam, and Antillean origin (response: 82%). CHP reported on psychosocial problems that they identified in children. Parents completed the Child Behavior Checklist (CBCL) and a questionnaire on concerns regarding their child's psychosocial development. Interpreter services were used to support parents in filling out questionnaires.

**Results** Elevated CBCL total and internalizing problem scores were more prevalent among children from nonindustrialized countries (10% and 17%, respectively) than among children from industrialized countries (3% and 5%, respectively). About 30% of the Turkish and Moroccan children with an elevated CBCL score were identified by CHPs compared with 60% of the children from industrialized countries. Parental concerns on their child's psychosocial well-being were related to elevated CBCL scores. Concerns were not related to CHP problem-identification.

**Conclusions** Better methods to support parents in disclosure of their concerns regarding the psychosocial development of their children may enhance CHP-identification of problems, especially among groups from nonindustrialized countries. (*J Pediatr* 2010;156:277-84).

Psychosocial problems influence children's daily lives negatively, have a tendency to be persistent, and may lead to adverse outcomes later.<sup>1-3</sup> The prevalence of parent- or self-reported psychosocial problems in the Netherlands is higher among children originating from nonindustrialized countries than among children from industrialized countries.<sup>4-9</sup> This difference may be explained by cultural differences, stress caused by a dual cultural environment, socioeconomic deprivation, or poorer access to preventive health care services.<sup>9</sup>

Early identification of psychosocial problems is important in preventing severe problems later in life.<sup>10,11</sup> In the Netherlands, preventive child health care is provided routinely for all school-age children free of charge. More than 90% of all children undergo 3 well-child assessments by a child health care professional (CHP) during their school careers.<sup>12</sup> Approximately half of the children with an elevated score on the Child Behavior Checklist (CBCL) are identified by the CHP.<sup>8</sup> Barriers to successful behavior screening identified in primary care concern limited training of physicians, limited time, poor reimbursement, lack of disclosure by parent, reluctance to label children by pediatrician, limited access to mental health services, limited knowledge of community resources, limited use of screening instruments, and lack of office strategies to integrate screening into well child visits.<sup>13,14</sup>

Reijneveld et al<sup>8</sup> showed that the association between the identification of psychosocial problems by CHPs and parent-reported problems on the CBCL was weaker for children from non-industrialized countries than for children of Dutch origin. These findings, however, may have been influenced by both selection bias and information bias. Although response rates were generally high (90%), a substantial proportion of Turkish and Moroccan parents failed to complete the CBCL, and their responses on the CBCL may have been partially invalid because many were limited by their Dutch fluency. In that earlier study no interpreter services were offered, excluding the group with the biggest communicational barriers.

Identification of children's psychosocial problems by CHPs is at least partially based on concerns expressed by parents during routine meetings.<sup>15-21</sup> The cultural background of parents might affect the expression of such concerns. Studies on cultural differences with respect to children's psychosocial problems, parental concerns about those problems, and their identification by CHPs are lacking until now. The aim of this study therefore was to assess the effectiveness of professional identification of psychosocial problems among children coming from industrial-

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|       |  |
|-------|--|
| CBCL  | Child Behavior Checklist                           |
| CHP   | Child health care professionals                    |
| ISCED | International Standard Classification of Education |
| ROC   | Receiver operating characteristic                  |

ized and nonindustrialized countries and to assess whether concerns reported by parents enhance problem identification by professionals.

## Methods

Data were collected between October 2002 and May 2003 during routine well-child health assessments, provided regularly to all children living in the Netherlands, with both parents and CHPs used as independent sources of information. We obtained a national sample of children by use of a 2-stage selection procedure. In the first stage, a random sample of 15 Dutch child health care services was established after categorization by region and level of urbanization. In the second stage, each service provided a random sample of about 100 children from 2 age groups that are invited for a routine well-child assessment: 5 to 6 years (2nd grade elementary school, Dutch classification) and 8 to 12 years (26% invited 5th or 6th grade pupils, 58% 7th, grade and 16% 8th grade pupils of elementary school). Child health care services in 2 large cities were asked to provide, for each age group, an additional sample group of 200 children from the 4 largest immigrant communities in the Netherlands, that is, Moroccan, Turkish, Surinam, and Antillean. The study was approved by the university ethical committee.

Of the 3646 children who were eligible, 2980 participated (82%). The response rates were lower for children of nonindustrialized origin and for children living in large cities. However, differences in background characteristics between responding and nonresponding groups were small (Cohen's "effect size *w*": 0.006-0.167). Children were included in the analyses when data were available on both parent-reported and CHP-identified psychosocial problems and on ethnicity of the child ( $n = 2556$ ). Parents who did not adequately complete the CBCL more often originated from a nonindustrialized country: 50% were from industrialized countries. They did not differ on other background characteristics. Moreover, children under current treatment for psychosocial problems (at least 1 contact during the previous 12 months) were excluded (6%). There were no significant differences between ethnic groups in the proportion of children that was under treatment. In total 2392 children were included in the analyses (Figure; available at [www.jpeds.com](http://www.jpeds.com)).

We mailed the CBCL and a parental concerns questionnaire to all parents, before routine well-child health examinations. The questionnaires were returned in a sealed envelope; they were not viewed by the CHP. During the health assessment, the CHP obtained sociodemographic and mental health history information by following a standardized interview with the parents. After the health assessment the CHP registered if the child had psychosocial problems. All participating CHPs received training in interviewing the parents and in assessing psychosocial problems.

We provided English, Arabic, and Turkish translations of the CBCL. Turkish and Moroccan interpreters were available

to assist Turkish and Moroccan parents in completing the questionnaire (ie, speakers of Turkish and Arabic or Berber, a Moroccan dialect, respectively); parents from Surinam and the Netherlands Antilles (being former Dutch colonies) mostly speak Dutch. A biased interpretation of the questionnaire by the translators was prevented by providing a written translation of the parent-questionnaire, and instructing the translators, including a discussion of the meaning of each item of the questionnaire (including the CBCL) with them. Moreover, CHPs planned extra time for the health assessments of children from nonindustrialized countries.

## Measures

Parent-reported psychosocial problems were assessed with the CBCL 1.5-5 and CBCL 6-18, which focus on parent-reported child behavioral and emotional problems during the preceding 6 months.<sup>22,23</sup> The CBCL yields a total problem score (the higher the score, the more problems), as well as separate scores for behavioral and emotional problems ("Externalizing" and "Internalizing" problems, respectively). Children were allocated to a normal range or an elevated/clinical range of scoring distributions for each separate scale on the basis of a normative sample.

Parental concerns about their children's psychosocial problems were obtained by a parental concerns questionnaire regarding behavioral problems and/or emotional problems in the past 12 months, for which they felt they needed professional assistance. The responses to the questions either were "no concerns," "some concerns," or "many concerns."<sup>21</sup> Parents were assigned to either (1) parents with no concerns or (2) parents with some/many concerns.

After each child's physical examination, the CHP obtained mental health history information by following a standardized interview with the parents. Next the CHP filled out the following question: "Does the child have a psychosocial problem, at this moment?" and also scored the identified problem(s) on a precoded list representing several categories of problems: internalizing problems, externalizing problems, school problems, deviant behavior, and sexual problems. In this study we merely used the question on whether the child did or did not have a psychosocial problem according to the CHP.

CHPs recorded child and family characteristics: age, sex, country of birth of the child and the parents, family composition, family income, parental employment, parental education, parental language and history of psychosocial problems. Ethnic background was assessed on the basis of country of birth of the child's parents. Children were coded as originating from an industrialized country when they were indigenous Dutch or from another country that resembles in socioeconomic and cultural position the Dutch population (Statistics Netherlands: [www.cbs.nl](http://www.cbs.nl)): defined as countries that are member of the Organization for Economic Co-operation and Development, except Turkey. Children were coded as originating from a nonindustrialized country when originating from Turkey or from countries not member of the Organization for Economic Co-operation and Development.

Children originating from a nonindustrialized country were further categorized in the main immigrant groups in the Netherlands: being from a present or former Dutch colony (1 parent born in Surinam or Netherlands Antilles), Turkish (1 parent born in Turkey), Moroccan (1 parent born in Morocco), or as immigrants from “other” nonindustrialized countries (1 parent born in another nonindustrialized country). When both parents were of non-Dutch origin we used the mother’s country of birth to determine the child’s ethnicity. Socioeconomic status was measured by family income, parental employment status, and parental educational level. Educational level was determined by the highest level of education completed by the parents and then classified according to the International Standard Classification of Education (ISCED). This variable has 3 levels: (1) High level: recognized third level education, (ISCED 5-7 or >12 years of education), (2) average level: second stage if second level education (ISCED 3, or 10 to 12 years of education; and (3) low level: less than second stage of second level education, (ISCED 0-2 or  $\leq 9$  years of education).<sup>24</sup> Family income was classified as being below or at the poverty line (about 1200 euros net per household in 2000), or above. Employment status was defined as having at least 1 parent working. Family composition referred to 2-parent households, 1-parent household, or other situation, such as 2 parents of the same sex.

### Analyses

We assessed differences in background characteristics between ethnic groups by use of  $\chi^2$  testing and analysis of variance. Differences between ethnic groups in the identification of psychosocial problems of children were assessed by examining prevalence rates of CHP-assessed and elevated CBCL problem scores and by examining associations between CHP-assessed problems and scores on the CBCL by use of logistic regression analysis. To compare our data with the earlier results of Reijneveld et al,<sup>8</sup> we also computed areas under the receiver operating characteristic (ROC) curves for each ethnic group, relating the CBCL to CHP-identified problems. This approach integrates information about the sensitivity and specificity of a given test for all possible cut-off points of the CBCL. To compare CBCL scores of children of different ages, we used T-scores in the ROC analyses.<sup>22,23</sup>

We also examined the differences between ethnic groups in the role of parental concerns in relation to the CBCL total problem score by examining the association between concerns and scores on the CBCL with logistic regression and ROC-analyses. Further logistic regression analysis was used to assess whether children with both an elevated CBCL total problem score and parents with concerns about their child’s psychosocial behavior were more likely to be identified by the CHP than children with an elevated CBCL score and parents without concerns about their child’s behavior.

Odds ratios were adjusted first for age and sex of the child and second for family characteristics. Because CHP characteristics may affect findings for all children assessed by that CHP, we used multilevel models for all analyses that used

CHP responses as an outcome. Multilevel models account for clustering by CHP.

## Results

Our recruitment method meant that most Turkish, Moroccan, Surinam, and Antillean children in our study lived in urbanized areas. Almost half of the Turkish, Moroccan, Surinam, and Antillean families lived below the poverty line, and the educational status of more than half of Turkish and Moroccan parents was low. Turkish and Moroccan fathers and mothers most often communicated in their native language (Table I).

The proportion of children with an elevated CBCL total problem score or internalizing score was higher for children from nonindustrialized countries (10% and 17%, respectively) than from industrialized countries (3% and 5%, respectively). Turkish and Moroccan children had the highest probability of having an elevated CBCL total problem score or internalizing score (Table II).

After adjusting for family characteristics, only Moroccan and Turkish children still had significantly higher odds of having an elevated CBCL total problem score and internalizing score than children with an industrialized background. The 3 characteristics that were most important in the adjustments were income, education level, and country of birth of the child.

The prevalence of psychosocial problems identified by CHPs was substantially higher than the prevalence of an elevated CBCL Total problem score. In contrast with the CBCL, no differences between ethnic groups were found in CHP-identified problems.

Table III shows that children from industrialized countries, Surinam/Antilles, and “other” nonindustrialized countries with an elevated CBCL total problem score were significantly more often identified by the CHP as having psychosocial problems than children from industrialized countries with a normal CBCL total problem score. In contrast, children of Moroccan or Turkish origin with an elevated CBCL total problem score were not more often identified by the CHP than children from industrialized countries with a normal CBCL total problem score. The area under the curve—scores—fit between CBCL score and CHP-identified problems—were highest for children from industrialized countries and lowest for children with a Moroccan or “other” nonindustrialized background (Table III).

Associated with this, there were large differences in the sensitivity of identification between ethnic groups. Around 30% of the Turkish and Moroccan children with an elevated CBCL total problem score were identified by CHPs compared with 60% of the children from industrialized countries. The specificity of the identification of psychosocial problems by CHPs was similar across ethnic groups: approximately 80% of the children with a normal CBCL total problem score were also recognized by CHPs as not having a psychosocial problem.

About 20% to 30% of parents among all ethnic groups were concerned about their child’s psychosocial development

**Table 1.** Child and family characteristics of study participants

|   | Mean (SD)<br>age in<br>years | % of<br>girls | % born in<br>Netherlands<br>(missing = 20) | % living in<br>urbanized area | % with both<br>parents a lower<br>educational<br>status<br>(missing = 133) | % 1-parent<br>families<br>(missing = 39) | % of at least 1<br>parent working<br>(missing = 219) | % of parents<br>living below<br>poverty line<br>(missing = 345) | % of children<br>ever under<br>treatment for<br>psychosocial<br>problems | % of parents<br>communicating<br>in native<br>language |
|---|------------------------------|---------------|--|-------------------------------|--|--|--|---|--|--|
| Children from industrialized countries (n = 1831)           | 7.6 (2.6)                    | 52.1          | 97.5                                       | 14.3                          | 22.6   | 6.2                                      | 98.8   | 4.9   | 13.2   | 0.4  |
| Children with Surinamese and Antillean background (n = 145) | 7.5 (2.8)                    | 47.6          | 84.7                                       | 71.7                          | 23.4   | 37.2                                     | 84.8   | 40.0  | 13.1   | 9.4  |
| Children with Turkish background (n = 150)                  | 8.3 (2.4)                    | 41.3          | 91.9                                       | 56.7                          | 53.3   | 16.7                                     | 81.4   | 40.0  | 15.3   | 80.7   |
| Children with Moroccan background (n = 156)                 | 8.0 (2.6)                    | 52.6          | 91.0                                       | 75.0                          | 64.1   | 9.0                                      | 65.1   | 44.2  | 9.6  | 73.9   |
| Children from other non-industrialized countries (n = 110)  | 8.4 (2.6)                    | 51.8          | 64.5                                       | 14.5                          | 22.7   | 12.7                                     | 82.3   | 20.9  | 19.1   | 33.3   |
| <i>P</i> value  | <.05                         | NS            | <.001                                      | <.001                         | <.001  | <.001                                    | <.001  | <.001   | NS   | <.001  |

NS, Not statistically significant difference

Missing data were included as category "unknown" in the analyses.

**Table II.** Percentages (%) of children who have an elevated score on the CBCL, psychosocial problems according to CHP, and whose parents have concerns and associated odds ratios (OR) with children originating from industrialized countries used as a reference category

|   | CBCL total problem score |                           | CBCL externalizing score |                          | CBCL internalizing score |                          | Psychosocial problems identified by CHP |                     | Parental concerns questionnaire |                     |
|---|--------------------------|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---|---------------------|---------------------------------|---------------------|
|   | %                        | Adjusted OR (95%CI)       | %                        | Adjusted OR (95%CI)      | %                        | Adjusted OR (95%CI)      | %                                       | Adjusted OR (95%CI) | %                               | Adjusted OR (95%CI) |
| Children from industrialized countries (n = 1831)           | 3.4                      | 1                         | 3.5                      | 1                        | 5.4                      | 1                        | 21.0                                    | 1                   | 27.4                            | 1                   |
| Children with Surinamese and Antillean background (n = 145) | 6.9                      | <b>2.04 (1.02-4.07)*</b>  | 6.2                      | 1.79 (0.87-3.68)         | 11.7                     | <b>2.29 (1.33-3.95)†</b> | 25.0                                    | 1.23 (0.83-1.83)    | 29.0                            | 1.07 (0.74-1.56)    |
| Children with Turkish background (n = 150)                  | 10.7                     | <b>3.12 (1.74- 5.59)‡</b> | 4.0                      | 0.93 (0.38-2.24)         | 23.3                     | <b>5.31 (3.44-8.20)‡</b> | 22.3                                    | 1.14 (0.76-1.71)    | 32.0                            | 1.36 (0.94-1.95)    |
| Children with Moroccan background (n = 156)                 | 13.5                     | <b>4.36 (2.58- 7.38)‡</b> | 9.0                      | <b>2.56 (1.40-4.70)*</b> | 17.9                     | <b>3.87 (2.45-6.12)‡</b> | 17.3                                    | 0.82 (0.53-1.26)    | 22.4                            | 0.80 (0.54-1.20)    |
| Children from other nonindustrialized countries (n = 110)   | 7.3                      | <b>2.17 (1.01- 4.65)*</b> | 4.5                      | 1.18 (0.46-2.01)         | 11.8                     | <b>2.38 (1.29-4.41)†</b> | 22.9                                    | 1.20 (0.75-1.91)    | 20.9                            | 0.75 (0.47-1.20)    |

Bold: Odds ratio differs from "1" (reference group) with statistical significance.

Adjusted for age and sex of the child.

\* $P < .05$ .

† $P < .01$ .

‡ $P < .001$ .

(Table II). After adjusting for differences in child and family characteristics, parents of children from "other" nonindustrialized countries (OR = 0.57 95% CI = 0.34-0.98) had significantly lower odds of reporting concerns than parents of children from industrialized countries.

In all ethnic groups an elevated CBCL total problem score was associated with parental concerns about children's psychosocial problems (Table IV). About 75% of the children with an elevated CBCL total problem score had parents who were concerned about their behavior versus about 25% of the children with a normal score.

Comparing CBCL scores with parental concerns yielded area under the curve—scores that were highest for children of Turkish, Moroccan, Surinamese, and Antillean origin

(Table IV) and that were all higher than those yielded when comparing CBCL scores with CHP-identified problems.

Finally all children with both an elevated CBCL total problem score and parents with concerns about their psychosocial problems were equally likely to be identified by the CHP than those with an elevated CBCL problem score and no reported parental concerns (OR = 1.17, 95% CI = 0.49-2.77). There were no ethnic differences.

## Discussion

The prevalence rates of an elevated CBCL total and internalizing problem scores were particularly high among Turkish

**Table III.** Multilevel odds ratios and areas under ROC curve of CHP identified psychosocial problems by parent-reported problems on the CBCL for the various ethnic groups

| Outcome: CHP-identified problems | Children from industrialized countries (n = 1831)<br>OR (95%CI) | Children with Surinamese and Antillean background (n = 145)<br>OR (95%CI) | Children with Turkish background (n = 150)<br>OR (95%CI) | Children with Moroccan background (n = 156)<br>OR (95%CI) | Children from other nonindustrialized countries (n = 110)<br>OR (95%CI) |
|----------------------------------|---|---|--|---|---|
| CBCL total problem score*        |   |   |  |   |   |
| Normal                           | 1 (reference)   | 1.21 (0.79-1.84)  | 1.19 (0.77-1.85)   | 0.78 (0.48-1.27)  | 1.17 (0.71-1.92)  |
| Elevated                         | <b>6.58 (3.89-11.14)†</b>                                       | <b>4.76 (1.25-18.12)‡</b>   | 1.79 (0.62- 5.22)  | 1.78 (0.68-4.66)  | <b>4.28 (1.04-17.56)</b>  |
| CBCL total problem score§        |   |   |  |   |   |
| Normal                           | 1 (reference)   | 1.03 (0.63-1.68)  | 1.15 (0.61-2.15)   | 0.78 (0.40-1.50)  | 1.31 (0.75-2.29)  |
| Elevated                         | <b>5.22 (3.01-9.06)†</b>  | <b>6.68 (1.56-28.67)‡</b>   | 1.68 (0.51-5.52)   | 1.65 (0.56-4.92)  | <b>6.39 (1.34-30.54)</b>  |
| Area under ROC curve             | 0.67 (0.64-0.70)  | 0.65 (0.55-0.75)  | 0.60 (0.49-0.71)   | 0.56 (0.43-0.69)  | 0.56 (0.43-0.69)  |

Bold: ORs that differ from "1" (reference group) with statistical significance  $P < .05$ .

Ref. Group with children with an industrialized background was used as a reference category.

\*Odds ratios are calculated using multilevel analysis and are adjusted for age of the child (5-6 or 8-12 years).

† $P < .001$ .

‡ $P < .05$ .

§Odds ratios are calculated with multilevel analysis and are adjusted for age and sex of the children, children's country of birth, geographic region, income, parents' employment status and education, family situation, parental language, and treatment history.

||Area under ROC curve scores are calculated by use of T-scores (converted CBCL scores by age: 5-6 years, 8-12 years).

**Table IV.** Multilevel odds and areas under ROC curve of having parental concerns by parent-reported problems on the CBCL for the various ethnic groups

| Outcome: Parental concerns            | Children from industrialized countries (n = 1831)<br>OR (95%CI) | Children with Surinamese and Antillean background (n = 145)<br>OR (95%CI) | Children with Turkish background (n = 150)<br>OR (95%CI) | Children with Moroccan background (n = 156)<br>OR (95%CI) | Children from other nonindustrialized countries (n = 110)<br>OR (95%CI) |
|---------------------------------------|---|---|--|---|---|
| CBCL Total Problem score*             |   |   |  |   |   |
| Normal                                | 1 (ref)   | 0.97 (0.65-1.47)  | 1.19 (0.80-1.78)   | <b>0.59 (0.37-0.94)</b>                                   | 0.63 (0.37-1.07)  |
| Elevated                              | <b>12.39 (6.63-23.17)<sup>†</sup></b>                           | <b>11.49 (2.40-54.96)</b>   | <b>9.31 (2.97-29.20)</b>                                 | <b>5.28 (2.16-12.88)</b>                                  | <b>9.23 (1.84-46.23)</b>  |
| CBCL total problem score <sup>‡</sup> |   |   |  |   |   |
| Normal                                | 1 (ref)   | 0.64 (0.40-1.02)  | 1.07 (0.59-1.96)   | 0.53 (0.28-1.02)  | <b>0.51 (0.28-0.91)<sup>§</sup></b>                                     |
| Elevated                              | <b>11.56 (6.10-21.89)<sup>†</sup></b>                           | <b>8.33 (1.64-42.30)<sup>§</sup></b>                                      | <b>10.12 (2.85-36.01)<sup>†</sup></b>                    | <b>5.15 (1.81-14.71)<sup>  </sup></b>                     | <b>8.59 (1.59-46.40)<sup>§</sup></b>                                    |
| Area under ROC curve <sup>¶</sup>     | 0.77 (0.75-0.80)  | 0.83 (0.76-0.90)  | 0.85 (0.79-0.91)   | 0.82 (0.75-0.89)  | 0.76 (0.65-0.88)  |

Bold: Odds ratios that differ from '1' (reference group) with statistical significance  $P < .05$ .

Ref. Group with children with an industrialized background was used as a reference category.

\*Odds ratios adjusted for age of the child (5-6 or 8-12 years).

† $P < .001$ .

‡Odds ratios adjusted for age and sex of the children, children's country of birth, geographic region, income, parents' employment status and education, family situation, parental language, and treatment history.

§ $P < .05$ .

|| $P < .01$ .

¶Area under ROC curve scores are calculated by use of T-scores (converted CBCL scores by age: 5-6 years, 8-12 years).

and Moroccan children. In contrast, the CHP did not observe more psychosocial problems in Turkish or Moroccan children than in children from other countries. The proportion of children with an elevated CBCL total problem score and with psychosocial problems identified by the CHP was in fact lowest among children of Moroccan and Turkish origin. There were only small differences between ethnic groups in the proportions of parents who had concerns about psychosocial problems of their child. Having concerns was clearly related to an elevated CBCL total problem score but was not related to an increased identification of problems by CHPs.

In this study 30% of the Turkish and Moroccan children with an elevated CBCL score were identified by CHPs as having a psychosocial problem. Although sensitivity to the identification of psychosocial problems in Turkish and Moroccan children is low, this is an improvement on the situation of a decade ago, where sensitivity to the identification of problems in this group was only 10% and that for indigenous Dutch children was 56%.<sup>8</sup> The increase in identifying Turkish and Moroccan children with problems may be interpreted as a confirmation of the hypothesis that a part of the poor identification in the earlier study of psychosocial problems by CHP is due to biased parent-reporting caused by incorrect completion of the CBCL. We provided Turkish and Moroccan parents with assistance from interpreters to complete questionnaires and thus reduce the risk of misunderstanding questions on the CBCL. Nevertheless, even with less completion bias, the sensitivity of CHP identification among Turkish and Moroccan children remains considerably lower than among children from industrialized countries.

Considering the lower CHP identification rate of psychosocial problems among children originating from nonindustrialized countries, it is interesting that an elevated CBCL was clearly related to parental concerns on child's psychosocial

development in each ethnic group. This was also previously reported in a larger age-range of children (aged 0 to 12 years).<sup>21</sup> However, having both concerns on the psychosocial well-being of their child and reporting an elevated CBCL score does not improve the identification of problems by the CHP, suggesting that parents did not disclose their concerns on their children's psychosocial well-being to the CHP. Other studies found that the presence and disclosure of parental concerns enhances the possibility of CHP identifying psychosocial problems.<sup>15-20</sup> One study also found that in general only one third of the parents who had concerns expressed them during consultations.<sup>20</sup>

Other factors may have influenced the CHPs' judgment, even if parents expressed their concerns about their children's behavior. One such factor may relate to language difficulties. Parents of disabled children who did not raise concerns about their child's health during a health assessment had difficulties communicating in either English or Spanish.<sup>17</sup> In this study Turkish and Moroccan fathers and mothers most often communicated in their native language to each other. Although we do not have data on their fluency in Dutch, these findings suggest that communication difficulties may play a role in raising concerns to the health care professional.

Besides language difficulties, cultural differences or preconceptions can hamper the interaction between physicians and immigrant patients.<sup>25-28</sup> Zwirs et al<sup>29</sup> found a discrepancy in treatment status between non-Dutch and Dutch children with mental health problems. They concluded that several barriers may contribute to this discrepancy. Some of their mentioned barriers are also applicable for the identification of psychosocial problems by the CHP. Differences in CHP identification rates may be due to barriers in the expression and identification of problems by parents; for example,

parents from nonindustrialized countries have been shown to be less willing to talk about problems outside the direct family because they consider it to be socially less desirable to do so.<sup>25</sup> Ethnic disparities in CHP identification may also be due to a difference in CHP's perceptions and attribution style.

Another barrier may be related to the skills of CHP. The health care professional might not possess enough skills to elicit the concerns of parents and to assess psychosocial problems in children, particularly among parents/children with a foreign origin.<sup>13,14</sup> A qualitative study from Berlin et al<sup>30</sup> showed that some psychosocial conditions among children with a foreign origin were difficult to assess, because they were unfamiliar and not understood by the nurses. Moreover structural and organizational factors, such as reluctance to label children by pediatrician, limited time, limited access to mental health services, limited knowledge of community resources, limited use of screening instruments, and lack of office strategies to integrate screening into well child visits might have an additional impact on the CHP-identification rate among children from nonindustrialized countries.<sup>13,14</sup>

Important strengths of our study are the high response rate and the oversampling of children from nonindustrialized countries. Thanks to the use of interpreters, the nonresponse rate of families from nonindustrialized countries was far lower than in our previous study.<sup>8</sup> Good reliability and validity of the CBCL have been established in different countries, and the use of multilingual resources reduced the risk of interpretation errors in completing the CBCL by immigrant parents in our study.<sup>31</sup>

A limitation of our study may be that the sample of ethnic minority children was not representative of the distribution of ethnic groups in the Netherlands in general because children were mainly recruited from large cities. However, the large cities house most of all immigrants in the Netherlands. Furthermore parental country of birth has its limitations as a classification of ethnicity. People who are born in the same country might have a different ethnic background and country of birth does not cover all dimensions of ethnicity, such as ethnic identity.) The (parental) country of birth, however, also has important advantages that outweigh these disadvantages. It is objective and stable and allows for comparisons over time and between studies.<sup>32</sup> Our questionnaire also included an item on the language that parents speak with each other and with their child. Our language question showed that compared with the immigrant groups, Turkish and Moroccan fathers and mothers most often spoke in their native language to each other. Although this provides no actual information on their fluency in Dutch, it gives some additional information on their level of acculturation. However, adjusting our outcome measures for differences in language did not change the results of this study.

Early identification of psychosocial problems is an important step in preventing severe problems later in life. Our study, using interpreter services to avoid biased parental reports, confirms the poor CHP-identification rate among nonindustrialized children. Our results also reveal that effective disclosure of parental concerns on the emotional and be-

havioral development of their child may enhance the identification by CHPs, independent of ethnic background. Short assessment tools such as the Parents' Evaluation Development Scale, the Strengths and Difficulties Questionnaire, the Pediatric Symptom Checklist, as well as training CHPs have been shown to support the CHPs in their problem identification task.<sup>33-35</sup> Since 2008, in the Netherlands, it has been advised to use the Strengths and Difficulties Questionnaire as an assessment tool of psychosocial problems in school-aged children but also to further adapt and refine the tools for immigrant groups.<sup>36</sup> Parents could also be triggered more in disclosing their concerns to the CHP. In a study by Sices et al<sup>37</sup> parents viewed a 5-minute "activation" video providing information about developmental skills expected for most children the child's age and providing activation messages, emphasizing the importance of parents' concerns and expertise about their child. These parents were more likely to raise a concern during the visit to the CHP. Furthermore the communication between CHP and parents/children might need improvement. Wissow et al<sup>38,39</sup> found that parents visiting pediatricians using psychosocially oriented interviewing techniques were more likely to disclose their concerns. They also demonstrated that communication training for CHPs had a positive impact on parent mental health symptoms and reduced minority children's impairment across a range of problems. ■

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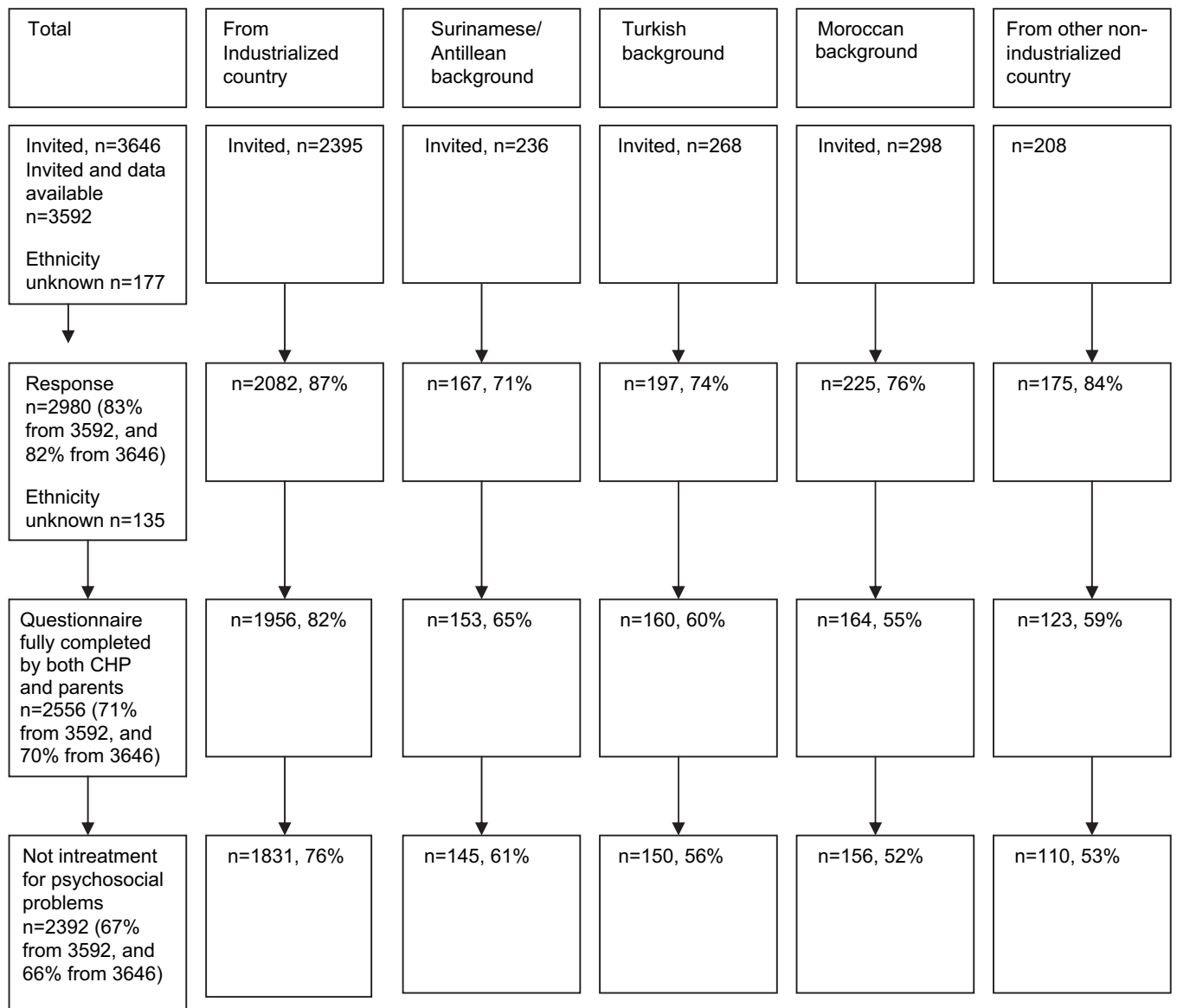


Figure. Sampling scheme.