



## **Psychological difficulties among children and adolescents with ethnic Danish, immigrant or refugee background**

Leth, Ingrid; Niclasen, Janni; Ryding, Else; Baroud, Yasmine; Esbjørn, Barbara Hoff

*Published in:*

Scandinavian Journal of Child and Adolescent Psychiatry and Psychology

*Publication date:*

2014

*Document version*

Early version, also known as pre-print

*Citation for published version (APA):*

Leth, I., Niclasen, J., Ryding, E., Baroud, Y., & Esbjørn, B. H. (2014). Psychological difficulties among children and adolescents with ethnic Danish, immigrant or refugee background. *Scandinavian Journal of Child and Adolescent Psychiatry and Psychology*, 2(1), 29-37.

## Psychological Difficulties among Children and Adolescents with Ethnic Danish, Immigrant, and Refugee Backgrounds

Ingrid Leth<sup>1\*</sup>, Janni Niclasen<sup>1</sup>, Else Ryding<sup>2</sup>, Yasmine Baroud<sup>3</sup>, Barbara H. Esbjørn<sup>1</sup>

<sup>1</sup>Department of Psychology, University of Copenhagen, Denmark

<sup>2</sup>OASIS Rehabilitation- and Treatment Centre for Traumatized Refugees, Denmark

<sup>3</sup>Danish Refugee Council, Denmark

\*Corresponding author: Ingrid.leth@psy.ku.dk

### Abstract

**Objective:** This study investigated and compared the prevalence of psychological difficulties among Danish, immigrant, and refugee children.

**Methods:** We enrolled 332 children between the ages of 8 and 18 years (148 Danish children, 81 immigrant children, and 67 children with refugee backgrounds), all from low-income areas of residence. The Health Behaviour in School-aged Children Symptoms Checklist, the Strengths and Difficulties Questionnaire, and the Revised Children's Anxiety and Depression Scale were applied.

**Results:** We found significant differences among the groups, with Danish children reporting lower levels of conduct problems than both immigrant children ( $P < .01$ ) and refugee children ( $P < .05$ ). Refugee children also reported more peer problems ( $P < .05$ ), more symptoms of obsessive-compulsive disorder ( $P < .01$ ), and more separation anxiety symptoms ( $P < .05$ ) than the Danish children. No significant differences with regard to age or gender were found among the groups.

**Conclusions:** Our data suggest that, although immigrant children had higher levels of conduct problems than ethnic Danish children, they did not suffer from higher levels of internalizing psychological difficulties. However, refugee children were at higher risk for psychological difficulties associated with both externalizing and internalizing.

**Keywords:** Mental health, refugee children, immigrant children, school children

### Introduction

Children and adolescents with immigrant parents will, in some cultures, represent an ethnic minority group. Some will be descendants of parents who are labor immigrants, whereas other parents have refugee backgrounds and may have been traumatized by their previous experiences. The effects of being a member of an ethnic minority and of having traumatized parents on the mental health of children have been examined in several studies (1;2). However, these studies were not conclusive. Instead, they provided a mixed picture, with some studies reporting an increased risk of mental health problems among displaced and refugee children who had been resettled in high-income countries and others not suggesting such issues (3). Living in countries that are characterized as being ethnically

homogeneous, like the Nordic countries, can be particularly challenging for youth from ethnic minority populations. The prevalence of ethnic minorities in Denmark is approximately 10%, and refugees constitute 20% of that group. In 2011, the refugee population in Denmark included approximately 107,000 adults and children total (4).

#### *Mental health among children of immigrant parents*

A large-scale study that enrolled more than 2000 11-year-old immigrant and ethnic Dutch children was conducted in Holland (5), a country with approximately the same percentage of immigrants as Denmark. The study included measures of mental health from multiple sources, such as the Youth Self-Report and the Child Behavior Checklist (6;7). The authors found discrepancies in reported

difficulties between the two groups. The young respondents themselves did not report any differences in difficulty levels, whereas immigrant parents reported that their daughters had more mental-health-related internalizing problems than the daughters reported themselves. Furthermore, teachers reported higher levels of externalizing problems in both boys and girls among the immigrant groups than among the ethnic Dutch children. This latter finding is corroborated by another study that found Turkish immigrant adolescents to have a significantly higher total rate of problems than Dutch adolescents (8).

Similar tendencies have been observed among youth samples from other countries. In a Turkish study that compared migrant children (having temporary residence in Turkey) with non-migrant children, Diler and colleagues (9) found that the migrant children had significantly lower self-esteem and higher levels of depression and anxiety. By contrast, externalizing behavior was not significantly elevated in the migrant group. In a review of mental health among migrant children, Stevens and Vollebergh (10) stated in their review that it was difficult to draw any sound conclusions with respect to these children's risk of mental health problems. Many confounding factors that may affect the risk of children's mental health are mentioned in these studies, including the family's socioeconomic status and the parents' employment status and educational level. In addition, family stress often resulted from the fact that immigrant adolescents generally acculturate to the values of the new society faster than their parents do.

#### *Subjective health among children of immigrant parents*

How children inform others about their well-being is often expressed in complaints about their subjective health. In a large study of adolescents living in five Nordic countries, subjective health complaints, which may be conceived as a proxy for psychological and physical well-being, were applied to assess the young persons' subjective health (11). The study showed that adolescents with foreign backgrounds reported significantly higher levels of subjective health complaints (e.g., headache, back pain, stomach pain, loss of appetite, lower feeling of well-being) as compared with children from the majority of the population. Several similar studies have also been conducted in Denmark. A recent study found immigrant children to suffer from more health-related problems as compared with ethnic Danish children (12). This study included 7,056 students (age groups: 11 years, 37%; 13 years, 34%; 15 years, 29%) and addressed both physical and mental-health-related problems, which were referred to in the article as "nervous symptoms."

The youth were divided into three groups: immigrant (4%), descendants (7%), and ethnic Danes (89%). The outcomes demonstrated no significant differences in self-reported somatic health complaints among the three groups with regard to headache, stomachache, or backache. However, 32% of the immigrant girls and 28% of the immigrant boys reported experiencing nervous symptoms; these were a significantly higher prevalence than those found among the ethnic Danish girls and boys at 23% and 18%, respectively. These findings were supported by a Swedish study that reported higher levels of subjective health-related complaints among girls with foreign backgrounds, who from the seventh grade onward showed an increased risk for subjective health complaints as compared with girls with Swedish backgrounds (13).

#### *Mental health among children of refugees*

Children of refugee parents may be perceived as immigrants, and they are often included in the groups of immigrants in studies such as those described previously. However, it is highly possible that parents who are refugees may differ from parents who have immigrated as a result of their own choice with regard to mental-health-related problems (e.g., post-traumatic stress, lack of social network) and other important parameters that affect the upbringing of a child. Therefore, it is important to distinguish between the impact of being a member of an ethnic minority and that of having a refugee background on mental health; studies have been undertaken to address this distinction. According to a review conducted by Reed and colleagues regarding the mental health of displaced and refugee children, protective effects include confounding factors such as stable family life, education, and support received during the process of integration into local communities (14).

Although the literature is limited, the existing findings indicate that being a refugee or being the child of a refugee parent may increase an individual's risk of experiencing mental health problems (15). Leavey and colleagues examined psychological disorders among refugee and migrant children in London with the use of the Strengths and Difficulties Questionnaire (SDQ) as a self-report measure and found that both migrant and refugee children expressed greater psychological distress on a number of the questionnaire's subscales (16). A British study of the mental health of refugee children included a classmate control group that consisted of both ethnic minority and indigenous white children (17). The study applied a teacher-rated SDQ. Teachers rated refugee children

as having higher levels of emotional difficulties than both of the control group populations.

#### *Gender differences with regard to reported mental health among refugee children*

In a review of 44 studies of refugee youth by Fazel and colleagues, boys were reported to experience higher levels of post-traumatic stress disorder symptoms as compared with girls (3). In half of the studies that enrolled both accompanied and unaccompanied refugee children, the prevalence of depression and internalizing difficulties was higher among girls than boys. However, the remaining studies showed no gender-related effects. The overall conclusion presented by the review was that results involving gender differences in relation to mental health were inconsistent. Other studies also found depression and internalizing difficulties to be higher among girls than boys (14). Overall, the differences between genders follow the patterns found in the general population: emotional disorders are more prevalent among females than males and males are more susceptible to externalizing disorders than females (18). One explanation for the lack of firm conclusions within this topic may also be found in the heterogeneity of study samples and the applied measurements of mental health issues.

#### *Purpose of the study*

Motivated by the lack of clarity in the literature with regard to the effect of immigration or having a refugee background on mental health in the youth population, we examined mental health problems in three groups of youth between the ages of 8 and 18 years. We looked at three groups: 1) an ethnic Danish group; 2) a group of children with a background as second- or third-generation immigrants; and 3) a group of children whose parents were refugees. On the basis of previous findings, we hypothesized that immigrant children and refugee children would have more somatic and psychological difficulties (both internalizing and externalizing) than children of Danish origin. Furthermore, we expected refugee children to be more burdened by internalizing mental problems than immigrant children were.

## **Methods**

### *Sample*

The total sample consisted of 332 children between 8 and 18 years old. Data were collected from different sources. The first source was the OASIS Treatment and Counselling for Refugees, Copenhagen, Denmark. OASIS contacted 51 refugee families with permanent residence in Denmark who

had been referred for trauma treatment at the center. The contact was established by mailing permission forms to the families in their native language. The families were selected on the basis of their geographic placement (i.e., living within a radius of approximately 50 km from Copenhagen) and on whether they had children between the ages of 11 and 16 years. The parents were asked to give written consent that allowed their children to fill out a few questionnaires in the classrooms at their schools. Parents of 15 children allowed their children to participate. We included these children's classmates in the sample group that included immigrant, Danish, and other refugee children. The next step was to contact the children's respective schools and obtain permission to perform the data collection in their classrooms. In addition to the 15 children previously described, we included another group of refugee children from identified refugee countries in accordance with a formal list obtained from the Danish Foreign Ministry. Finally, we compiled data from children who attended the "homework cafés" run by the Red Cross in Denmark, which are exclusively frequented by immigrant and refugee children. These children received consent forms to be filled out by their parents. The data collection was carried out in Danish. In the classrooms, a teacher was present; in the homework cafés, the supervising teacher was present together with the researchers. The research project was described to the children, and they were free to ask questions about the questionnaires. The questionnaires were read aloud to the children to secure their understanding. Children who had difficulty understanding the text could ask the researchers for assistance.

### *Outcome measures*

#### *Strengths and Difficulties Questionnaire (19;20):*

The youth self-report version of the SDQ was applied in the present study. This questionnaire has been found to have sound psychometric properties in both Westernized and non-Westernized countries (21-24). It consists of 25 items that can be scored as "Not true," "Somewhat true," and "Certainly true." The items are scored on five scales: 1) hyperactivity/inattention; 2) conduct disorder; 3) emotional problems; 4) peer problems; and 5) pro-social. Each of these scales contains five items; the hyperactivity/inattention and conduct disorder scales are combined into an externalizing scale, and the emotional and peer problems scales are combined into an internalizing scale (25). The children filled out the two-page version of the SDQ, but it turned out that they had difficulty reporting the impact of their symptoms (e.g., making conclusions about a generalized impact from the

types and numbers of symptoms present). Therefore only the answers from the first page of the questionnaire have been analyzed.

#### *Revised Children's Anxiety and Depression Scale (26):*

The Revised Children's Anxiety and Depression Scale (RCADS) consists of 47 items and measures (DSM-IV) symptoms of anxiety disorders and depression in children and adolescents. It is scored on a four-point scale (i.e., 0 = Never, 1 = Sometimes, 2 = Often, 3 = Always). It has satisfactory psychometric properties, with good internal consistency and adequate reliability and validity, and it has been tested in a Danish population (27). In the present study, the self-report child version of the RCADS was applied.

#### *Health Behavior in School-Aged Children Symptom Checklist (28-30):*

The Health Behavior in School-Aged Children Symptom Checklist is an eight-item symptom checklist that assesses how often the young person has suffered from different physical and nervous symptoms within the past 6 months. Good psychometric properties have been found for both one- and two-factor solutions. The one-dimensional scoring adds up to a total health complaint score that excludes sleep problems (28). The two-factor solution also includes a three-item psychological health complaint scale as well as a five-item somatic health complaint scale (30). Both of these models have been included as outcome measures in the present study.

#### *Statistical analyses*

All analyses were carried out with the use of SPSS Statistics software (version 20.0). The total sample consisted of 332 children. On the basis of information about their parents' migrant status, the children were classified into three broad groups. The Danish sample included children with two Danish parents (N = 148); the immigrant sample consisted of children with two immigrant parents (N = 81), whereas the refugee sample was comprised of children with two refugee parents (N = 67). Half of the immigrant group was made up of children with two Turkish parents (N = 41), with other large ethnic groups including Pakistani children (N = 13) and Filipino children (N = 7). Children of immigrants from Western countries (N = 7) and children of parents with different statuses (e.g., one immigrant parent and one refugee parent, one immigrant parent and one Danish parent) were excluded from all analyses (N = 24). Five children with missing values for their countries of origin were also excluded from the analyses.

With regard to the refugee children, the largest ethnic groups consisted of Iraqi children (N = 19), Afghan children (N = 11), and children from Palestine (N = 7). The remaining groups were composed of less than five children from each nationality.

Because the distribution of SDQ scores has been found to be skewed (25), the internalizing and externalizing scale scores were log transformed before they were used as continuous variables in the analysis of variance probability testing. The four problem scales (i.e., hyperactivity/inattention, conduct disorder, emotional problems, and peer problems) were used in logistic regressions, with appropriate cutoffs used to identify the 20% of the sample with the highest problem scores.

## Results

### *Demographic data*

A total of 296 children and adolescents were included in the study. They had a mean age of 13.2 years (range, 8 to 16 years), and 158 (53.3%) were boys. With regard to language use, 54.2% of the children reported speaking Danish only at home, whereas 19.4% reported that no Danish was spoken at home. Overall, significant age differences were observed among the three groups (Table 1); however, Bonferroni post hoc testing revealed that none of the intergroup comparisons were significant. No significant differences were observed among the groups with regard to gender, but, expectedly, large differences were observed with regard to language use among the groups. The refugee group had the highest frequency of speaking non-Danish languages only (48.5%).

**TABLE 1. Distribution of demographic variables for the total sample and for the Danish, immigrant, and refugee groups**

	Total sample	Danish	Immigrant	Refugee	P value
N	296	148	81	67	
Age (mean and standard deviation)	13.1 (2.2)	13.5 (2.1)	12.8 (2.3)	13.0 (2.3)	.04
Gender (male)	53.5%	57.1%	53.1%	44.8%	.25
Language at home (%)					<.000
Danish only	52.2%	98.0%	17.3%	10.6%	
Danish and another language	26.4%	2.0%	53.1%	40.9%	
Non-Danish language only	19.4%	0.0%	29.6%	48.5%	

Analysis of variance for the mean scores and chi-squared probability testing for the percentages were used

No significant differences were observed for any of the health complaint scale scores among the three groups (Table 2). However, borderline significance was observed for the somatic health complaint scale. However, this observation was the

opposite of what was expected (i.e., fewer somatic health complaints were reported by the refugee group, whereas it was believed that this group would have more such complaints).

**TABLE 2. Mean scores and standard deviations of the Health Behavior in School-Aged Children Symptom Checklist scale scores for the total sample and for the Danish, immigrant, and refugee group**

	Total sample	Danish	Immigrant	Refugee	<i>P</i> value
N	296	148	81	67	
Somatic health complaints	14.9 (5.5)	15.3 (5.3)	15.5 (5.2)	13.6 (6.0)	.07
Psychological health complaints	8.9 (3.4)	8.8 (3.3)	9.1 (3.4)	8.6 (3.7)	.65
Total health complaints	21.2 (7.5)	21.4 (7.4)	21.7 (7.3)	19.8 (8.0)	.26

Analysis of variance probability testing was used to compare the three ethnic groups

As shown in Table 3, no significant differences were observed for the continuous SDQ externalizing and internalizing scale scores.

**TABLE 3. Means and standard deviations for the Strengths and Difficulties Questionnaire internalizing and externalizing scale scores for the total sample and for the Danish, immigrant, and refugee groups**

	Total sample	Danish	Immigrant	Refugee	<i>P</i> value
N	296	148	81	67	
Internalizing	4.5 (3.3)	4.2 (3.4)	4.7 (3.1)	5.0 (3.2)	.12
Externalizing	5.0 (3.3)	4.7 (3.2)	5.6 (3.4)	5.0 (3.5)	.08

Analysis of variance probability testing was used for the log transformed internalizing and externalizing scores

Furthermore, Table 4 shows that no significant differences were observed for the above and below cutoffs for the SDQ emotional and hyperactivity scales.

**TABLE 4. Observed number of cases and percentages of cases rated on the peer problems, emotional problems, hyperactivity/inattention, and conduct disorders scales of the Strengths and Difficulties Questionnaire for the total sample and for the Danish, immigrant, and refugee groups**

	Total sample	Danish	Immigrant	Refugee	<i>P</i> value
N	296	148	81	67	
Peer problems	120 (40.5%)	53 (35.8%)	31 (38.3%)	36 (53.7%)	.04
Emotional problems	90 (30.4%)	42 (28.4%)	26 (32.1%)	22 (32.8%)	.75
Hyperactivity/inattention	93 (31.5%)	46 (31.3%)	25 (30.9%)	22 (32.8%)	.96
Conduct disorder	112 (38.0%)	43 (29.3%)	39 (48.1%)	30 (44.8%)	.008

The *P* values obtained via two-tailed Pearson chi-squared probability testing are shown

Alternatively, significant differences were observed for the SDQ conduct disorder and peer problems scales, with the most favorable outcomes seen among the Danish children. Post hoc testing revealed significant differences with regard to the

conduct scale scores of the Danish children and the immigrant children ( $P = .004$ ) and the Danish children and the refugee children ( $P = .026$ ). Significant differences were also found for the peer problem scores between the Danish children and the refugee children ( $P = .013$ ).

Overall, significant differences among the three groups were observed for the separation anxiety disorder scale and the obsessive-compulsive disorder (OCD) scale of the RCADS (Table 5).

**TABLE 5. Mean scores and standard deviations of the Revised Children's Anxiety and Depression Scale scores for the total sample and for the Danish, immigrant, and refugee groups**

	Total sample	Danish	Immigrant	Refugee	<i>P</i> value
N	296	148	81	67	
Generalized anxiety disorder	4.7 (2.9)	4.5 (3.0)	4.6 (3.0)	5.0 (2.9)	.53
Separation anxiety disorder	1.9 (2.4)	1.6 (2.2)	1.8 (2.0)	2.6 (3.1)	.02
Social phobia	8.3 (4.7)	8.7 (4.7)	7.7 (4.7)	8.2 (4.7)	.33
Panic disorder	3.4 (3.5)	3.2 (3.2)	3.2 (3.4)	4.3 (4.2)	.09
Obsessive-compulsive disorder	3.4 (3.0)	2.9 (2.9)	3.7 (2.9)	4.3 (3.2)	.007
Major depressive disorder	5.4 (4.1)	5.3 (4.3)	5.5 (3.5)	5.6 (4.2)	.85
Total anxiety score	21.7 (13.1)	20.9 (12.7)	21.0 (12.9)	24.3 (13.9)	.18
Total Revised Children's Anxiety and Depression Scale score	27.1 (16.0)	26.2 (15.7)	26.5 (15.2)	29.8 (17.3)	.28

Analysis of variance probability testing was used to compare the three ethnic groups. The total anxiety score includes the five anxiety scales, and the total Revised Children's Anxiety and Depression Scale score includes all six scales

The most favorable outcomes were observed among the Danish children, and the least favorable outcomes were seen among the refugee children. Bonferroni post hoc testing revealed significant differences between the Danish and refugee groups with regard to their OCD scale scores ( $P = .007$ ) and their separation anxiety disorder scale scores ( $P = .017$ ).

## Discussion

### *Subjective health complaints among immigrant and refugee children*

Our first hypothesis was that immigrant and refugee children would experience more somatic and psychological complaints than children of Danish origin. We tested this hypothesis with the use of the Health Behavior in School-Aged Children Symptom Checklist to assess somatic, psychological, and overall complaints. Much to our surprise, we found fewer differences than expected. In fact, we found no statistically significant differences among the groups. This finding is partly supported by the work of Nordahl Jensen and Holstein (12), who reported no differences between immigrants and ethnic

Danish youth on the somatic complaints subscales or the total scale. They did, however, report that immigrant boys and girls in general experienced a higher degree of nervous symptoms as compared with ethnic Danish youth. One explanation for the lack of differences among the groups in our study may be found in the use of a self-report. It is plausible that, had we applied a multi-informant approach, our results would have been different. Another reason for these small differences may be the limited size of the sample, or it may be found in the applied measure. The Health Behavior in School-Aged Children Symptom Checklist consists of only eight items. Despite the fact that this tool demonstrated adequate psychometric qualities, it may not pick up on mental-health-related complaints to the same degree that a more specialized assessment tool would.

#### *Mental health complaints among immigrant and refugee children*

To further explore our hypothesis, we assessed the mental health of our sample by applying the SDQ. By applying this more refined measure to assess psychological difficulties, we found significant differences among immigrant children, refugee children, and Danish children. The immigrant children reported higher levels of conduct problems and the refugee group had higher levels of both conduct and peer problems as compared with Danish children. The significant conduct problems among the immigrant and refugee children may be reinforced by the fact that both immigrant and refugee families prefer to use their native languages at home, which gives rise to a lack of mastery of the Danish language. Among the immigrant children, 29.6% used no Danish at home; among the refugee families, 48.5% used no Danish at home. The lack of Danish language skills in these groups may cause misunderstandings and perhaps conflicts when these children are in contact with others (e.g., peers, teachers), thereby contributing to their elevated levels of conduct symptoms. In a study performed in London, Leavey and colleagues (16) already reported that not having English as a first language appears to be a significant risk factor for psychological stress for both refugee and migrant children.

We further explored differences in mental health status as measured by the SDQ scores. For all three groups, we found a minimum of 30% of youth scoring above the clinical cutoff. Although 27% of refugee children had previously been shown to meet case criteria (17), our numbers were surprisingly high for all three groups. This may in part be due to the samples being recruited from low-income areas of residence; such areas have previously been

associated with higher levels of mental health problems among youth (31). However, the SDQ is not based on the DSM-IV and therefore does not tap directly into anxiety and depression symptoms at a pathological level.

We then assessed internalizing mental health issues with the use of self-report measures that were based on the DSM-IV criteria via the use of the RCADS. Significant differences were observed in the refugee group with regard to separation anxiety disorder and OCD. Despite the face value of the symptom level indicating that refugee children experienced more anxiety than immigrant children, who in turn experienced more anxiety than Danish children, no significant differences emerged between the immigrant children and Danish children. The finding that refugee children experienced higher levels of anxiety supports the previous literature, which reported higher levels of emotional difficulties (32). A study by Montgomery and Foldspang (33) suggested that exposure to discrimination in Denmark is associated with internalizing behavior among refugee adolescents.

To the best of our knowledge, no other studies have assessed OCD symptoms in refugee children. However, studies of OCD symptoms in different ethnic groups may inform our understanding of the findings. For example, Williams and colleagues (34) reported that non-clinical black and Hispanic groups reported contamination symptoms at the same mean level as whites with clinical levels of OCD. It is thus likely that culture and ethnicity may play a role in the expression of OCD and related disorders; however, at present, little is known about these mechanisms (35). In the present study, the high level of OCD in the immigrant group - and, in particular, in the group of refugee children - may also be caused by ethnicity or unknown factors rather than a product of a true difference in anxiety level. Therefore, further studies are required to address this question.

Overall, our study has confirmed that children of refugee parents, as a group, have specific vulnerabilities when it comes to mental health issues. This is particularly striking because the majority of the refugee group in this study may be considered quite resourceful: these children actively sought assistance at homework cafés and were willing to participate in the study. However, the vulnerabilities may be caused by the fact that part of the sample of refugee children was recruited from a treatment center for traumatized refugees and therefore may have parents with mental health problems. It is not possible from the result of this study to reveal aggravating or improving factors that may affect the family conditions of these children, because the refugee children were not examined in

relation to whether their parents were or were not traumatized. This issue was discussed in an article by Daud and colleagues (36) that addressed resilience and vulnerability among refugee children of traumatized and non-traumatized parents. In that study, children without traumatized parents had more favorable values on the SDQ and other tests as compared with the group of children whose parents had been traumatized. The fact that children of refugees presented with more mental problems than the immigrant and Danish groups should encourage educational staff to be more aware of the backgrounds of ethnic minority children.

#### *Limitations of the study*

The largest limitation of this study is that our sample was a convenience sample. It was difficult to establish contact with the refugee group, which resulted in a very low response rate: only 15 parents (out of 51 invitations to participate) agreed to their children's participation. These parents were rewarded by means of a modest gift token (i.e., 20 Euros). The children from this part of the refugee sample (i.e., those recruited from OASIS) comprised what was likely the most burdened group, with parents who may still suffer from trauma. To expand the group, we included children of refugees who attended homework cafés and who were not in contact with the OASIS treatment centre, thereby adding a group of refugee children with unknown backgrounds.

The information in this study is based on the students' self-reported data. This gives rise to the question of whether these children were able to provide reliable data, particularly with regard to their background data. In a study undertaken by Nordahl and colleagues (37), the percentage of student–parent agreement about the language usually spoken at home was high. The proxy measure for ethnic background should therefore be considered robust. With regard to the self-reported data about possible psychological problems, we did not include the parents in the study, which is a limitation regarding the ability to obtain more detailed multi-informant data. However, even if a screening instrument such as the SDQ had been translated into many languages, there is scarce evidence to support its validity among cross-cultural populations. In addition, the refugee parents were very hard to enroll in the study. Other studies, such as the one by Daud and colleagues (36), have found that refugee parents felt the interview situation to be stressful. Including only a few parents would have compromised the generalizability of the study, which is why we opted for the use of self-report data. We may have found more significant differences if we had used a group of ethnic Danish

children from more advantaged backgrounds. Alternatively, our less advantaged sample should be considered a strength of the design, because it provides a community control sample that compares peers of different ethnicities who, in some respects, share the same living conditions. Other studies have shown that agreement among informants is low for children, parents, and teachers with regard to internalizing difficulties (38). This suggests that it is important to explore youth self-reports of subjective experience in further detail at it relates to internalizing symptoms.

Only a few children were less than 11 years old. The SDQ self-report is validated for children 11 years old and older; RCADS has been validated for the entire span of ages included in the study. To compensate for the possible influence of reading difficulty as it related to the understanding of the questionnaires, the questions were read aloud to the children during test administration, and administrators were circulating in the classrooms to allow the children to ask questions if they were in doubt.

#### **Conclusions**

Our study found some differences (but fewer than expected) among ethnic Danish, immigrant, and refugee children. There were more similarities than differences in these groups with regard to somatic complaints and mental health issues. To obtain a more in-depth understanding of the mental health differences involving conduct disorders, separation anxiety disorders, and OCD, further investigation is required.

#### **References**

1. Hjern A, Angel B, Jeppson O. Political violence, family stress and mental health of refugee children in exile. *Scand J Soc Med* 1998;26(1):18-25.
2. Crijnen AAM, Bengi-Arslan I, Verhulst FC. Teacher-reported problem behavior in Turkish immigrant and Dutch children: a cross-cultural comparison. *Acta Psychiatr Scand* 2000;102:439-44.
3. Fazel M, Reed, RV, Panter-Brick C, Stein A. Mental health of displaced and refugee children resettled in high-income countries: risk and protective factors. *The Lancet* 2012;379:266-82.
4. Grunnet H. Tal og fakta på udlændingområdet 2011. København: Udlændingestyrelsen 2012. ISSN-nummer:1902-0952.
5. Vollebergh WA, ten Have M, Dekovic M, Oosterwegel A, Pels T, Veenstra R, et al. Mental health in immigrant children in the Netherlands. *Soc Psychiatry Psychiatr Epidemiol* 2005;40(6):489-96.
6. Achenbach TM. Manual for the Child Behaviour Checklist/4–18 and 1991 profile. Burlington VT: University of Vermont;1991.
7. Achenbach TM. Manual for the Youth Self Report and 1991 profile. Burlington VT: University of Vermont;1991.



8. Janssen MM, Verhulst FC, Bengi-Arslan L, Erol N, Salter CJ, Crijnen AA. Comparison of self-reported emotional and behavioral problems in Turkish immigrant, Dutch and Turkish adolescents. *Soc Psychiatry Psychiatr Epidemiol* 2004;39(2):133-40.
9. Diler RS, Avci A, Seydaoglu G. Emotional and behavioural problems in migrant children. *Medical Weekly* 2003;133(1-2):16-21.
10. Stevens GWJM, Vollebergh WAM. Mental health in migrant children. *J Child Psychol Psychiatry* 2008;49(3):276-94.
11. Reinhardt C, Madsen M. Parents' labour market participation as a predictor of children's health and wellbeing: A comparative study in five Nordic countries. *J Epidemiol Community Health* 2002;56(11):861-67.
12. Nordahl Jensen H, Holstein BE. Sundhed og trivsel blandt indvandrere, efterkommere og etniske danskere i 5., 7. og 9. klasse (a Danish report based on a health survey of Danish school children from 2006) ISBN: 978-87-7899-166-9;2010.
13. Carlerby H, Viitasara E, Knutsson A, Gadin KG. Subjective health complaints among boys and girls in the Swedish HBSC study: focusing on parental foreign background. *Internat J Public Health* 2011;56(5):457-64.
14. Reed RV, Fazel M, Jones L, Panter-Brick C, Stein A. Mental health of displaced and refugee children resettled in low-income and middle-income countries: risk and protective factors. *The Lancet* 2012;379:250-65.
15. Bronstein I, Montgomery P. Psychological distress in refugee children: a systematic review. *Clin Child Fam Psychol Rev* 2011;14(1):44-56.
16. Leavey G, Hollins K, King M, Barnes J, Papadopoulos C, Grayson K. Psychological disorder amongst refugee and migrant schoolchildren in London. *Soc Psychiatry Psychiatr Epidemiol* 2004;39(3):191-95.
17. Fazel M, Stein A. Mental health of refugee children: Comparative study. *BMJ* 2003;327(7407):134.
18. Goodman R, Neves dos Santos D, Robatto Nunes AP, Pereira de Miranda D, Fleitlich-Bilyk B, Almeida Filho N. The Ilha de Maré study: a survey of child mental health problems in a predominantly African-Brazilian rural community. *Soc Psychiatry Psychiatr Epidemiol* 2005;40:11-17.
19. Goodman R. The Strengths and Difficulties Questionnaire: a research note. *J Child Psychol Psychiatry* 1997;38:581-86.
20. The YouthInMind. [Online Source] Available from: <http://www.youthinmind.info/>
21. Goodman R, Renfrew D, Mullick M. Predicting type of psychiatric disorder from Strengths and Difficulties Questionnaire (SDQ) scores in child mental health clinics in London and Dhaka. *Eur Child Adolesc Psychiatry* 2000;9:129-34.
22. Muris P, Mayer B, Meesters C. Self-reported attachment style, anxiety, and depression in children. *Social Behav Personality* 2000;28(2):157-62.
23. Muris P, Meesters C, Melick MV, Zwambag L. Self-reported attachment style, attachment quality, and symptoms of anxiety and depression in young adolescents. *Pers Individ Dif* 2001;30(5):809-18.
24. Muris P, Meesters C, van den Berg F. The Strengths and Difficulties Questionnaire (SDQ). Further evidence for its reliability and validity in a community sample of Dutch children and adolescents. *Eur Child Adolesc Psychiatry* 2003;12:1-8.
25. Niclasen J, Skovgaard M, Andersen AM, Sømshovd MJ, Obel C. A confirmatory approach to examining the factor structure of the Strengths and Difficulties Questionnaire (SDQ): a large scale cohort study. *J Abnorm Child Psychol* 2012;41(3):355-65.
26. Chorpita B, Yim L, Moffitt C, Umemoto LA, Francis SE. Assessment of symptoms of DSM-IV anxiety and depression in children: a revised child anxiety and depression scale. *Behav Res Ther* 2000;38:835-55.
27. Esbjørn BH, Sømshovd MJ, Turnstedt C, Reinholdt-Dunne ML. Assessing the Revised Child Anxiety and Depression Scale (RCADS) in a national sample of Danish youth aged 8-16 years. *PLoS ONE* 2012;7:1-5.
28. Ravens-Sieberer U, Erhart M, Torsheim T, Hetland J, Freeman J, Danielson M, et al. An international scoring system for self-reported health complaints in adolescents. *Eur J Public Health* 2008;18(3):294-9.
29. Hetland J, Torsheim T, Aarø LE. Subjective health complaints in adolescence: dimensional structure and variation across gender and age. *Scand J Public Health* 2002;30(3):223-30.
30. Haugland S, Wold B, Stevenson J, Aarø L, Woynarowska B. Subjective health complaints in adolescence: a cross-national comparison of prevalence and dimensionality. *Eur J Public Health* 2001;11(1):4-10.
31. Rodriguez JD, da Silva AA, Bettiol H, Barbieri MA, Rona RJ (2011). The impact of perinatal and socioeconomic factors on mental health problems of children from a poor Brazilian city: a longitudinal study. *Soc Psychiatry Psychiatr Epidemiol* 2011;46(5):381-91.
32. Fazel M, Stein A. The mental health of refugee children. *Arch Dis Child* 2002;87:366-70.
33. Montgomery E, Foldspang A (2007). Discrimination, mental problems and social adaptation in young refugees. *Eur J Public Health* 2007;18(2):156-61.
34. Williams M, Turkheimer E, Schmidt KM, Oltmanns TF. Ethnic identification biases responses to the Padua Inventory for Obsessive-Compulsive Disorder. *Assessment* 2005;12(2):174-85.
35. Matsunaga H, Seedat S. Obsessive-compulsive spectrum disorders: cross-national and ethnic issues. *CNS Spectr* 2007;12(5):392-400.
36. Daud A, af Klinteberg B, Rydelius P. Resilience and vulnerability among refugee children of traumatized and non-traumatized parents. *Child Adolesc Psychiatry Ment Health* 2008;2(1):7 doi:10.1186/1753-2000-2-7.
37. Nordahl H, Krølner R, Páll G, Currie C, Andersen A. (2011). Measurement of ethnic background in cross-national school surveys: Agreement between students' and parents' responses. *J Adolesc Health* 2011;49(3):272-7.
38. Rasmussen M, Due P. Skolebørnsundersøgelsen 2010. [Internet] Forskningsprogrammet for Børn og Unge Sundhed (FoBUS) 2011. Available from: <http://www.hbsc.dk/download/HBSC-Rapport-2010.pdf>

### Acknowledgements

Thank you to the refugee families and their children for helping us to carry out the screening necessary for this study. We would like to thank the headmasters and teachers at the participating schools as well as the volunteers from the Red Cross and the staff of Lejerbo (settlement assistance) for kindly allowing us to collect data in schools and homework cafés. Thank you to all of the children who provided us with the relevant data.

The Danish Data Protection Agency (<http://www.datatilsynet.dk/>) provided us with permission for the relevant data collection.

This project was made possible by the Rockwool Foundation, Aase and Ejnar Danielsen's Foundation, and Susi and Peter Robinsohn's Foundation.

In addition, we thank psychologist Jon Maaløv Holm for his assistance and the psychology students who assisted us with the data collection.