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ORIGINAL ARTICLE

Parental sociodemographic characteristics and mental health referrals by nurses in Swedish child health centres

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Abstract

Aim: To explore the influence of parents' socio-economic characteristics on child healthcare nurses' mental health referrals of 3- to 5-year-olds and also to test the association between mental health problems and referrals.

Methods: Repeated cross-sectional data including parents' Strengths and Difficulties Questionnaire (SDQ) assessments and referral data (psychologist and speech and language pathologist). Hierarchical regression was used to analyse whether parents' country of birth, education level, marital status and mental health problem scores (SDQ; total difficulties and impact scores) were associated with nurses' referrals.

Results: About 9% of mothers and 12% of fathers rated high SDQ scores (total difficulties) in their children. Approximately, 1% of the children were referred. The influence of parents' socio-economic characteristics on referral rates was not observed. However, for children with Swedish-born mothers, referral rates were significantly lower. Scores for SDQ total difficulties and impact were associated with the child's referral to specialists.

Conclusion: In general, parental sociodemographic characteristics do not influence Swedish child healthcare nurses' mental health referrals. Although there was a significant association between problem behaviour and referral, a disproportion between children rated with high SDQ scores (9% and 12%) and children referred to specialists (1%) should be addressed.

KEYWORDS
child health care, mental health, referrals, socio-economic characteristics, specialist services

1 | INTRODUCTION

The worldwide prevalence of child mental health problems is approximately 10%–20%.[1] Although many children suffer from mental health problems or mental disorders, only a small percentage receive mental health care.[2] Previous research has shown that mental health problems in adults often originate in childhood[3] and that mental health problems in children tend to persist into adolescence[4] or adulthood.[5] Besides reducing later mental health problems,[5] early intervention can also result in socio-economic benefits.[6,7] These

Abbreviations: CHC, child health care; SDQ, strengths and difficulties questionnaire.

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findings suggest that development and implementation of reliable methods to identify and address mental health problems in early developmental stages is a priority.

In Sweden, parents of all children up to 5 years of age are offered child health services delivered by nurses and family doctors at child health centres (CHCs). The child health services are part of the primary care, and the core of the child healthcare programme, including health and developmental check-ups and immunisations, is provided on a universal basis. Child health services are delivered by publicly and privately owned healthcare centres. It is free of charge and reaches virtually all families.[8] The programme includes both home visits and visits to the CHC. One goal of the child health services is to identify and, without delay, address problems related to the child's physical or mental health.[9] If a CHC nurse identifies symptoms of mental health problems in a child, parents should be offered targeted services. These include additional scheduled CHC appointments with the CHC nurse or family doctor, and/or referral to specialists for further evaluation or treatment. Delayed or atypical development in a child, not warranting further evaluation, is followed up by the CHC nurse. Advice and support are then directed in response to the family's specific needs. If needed, the nurse can facilitate contact with community resources addressing the targeted problems. The CHC nurse can also initiate contact with social services. Referral to social services is mandatory if maltreatment is suspected. Generally, children displaying communication and language delays should be referred to both speech and language pathologist and psychologist for consultation.[9] This relates to previous research showing that communication and language delays are sometimes early signs of developmental delay, intellectual disorders or autism spectrum disorder.[10,11] Moreover, children with developmental language delays have been shown to display more symptoms of mental health problems, such as social withdrawal, externalising and internalising problems than typically developed children.[12] However, if it is clear to the CHC nurse that the child's problems are strictly related to language and communication, the child is only referred to speech and language pathologist. According to national CHC guidelines,[9] children displaying symptoms of mental health problems, but without signs of communication and language problems, are only referred to psychologists.

Sweden is a multicultural society with many children living in single-parent families or with lower educated parents. Living under such circumstances can negatively affect children's mental health.[13,14] A Dutch study from the child preventive health care shows that despite an overrepresentation of high mental health problems in ethnic minority children, no ethnic differences regarding mental health referrals were seen.[15] However, ethnic minority children were less likely to receive mental health care than Dutch children.[16] The goal of the Swedish child health services is to reduce inequalities in child health by offering services to children with special needs.[8,9] Nonetheless, it is not known whether the decisions of Swedish CHC nurses' mental health referrals are influenced by sociodemographic factors. Consequently, this study's first aim was to explore the influence of parents' sociodemographic characteristics on CHC nurses' mental health referrals of 3- to 5-year-old children.

Key Notes

- We explored the influence of parents' sociodemographic characteristics and the mental health problems of children aged 3–5, on nurses' mental health referrals.
- About 1% of the children were referred; parents' sociodemographic characteristics had no influence, except for children of Swedish-born mothers who had lower referral rates.
- Disproportion between children rated with high mental health scores, 9%–12%, and children with mental health referrals, 1%, needs to be addressed.

Using valid and reliable screening instruments as part of routine health surveillance has been proposed to aid the identification of mental health problems,[17] and an important purpose with mental health screening procedures is to expedite referrals to specialists. Identification of concerns related to the child's health during an early phase of the problem development enables early intervention or treatment to improve child outcomes. Addressing the concerns early on can benefit the child in the immediate and in a long-term perspective. In relation to mental health, research has shown that emotional and behavioural problems left undetected tend to get worse or even become persistent.[5] Early identification and intervention can also generate socio-economic benefits.[6,7] The Strengths and Difficulties Questionnaire (SDQ)[18] is a well-known and much evaluated instrument to identify children who may have mental health problems or are at risk of mental health problems. In 2013, a structured method was introduced in a trial for CHC nurses to assess children's mental health problems through parent and teacher SDQ reports.[19,20] Because national SDQ norms were missing when the trial was launched, nurses were instructed to use a non-score-based method to interpret the parent and teacher SDQ assessments. The non-score-based method (described in the Methods section) developed by the trial researchers aimed to guide the nurse's referral decision-making by providing information about which children might need further evaluation. The nurses found the non-score-based method to interpret the SDQ assessments both useful and valuable since it provided them with a more thorough picture of the child's mental health.[21] However, the non-score-based method to interpret the SDQ has not been evaluated. Given that the SDQ is a widely used tool for the assessment of various mental health problems, the introduction of this method could potentially guide nurses in their mental health referral decisions. Hence, the second aim of this study was to investigate the association between SDQ scores and child healthcare nurses' mental health referrals, who are psychologist and speech and language pathologist.

2 | METHODS

2.1 | Data collection

We used data from the Children and Parents in Focus study hereinafter, the Focus study, including children aged 3–5 years in Uppsala, Sweden, in 2013–2016.[20] Data were collected annually through questionnaires completed by mothers, fathers and preschool teachers. All CHCs in the area participated, and nurses from these 19 CHCs recruited parents before their child's annual health check-up. All parents of children enrolled at the participating CHCs were asked to answer questions about their child's health and behaviour, and asked whether this information could be used also for research purposes. Three sets of SDQs were administered by post, one to each parent, and parents were then asked to give the teacher's SDQ to their child's preschool. Parents returned the completed questionnaires at their child's CHC health check-up. Questionnaires were also available in English, Arabic and Somali. The total participation rate in the Focus study was 48% in study year 1 (2013–2014), 45% in study year 2 (2014–2015) and 51% in study year 3 (2015–2016).[19] Ethics approval for the Focus study was provided by the Regional Ethical Review Board (Dnr 2012/437).

2.2 | Procedure at the CHCs

A new procedure to collect parent and teacher SDQs before 3- to 5-year-old's routine CHC visit was introduced.[19] Given that normative SDQ data for Swedish children aged 3-5 years were not available when data were collected, SDQ scores could not be used to determine whether a child should be considered as symptomatic. The nurses at the CHCs were therefore instructed to collect the SDQ from parents at the visit and to review the questionnaire using a non-score-based method to interpret the results. The method was developed for the nurses' convenience and comprised a transparent colour-coded overlay. The overlay indicated items with high scores in two problem areas: peer and social difficulties and/or behaviour and emotional problems. Nurses were informed that the SDQs should only serve as a discussion document at the visit, and instructed that if the overlay indicated problems in a child (many items with high scores), a more in-depth discussion with the parent regarding the child's difficulties was desired. Based on that dialogue, the nurse, together with the parent, was to decide if a mental health referral to specialist care was indicated. Nurses were instructed about the importance of addressing the first question on the impact supplement of the SDQ,[22] stating whether the informant believes the child has problems or perceived difficulties. Sex- and age-specific SDQ norms and cut-off values for Swedish 3-, 4- and 5-year-olds, derived from the Focus study, were published in 2020.[14] Cut-offs, 90th percentile, for girls were 12 for 3-year-olds, 11 for 4-year-olds and 10 for 5-year-olds; and for boys were 13 for 3-year-olds, 13 for 4-year-olds and 12 for 5-year-olds.

2.3 | Participants

This study used a repeated cross-sectional design, meaning that a child could be present at 1–3 time points, since questionnaires could be filled in at 3, 4 and 5 years. Specifically, we included parental ratings and excluded teacher ratings, $n = 4979$, since we were interested in parental ratings.

During 2013–2016, a total of 12,302 parental questionnaires were collected at the CHC health check-up. These comprised 6553 responses from mothers and 5749 responses from fathers, with complete SDQ data. Thereafter, 298 responses from mothers and 301 from fathers were excluded due to missing data on sociodemographic characteristics (see below). Furthermore, 345 ratings from mothers and 298 ratings from fathers were excluded, as mental health referral data were missing for their children ($n = 233$). To reduce the risk of pure communication and language delays as a confounder, children referred only to speech therapist, and language pathologist meaning not displaying symptoms of developmental or emotional problems, were also excluded. This resulted in an additional number of 70 mother ratings removed, regarding 49 children, and 58 father ratings, regarding 41 children. Thus, the final analytical sample comprised ratings from 5840 mothers on 4318 children and 5092 ratings from fathers on 3746 children. A total of 1175 ratings were from only mothers, 427 were from only fathers and 4665 ratings were from both mothers and fathers.

2.4 | Measures and variables

2.4.1 | Referrals

The main outcome of this study was the child healthcare nurses' mental health referral variable. Data related to referrals were obtained from the local child healthcare statistic and information database in Uppsala County, 2013–2016.[23] The mental health referral variable was used as the dependent variable and categorised into child referred versus child not referred. In Sweden, parents are invited to their child's yearly check-up at the CHC about 3 weeks before their child's birthday. Thus, the category child referred included children who were referred to psychologist and speech and language pathologist or psychologist solely, within 1 month before or after the child's appointment at the CHC, and hence considered most likely linked to the CHC visit.

2.4.2 | Mental health problems

The Focus study questionnaires included the Swedish version of the Strengths and Difficulties Questionnaire (SDQ),[18] a valid, well-known and commonly used instrument for identifying mental health problems in children.[24] The SDQ, available in both parent and teacher versions, comprises 25 items covering the following subscales: emotional problems, conduct problems, peer problems,

hyperactivity and prosocial behaviour. Each SDQ item is measured on a 3-point scale, resulting in a score between 0 and 2. The main variable of interest for measuring mental health problems in this study was the SDQ total difficulties score. This score ranges between 0 and 40 points and is calculated by adding together the scores from the 4 problem subscales (all except prosocial behaviour). The SDQ total difficulties score was included in the analysis and used as a continuous independent variable. Furthermore, sex- and age-specific Swedish cut-offs established in 2019 were applied to describe whether the children scored above or under the cut-off of the total difficulties score, indicating the presence or absence of mental health problems, respectively.[14]

The extended version of the SDQ includes an impact supplement. The first question asks whether the respondent thinks the young person has a problem, regarding emotions, concentration, behaviour or social interaction with other people. If so, further questions follow about chronicity, distress, social impairment and burden to others.[22] This question on child SDQ impact score was included as an independent variable in our analysis and divided into no difficulties versus minor/definite/severe difficulties. Missing data on SDQ items were handled according to SDQ guidelines.[25]

2.4.3 | Sociodemographic variables

Sociodemographic data were collected from the study questionnaires. The independent variable parental country of birth was categorised into born in Sweden versus born outside Sweden. Parent relationship status was divided into cohabiting versus not cohabiting. The variable parent highest level of education was categorised into university versus high school or less. Mothers and fathers were analysed separately, regardless of their relationship status. If two parental ratings exist, they were both included. If only one parental rating existed, that was included and the other rating was excluded.

2.5 | Statistical analysis

Means, standard deviations, frequencies and proportions were used for descriptive purposes. The relations between sociodemographic variables and CHC nurses' mental health referrals were explored through multiple hierarchical logistic regression models. The models were performed in two blocks. First, sociodemographic variables, including parental country of birth, parental marital status and parental education, were entered. Second, the scores for SDQ total difficulties and impact were added to adjust the results for these variables and to separately explore their relation to the outcome. The outcome was a dichotomous yes or no variable, defined as at least one referral to psychologist and speech and language pathologist or psychologist solely within 1 month before or after the child's appointment at the CHC. Since previous research has shown that parents' SDQ assessment of their child may differ,[26] mothers and fathers were analysed in separate models.

Prior to computing the regression analyses, data were checked for intercorrelations between all independent variables. The intercorrelations should not exceed 0.70, which they did not in our data set. The results of the regression analyses are presented as odds ratios (OR) along with respective 95% confidence intervals (CIs). To indicate statistical significance, p-values < 0.05 were used. All analyses were performed in the IBM SPSS Statistics for Macintosh, version 27.0 (IBM Corp.).

3 | RESULTS

3.1 | Sample descriptive

According to the 5840 ratings from the mothers and the 5092 ratings from the fathers, most parents were born in Sweden and were married or cohabiting (Table 1). A larger proportion of mothers than fathers were single (5.5% vs. 2.6%) and had a college or university education (77.8% vs. 68.4%). Almost 17% of the ratings indicated that the child was having difficulties regarding emotions, concentration, behaviour or social interaction with other people according to the SDQ impact score. A minority of the children were referred to psychologist and speech and language pathologist or psychologist solely: 77 children of the responding mothers and 66 children of fathers (1%)(Table 1).

3.2 | Parental sociodemographic and CHC nurses' mental health referral

The results from the hierarchical logistic regression models showed that parental country of birth was related to the child being referred by CHC nurses to specialist care (Table 2). More specifically, mothers who were born in Sweden were less likely to have their child referred to psychologist and speech and language pathologist or psychologist, compared to mothers born outside Sweden (OR = 0.36, Block I, in Table 2). When the results were adjusted for the SDQ total difficulties score and impact score, this relation remained significant (OR = 0.39, Block II, in Table 2). No significant differences were found in fathers regarding country of birth. Parental marital status and education showed no relations to the outcome.

3.3 | Mental health problem scores and CHC nurses' mental health referral

A higher SDQ total difficulties score according to both mothers' (OR 1.18) and fathers' (OR 1.14) ratings was associated with a higher probability of the child being referred to mental health specialist care (Table 2). Moreover, having minor/definite/severe difficulties

TABLE 1 Parental sociodemographic characteristics, child mental health problems and referrals to psychologist and speech and language pathologist or psychologist

Variables	Mothers' ratings, *n* (%) (*n* = 5840)	Fathers' ratings, *n* (%) (*n* = 5092)
Parental country of birth		
Sweden	4989 (85.4)	4400 (86.4)
Other	851 (14.6)	692 (13.6)
Parental marital status		
Single	320 (5.5)	134 (2.6)
Married/cohabiting	5451 (93.3)	4906 (96.4)
Living apart	58 (1.0)	41 (0.8)
Other[a]	11. (0.2)	12 (0.2)
Parental education level		
Not completed primary school/primary school	100 (1.8)	124 (2.4)
Upper secondary school/training school	1194 (20.4)	1485 (29.2)
College/university degree	4546 (77.8)	3483 (68.4)
Child mental health problems	**M (SD)**	**M (SD)**
SDQ total score	5.86 (4.16)	6.42 (4.25)
	***n* (%)**	***n* (%)**
Child mental health problems[b]		
Above cut-off	541 (9.3)	616 (12.1)
Below cut-off	5299 (90.7)	4476 (87.9)
Child SDQ impact score		
No difficulties	4854 (83.1)	4261 (83.7)
Minor/definite/severe difficulties	986 (16.9)	831 (16.3)
Referrals		
Child referred to a language pathologist and/or psychologist	71 (1.2)	66 (1.3)
Child not referred to language pathologist and/or psychologist	5769 (98.8)	5026 (98.7)

[a]For example divorced or separate.

[b]Cut-offs, 90th percentile, for girls: 12 for 3-year-olds, 11 for 4-year-olds and 10 for 5-year-olds; Cut-offs, 90th percentile, for boys: 13 for 3-year-olds, 13 for 4-year-olds and 12 for 5-year-olds.

according to the SDQ impact score was associated with a higher probability of the child being referred by CHC nurses to mental health specialist care, according to both mothers' (OR 3.08) and fathers' (OR 4.49) ratings.

4 | DISCUSSION

This study aimed to explore the influence of parents' sociodemographic characteristics on CHC nurses' mental health referrals of 3- to 5-year-old children to specialists and to assess the association between SDQ scores, both total difficulties score and impact supplement and the child being referred to specialist services. The results showed that parents' sociodemographic characteristics did not have an impact on CHC nurses' mental health referrals, except for the mothers' country of birth. Furthermore, the results showed associations between higher SDQ total difficulties scores and the SDQ impact score, and the child being referred to psychologist and speech and language pathologist or psychologist solely.

Leaving aside the mothers' country of birth, the findings showed that nurses' decisions regarding mental health referrals were not linked to parents' sociodemographic characteristics. This result was in line with Swedish law, stating that health care shall be provided on equal terms to all people.[27] It was also in line with the Swedish child health services' ambition to deliver services on equal terms to all families.[8] Furthermore, our results suggested that single and parents with lower education were not treated differently, in terms of lesser access to mental health specialist services. However, the finding was somewhat surprising, given the child health services' ambition to reduce health inequalities by varying the level of services depending on the family's needs.[8] According to the national child healthcare programme, targeted services, such as more CHC visits or referrals to specialists, should be directed to such families with lower sociodemographic status. Lower sociodemographic status was associated

TABLE 2 Multiple hierarchical logistic regressions for associations between parental sociodemographic characteristics and referral to psychologist and speech and language pathologist or psychologist, adjusting for child SDQ total and SDQ impact scores

	Mothers' ratings ($n = 5840$)	Fathers' ratings ($n = 5092$)
Independent variables	**OR (95% CI)**	**OR (95% CI)**
Block I		
Parental country of birth		
Outside Sweden (ref)		
Sweden	**0.362 (0.217–0.603)**	0.700 (0.371–1.321)
Parental marital status		
Single/living apart/other[a] (ref)		
Married/cohabiting	0.845 (0.361–1.978)	1.288 (0.312–5.317)
Parental education		
College/university (ref)		
Upper secondary school/training school	1.480 (0.866–2.529)	1.253 (0.744–2.109)
Not completed primary school/primary school	0.641 (0.087–4.741)	1.242 (0.295–5.237)
Block II		
Parental country of birth		
Outside Sweden (ref)		
Sweden	**0.393 (0.232–0.667)**	0.792 (0.411–1.527)
Parental marital status		
Single/living apart/other[a] (ref)		
Married/cohabiting	0.951 (0.393–2.299)	1.639 (0.387–6.943)
Parental education		
College/university (ref)		
Upper secondary school/training school	1.083 (0.618–1.898)	1.134 (0.664–1.935)
Not completed primary school/primary school	0.324 (0.042–2.508)	0.920 (0.209–4.042)
Child SDQ total difficulties score	**1.182 (1.124–1.243)**	**1.143 (1.081–1.208)**
Child SDQ impact score		
No difficulties (ref)		
Minor/definite/severe difficulties	**3.080 (1.691–5.609)**	**4.488 (2.418–8.331)**

Note: Bold numbers indicate significant ($p < 0.05$) findings.

[a]For example divorced or separated.

with more mental health problems, and lower education level and household income were associated with coercive parenting style in parents, and externalising behaviours in children.[28] In fact, a study on the same sample as the present study revealed that parents with lower education (high school or less) report more mental health problems in their children than parents with higher level of education.[14] These previous research findings indicate that a higher mental health referral rate could be expected among children with lower education or non-cohabiting parents, due to lower household income.

Our previous results also indicate that parents born outside Sweden report more problems than parents born in Sweden.[14] This was in line with our finding that children with mothers born in Sweden were less likely to be referred to mental health specialist services compared to children of mothers born outside Sweden. Interestingly, this association was significant also after accounting for SDQ score. Hence, it appeared that the nurses' decision to refer these children may have been affected by other factors than the parent SDQ reports. It was not known what happened during the CHC visit, but our previous study on nurses' perspectives on using the SDQ at the routine CHC visit revealed that nurses believed their discussions with parents became more structured after implementing the SDQ as part of the routine CHC visits.[21] The nurses felt their discussion with parents provided a greater overview of the child's health and situation. Furthermore, they believed that the SDQ got parents to reflect on their children's behaviour. A possible explanation for the higher probability of being referred by nurses among children with mothers born outside Sweden might therefore be that using the SDQ initiated discussions between the nurses and mothers,[21] which, in turn, revealed important information about the child that the mother had not recognised before. A possible explanation for why the association between the child being referred and

the mother being born outside Sweden was significant, also after accounting for SDQ score, could be that this group of mothers expressed more concerns about their child's behaviour when discussing the SDQ with the nurse at the visit, compared to when they rated their child's behaviour in the SDQ. If so, it is possible that this group of mothers found it easier to discuss their concerns with the nurse verbally, or perhaps even found it difficult to complete the SDQ items. In contrast to our results, Bevaart et al.[15] did not find differences in mental health referral rates for children of ethnic minorities compared to the native-born children in a Dutch healthcare setting. The CHC nurses in our study could therefore have decided to refer children of parents born outside Sweden either due to high SDQ scores, or as a way to be extra cautious, and not overlooking a child with heightened risk of mental health problems. Hence, it could be legitimate for nurses to refer children to avoid the risk of unwell children being unidentified. Other aspects to consider regarding the SDQ is that the measurement can perform differently between ethnicities, and comparisons between ethnic groups are proposed to be done cautiously.[29]

Although the nurses did not calculate SDQ scores, our result indicates that higher scores on the SDQ were associated with the child being referred to mental health specialist services, as psychologist and speech and language pathologist or psychologist. This result suggests that the purpose of the SDQ screening procedure, aiming to secure referrals for appropriate assessment and treatment of mental health problems, seemed to be achieved when using a non-score-based method. However, although 9% and 12% of the participating children were rated with SDQ scores above cut-off for having mental health problems, according to mothers and fathers, respectively, only 1% were referred to specialist services. There are several potential reasons for this: first, the nurses' decisions on referrals may be affected by their awareness of the limited resources within the specialist services. Knowing that a limited number of children will see the specialist services might result in a higher threshold for mental health referrals. Thus, the nurse might not consider the child's problems as being severe enough to prompt a mental health referral, and hence decide to recommend other forms of early intervention and support to the family from the CHC nurse or from the municipality instead of referring the child to mental health specialists.[9]

Second, parents may be unwilling to have their child referred. Although findings in a previous interview study showed that parents were positive about the use of SDQ within the child health services, they were also worried that the SDQ information would result in negative consequences for their child.[21] It is possible that parents had similar concerns regarding a referral for their child, that is fearing that a later confirmation of mental health problems would be detrimental to the child. To our knowledge, a non-score-based SDQ method has not been tested in relation to mental health referrals. However, the feasibility of a similar non-score-based method with CHC nurses using parent and preschool teacher SDQs was tested in Finland.[30] Parents and nurses found the SDQ helpful and increased the information and agreement about the child's mental health and need for support. Parents, however, claimed they missed having a more thorough dialogue with nurses regarding the child's situation.[30]

Father's country of birth, parental marital status and parental education did not predict nurses' mental health referral decision. This is contrary to the previous findings revealing that parents born outside Sweden and parents with lower education report more mental health problems in their children.[13,14] However, the cohort in this study is not representative to the general population in terms of education level, marital status and country of birth.[14] A more heterogeneous sample regarding these factors could potentially have resulted in further significant associations. Further research should continue to examine the impact of sociodemographic factors on referral decisions using a more diverse sample.

4.1 | Clinical implications

The Swedish child health services continuously strive to improve the quality of healthcare delivery by increasing the use of evidence-based methods. In Sweden, the child health services reach almost all 0- to 5-year-olds; therefore, they could play a pivotal role in identifying mental health problems in children. However, currently, no structured method is used to detect such problems at the routine health check-ups. Although the nurses did not have any scoring instructions or access to cut-offs, the results showed that high parent SDQ ratings were associated with the child being referred to a psychologist and speech and language pathologist or psychologist solely.

Using a non-score-based assessment with SDQ within the routine CHC could aid the CHC nurses' clinical assessment of the child and facilitate their decision on whether to refer the child. Thus, no clear conclusions of its efficacy can be drawn from the findings of this study. However, even if a significant association was established between problem behaviour and mental health referral, the disproportion between children rated with high SDQ scores and children referred to specialists needs to be addressed when using the method within routine child health services.

4.2 | Strengths and limitations

This study is based on repeated cross-sectional data, and no conclusion can be drawn regarding cause and effect. Also, the sample of parents participating in the Focus study was not representative of the average Swedish population, in terms of education level, country of birth and marital status; thus, the generalisability of the results is limited.[26] To diminish the selection bias, the CHCs were instructed to send out questionnaires translated into English, Arabic or Somali when needed; however, these were only answered by a few parents. It is possible that a more representative sample would have resulted in either more or less significant associations between parents' sociodemographic characteristics and mental health referrals. Other possible limitations were that all children, 3–5 years old, were analysed together in the regression models. The sample could not be stratified

on age, and no separate age-specific analyses could be computed because of the small number of children who were referred to speech and language pathologists and/or psychologists. Moreover, we did not have access to data on whether a child was already under specialist care, which could have influenced the mental health referral rate. The decision to exclude children solely referred to speech and language pathologist, to reduce the risk of pure communication and language delays as a confounding factor, may be questioned since these symptoms are sometimes early signs of developmental delay. However, calculations of mean scores within this specific group revealed that mothers' ratings, mean 6.13, and fathers' ratings, mean 7.18, did not differ significantly from those presented in this paper. Thus, including these children would most likely not affect the main findings.

The main strength of the study was the large sample of parental ratings of 3- to 5-year-old children. Another strength was the use of the Swedish version of the SDQ for the assessment of mental health problems, which has previously demonstrated good psychometric properties.[14] Furthermore, we used register-based data on mental health referrals. Thus, it can be concluded that the referrals were actually made, and these data are not biased by self-report.

5 | CONCLUSIONS

The results of this study suggest that, in general, sociodemographic factors did not influence Swedish CHC nurses' mental health referrals of 3- to 5-year-old children. However, children of Swedish-born mothers seemed less likely to be referred. Examining and gaining a greater understanding of mental health referral patterns are critical to counteract inequality in health care.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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