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Title:
Refugee children and their health, development and well-being over the first year of settlement: A longitudinal study

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Abstract

This study aimed to describe refugee children, their families and settlement characteristics, and how their development and social-emotional well-being change over time.

Methods

We conducted a longitudinal study of 61 refugee children (6 months - 15 years) in an Australian setting, over 2009 to 2013 and measured child, family and settlement factors as well as physical health, development and social-emotional well-being (Strengths and Difficulties Questionnaire, SDQ).

Results

Questionnaires were completed with parents of 54 (89%) children at year 2 and 52 (100%) at year 3. Forty percent of parents had low levels of education, 30% of fathers were absent on arrival, 13% of children were born in refugee camps, and 11% of parents self-disclosed previous trauma. Over time, there was increased parental employment (p=0.001), improved English proficiency for partners (p=0.02), and reduced stressful life events in the last 12 months (p=0.003). At years 2 and 3, parents were studying English (96%;76%), accessing government financial support (96%;100%) and primary health care (98%;87%), and feeling supported by their own (78%;73%) or the general (69%;63%) community. Fifteen percent of children had a chronic disease, and 13% were obese and overweight. In preschool children, 27% had mild developmental problems in year 2; all were normal by year 3. Abnormal

SDQ total difficulties scores reduced over time from 13% to 6% of children but this did not reach significance.

Conclusions

Most refugee children have developmental and well-being outcomes within the normal range by year 3. However, a minority of children have persistently poor social-emotional outcomes.

Key words:

Refugee child, development, social-emotional wellbeing, longitudinal cohort

What is already known on this topic:

1. Refugee children have well described physical health issues post arrival.
2. There is limited evidence about their health, development and social-emotional well-being trajectories in the first years of settlement.

What this paper adds:

1. The development and social-emotional health of resettled refugee children improves for the majority over 2-3 years.
2. Significant changes over time include reduced stressful life events, increased parental employment and improved English proficiency.
3. Opportunities exist to improve the post arrival experience of refugee children and families.

Introduction

The physical health of newly arrived refugee children is well documented, but there is limited evidence about their health, development and social-emotional well-being trajectories in the first years of settlement.[1-4] Routine child development screening in preschool refugee children has not been reported in community populations despite high quality evidence that intervention in early childhood can alter developmental trajectories and impact on long term health and well-being.[5] Studies on refugee school-aged children, largely retrospective, show low rates of academic or cognitive concerns and equivalent education outcomes to Australian born peers but do not measure social-emotional well-being unless children have mental health symptoms.[1,3,6,7] Risk factors for educational problems include bullying and racial discrimination, pre- and post-migration trauma, and immigration detention. Protective factors included high ambition, family cohesion, appropriate educational assessment and supportive peer relationships.[1,6]

The few longitudinal studies that measure individual, family and settlement factors have limitations including measurements undertaken several years after arrival, use of clinical samples, and self-reported well-being rather than standardised measures as their outcomes.[8-15] Exploring child, family and settlement factors shortly after arrival may identify modifiable risk and protective factors and opportunities for intervention to improve well-being.[16] Thus our study investigated the health, development and social-emotional well-being in refugee children over their first 2-3 years in Australia using a prospective longitudinal cohort study and describing child, family and settlement factors.

Methods

The establishment of this prospective longitudinal cohort study is described elsewhere.[17] In short, the research was embedded in an existing service model in Australia which screened almost all newly arrived refugee children.[17,18] Soon after arrival, Refugee Health Nurses and interpreters approached families seeking permission to recruit for research purposes and obtaining written consent.[17] Recruited between 2009 and 2013, children had physical health examinations performed by General Practitioners (GPs) shortly after arrival and were followed up and assessed by Refugee Health Nurses. Children aged 6 months–5 years had developmental screening using the Australian Developmental Screening Tool (ADST)[19]; children aged 4-17 years had social-emotional screening using the Strengths and Difficulties Questionnaire (SDQ)[20]. All families were assessed using a structured questionnaire and the Social Readjustment Ratings Scale (SRRS), which measures stressful life events in the last year.[21] In keeping with the underlying bioecological framework, potential risk and protective factors were classified into child factors, family factors and settlement factors (Table 1).[22]

Ethics

The study received ethical approval from the Human Research Ethics Committee Northern Hospitals Network, South Eastern Sydney Illawarra Area Health Service (HREC Ref No 09/163).

Data Analysis

Data were analysed using SPSS version 22.0 [IBM, USA].[17] Categorical data were described with frequency percentages. Continuous data are described with means and SDs, and effect sizes between groups were calculated as the mean difference divided by the pooled SD. For body mass index (BMI), P values for differences in frequency percentages from community norms were calculated using a z-test. The SDQ total difficulties score was treated as either continuous or categorical (normal/abnormal and borderline). Paired-tests were used to examine changes in SDQ scores in individual children over time. Children with an increase of 6-14 on the SDQ between year 2 and 3 were regarded as 'worse'; the rest were categorised as 'stable' or 'improved'.

With power set at 0.8, significance at 0.05, we required a sample size of 43-62 children with complete data to show that a 20-30% difference between SDQ scores at years 2 and 3 was statistically significant ie 25% abnormal at year 2 compared to 5% abnormal at year 3 using a McNemar's test for binary data.

Results

Recruitment and retention

Between May 2009 and April 2013, 228 refugee children aged <15 years arrived in the study region, 158 met the eligibility criteria and 61 (39%) aged 6 months to 15 years were recruited. Children retained were younger than those not recruited and lost to follow-but similar in terms of gender, region of origin and language spoken at home.[17] All recruited children were assessed at year 2 and 52

(85%) at year 3; they were followed for an average of 31 months (range 21-40 months).

Child, family and settlement factors

Structured questionnaires and the SRRS were completed with parents of 54 of 61 (89%) children at year 2 and parents of 52 children (100%) at year 3.

Child factors: The mean age was 6 years with males and females equally represented. Nine children (15%) had a chronic disease on arrival, defined as having either latent tuberculosis infection (LTBI), chronic hepatitis B virus (HBV) infection or schistosomiasis.

Family factors: Children's families originated from the South East Asian (28,46%), African (20,33%) and Eastern Mediterranean (13,21%) WHO regions. Family composition changed over the study period. On arrival 30% of children were living in a family with one parent absent, this being the father in 97%. Single parent families increased to 38% at year 3, largely due to marital breakdown. Five study children (13%) were born in a refugee camp and 4 (11%) parents spontaneously disclosed a history of trauma prior to arrival.

Settlement Factors:

Stressful life events in the last year: For families who had an SRRS at both years, those with moderate to high risk of stress-related illnesses decreased from 58% at year 2 to 33% at year 3 (P=0.003). Most children (67%) remained in the same risk group. Only 1 child's family moved from the low into the moderate to high risk range (Figure 1).

At year 2, the most common reported stressful life events within the previous year were changes in schooling, death of a spouse or close family member, major change in financial state or residence, gaining a new family member and marital separation. At year 3, the most common reported life events were changes in schooling and positive life events such as outstanding personal achievement.

Employment and study status: Parents arrived in Australia (n=88) with university (15;17%) or trade (3;3%) qualifications, secondary school (39;44%), primary school (26;30%), or no education (5;6%). Prior employment (n=87) was as a professional (28;32%), semiskilled or unskilled worker (35;40%), volunteer (8;9%) or unemployed (16;19%). Parental employment increased from 3% at year 2 to 12% at year 3 (p=0.001), predominantly semiskilled and unskilled employment. Only one family had 2 parents employed. (Table 2).

English language proficiency: Most parents were engaged in English language tuition at both years 2 and 3. At year 2, 10 (11%) parents reported English fluency and over half had great difficulty with English. At year 3, 24 (30%) reported they had gained some proficiency in English. Improvements in English language proficiency across time were significant for 29 (71%) partners (p=0.02) but not for 47 (78%) primary respondents, who were mostly mothers (p= 0.13).

Socio-economic resources: Almost all the families were receiving government financial benefits and living in rented accommodation at both years. Half of the families had a weekly income under AUD$800, which is about 30% below average weekly income in Australia[23].

Social inclusion and community support: The majority (>80%) knew someone in Australia before immigrating and felt supported by either their own ethnic (>73%) or the general community (>63%). Most parents reported that Australians displayed tolerance towards people of other religions, cultures and nationalities (>78%), although several volunteered anecdotes of their perception of discrimination related to property rental.

Access to health care: Most parents reported that their child had good access to primary health care and visited their GP every 1-4 months (Table 3). Emergency Department (ED) services were used appropriately for injuries (fractures, foreign body ingestion), acute infections (hepatitis A, viral myositis, skin infection), hypoglycaemic seizure and wheeze. Around half the children visited a dentist, 67% of them on one occasion. Of eligible pre-school children, only 2 (11%) had accessed an early childhood centre in the previous 4 weeks at year 2, and none at year 3.

Physical Health

All children had pathology investigations on arrival. Iron (16;26%) and vitamin D deficiency (10;16%) were the most common conditions. Four of 6 children with positive results for QuantiFERON-TB (QFN) received prophylaxis for LTBI based on their age, likelihood of close contact with an infectious TB patient, clinical and radiological findings. Three children had schistosomiasis and one had concurrent chronic HBV infection.

Weight status: BMI was within the normal range in most children at both timeframes (89%;79%) and did not change over time, with 2-6% underweight (BMI

<5th; CI 0-16.9%), 8-14% overweight (BMI >=85th and <95th; CI 0-27.4%) and 5-8% obese (BMI >= 95th centile; CI 0-19.6%).

Development:

The Australian Developmental Screening Test (ADST) was conducted in 15 (71%) eligible participants (aged under 5 years) at year 2 and 13 (81%) at year 3 (Figure 2). At year 2, 4 (27%) children were in the mildly abnormal range, but were in the normal range by year 3. At year 3, another 3 (23%) children tested scored within the mildly abnormal range. Children in the abnormal range were monitored by their GP.

Social-emotional well-being:

The SDQ was completed in ~90% (39;35) of eligible children at both years (Figure 3). At year 2, 5 (13%) children were in the abnormal range for total difficulties (mean score 8.54; SD 6.7), and over 20% of children were experiencing emotional symptoms and/or peer problems. By year 3, problems had decreased to below 10% (mean score 7.44; SD 6.2), the rate expected for the general Australian population, across all subscales (Table 4). Mean SDQ total difficulties scores did not differ from those in the general Australian population at both years (mean 8.2; SD 6.1; p= 0.75;0.47). Individual children had a small and statistically non-significant trend towards lower total difficulties, emotional symptoms and peer problems scores at year 3 as compared to year 2. SDQ scores remained normal for 18 (67%) children, improved over time for 6 (22%), remained abnormal for 2 (7%) and worsened for only 1 child.

Discussion

This study describes the prevalence of child, family and settlement factors that may impact on refugee children's health, development and social-emotional well-being over the first years of refugee settlement using standardised measures.

Child, family and settlement factors

There were many adverse family and settlement factors identified in this study that may impact on child development and social-emotional health.[9] Single parenthood, which was relatively high and increased over time, family disruption, high parental stress and economic insecurity are risk factors for adverse outcomes in refugee children.[9,11,12,24]

Stressful life events in the last 12 months were highly prevalent although they decreased over time. Early stress was related to events commonly associated with any migration, but some factors were more specific to the refugee experience, such as the death of a close family member.[9] This level of psychological distress is seen in other refugee studies but far higher than in the general Australian population.[11,25] Many reported outstanding personal achievement by year 3, echoing the resilience seen in other studies.[9,15] Importantly, all refugees included in this study had already had their claims for asylum resolved and received their permanent residency status before arrival, eliminating the distress associated with uncertain refugee status.[12]

Gaining stable, adequately-remunerated employment is a significant contributor to the successful resettlement of refugees.[9,10] Despite high employment levels in their home countries and aspirations for employment, employment was far lower than employment rates in the study region and the State average (93-94%), although many were studying.[26] The type of work obtained did not reflect the level of skills demonstrated by their prior employment, with most employed in predominantly semiskilled and unskilled work, whereas one third were previously in professional work. The consequences of 'occupational mismatch' and of failing to capitalise on people's skills and education are significant at an economic and individual level, impacting on family stress, income and parental mental health.[9,10,11,27]

Documented barriers to employment for refugees include poor English proficiency, non-recognition of overseas qualifications, requirements for local work experience, referees and driver's licence, reported discrimination, affordability of child care and poor mental health.[11,28] Most parents were engaged in English studies, demonstrating their recognition of English language proficiency as a pathway to future employment.[11]

Almost all respondents in this study were receiving government financial benefits. Half of children and young people of refugee background (0-17 years) live in relative poverty compared to 14.3% of other 0–17 year-olds in Australia and their families experience significant financial stress as they attempt to repay travel costs, living and education expenses, whilst also sending funds to relatives in their country of origin.[11,27,28]

Respondents in this and another local study reported feeling supported by their ethnic community and considered Australia a tolerant society, although subtle forms of discrimination may not have been detected by the questions asked.[11] However other studies of Australian adults born in non-English speaking countries revealed that nearly 20-40% had experienced discrimination in work, education, housing or with the police.[28] The impact of racial discrimination includes restricted access to employment and housing, reduced social interaction and self-esteem, and increased risk of physical and mental health problems in caregivers and their children.[9,12]

Several studies document low rates of hospital utilisation and multiple barriers to health care for refugees.[8] In our study all participants were eligible for government funded health care and demonstrated high levels of ongoing engagement with GPs and appropriate use of emergency medical services. The model of care established in the area promotes early engagement with local GPs and support through community Refugee Health Nurses.[18] Although language difficulties can prevent access to health care, this did not seem to operate in our study, suggesting that highly accessible models of care can overcome this potential barrier.[29] The poor engagement with early childhood centres represents an important lost opportunity for developmental surveillance and early intervention and requires further exploration.

Physical health outcomes

The physical health characteristics of this sample were similar to those in cross-sectional studies, with non-infectious conditions of iron and vitamin D

deficiency the most common conditions overall, and LTBI, schistosomiasis and chronic HBV infection the most common infectious conditions.[2, 30] The presence of a chronic disease on arrival was lower than in other studies, with no indication of long term impact on children's health within our follow-up period.[4,28]

The study children's BMIs were similar to other Australian children, 18% of whom are overweight and 7% obese. [31,32] They had lower BMIs than 337 sub-Saharan African children aged 3-12 years resettled in Victoria, 27% of whom were overweight or obese six years after arrival, and similar rates of undernutrition.[31] This may be explained by our sample having been in Australia for a shorter period, or other factors requiring further study.

Developmental and social-emotional outcomes

Most children in our study were performing within Australian developmental norms at follow-up. The main areas of concern were in the language and cognitive domains, as in other studies.[1] Developmental problems detected on screening were all in the mild range and, for those reviewed, were normal by the end of their follow-up period. This may be partly explained by Australia's refugee policy at the time of this study, which excluded any child with significant developmental disability.[33]

Similar to other refugee studies, most school aged children exhibited improvement in social-emotional well-being over time without specific psychological interventions.[9,13,34] Mean SDQ total difficulties score were similar to those in the general Australian population at both years.[34] Areas of concern related to emotional

symptoms and peer problems. Migrant and refugee children in the UK have also been reported to have significantly higher levels of peer problems using the SDQ as compared to their UK-born peers, yet better scores for prosocial behaviour and fewer conduct and hyperactivity problems.[35] No other studies with comparable populations used the SDQ as their outcome measure.[9]

Strengths and limitations

Since this is one of the first studies of this kind, the literature was unable to guide us in expected results or trajectories over time. There was also no way of predicting the number of child arrivals over the prospective study period or the capacity of interpreting service provision to the research team. Unfortunately, the power was insufficient due to small sample size for a number of reasons. Firstly, fewer children were initially recruited because 73 children were not approached to enrol in the study due to a shortage of appropriate language interpreters available to conduct the extensive research regimen (relevant for 52 children), families/children declined to participate (n=24), relocated out of the area (n=13), or could not be contacted (n=8).[17] Secondly, we analysed the two age groups as separate subgroups to present important age differences which further reduced the power. Thus only 28 older children had SDQ tests in both years, leaving the study under-powered. This illustrates the difficulties in conducting longitudinal studies in vulnerable populations, where the recruitment and follow-up costs are high and the challenges, such as age range of new arrivals, population mobility and interpreter availability, unpredictable.

A significant limitation of this study is that it excluded children who had been in immigration detention due to its links with an existing service model that specifically resettled refugees as opposed to asylum seekers. Evidence is accumulating that asylum seeker children (predominantly boat arrivals) who are subject to Australia's mandatory detention and offshore processing policies are likely to have far worse health and well-being outcomes than their refugee counterparts.[9,36-38] Studies evaluating outcomes of detained children using standardised measures and adjusting for length of time in detention are important and require a specific recruitment strategy.

Conclusion

This study is unique in describing refugee children's health, development and social-emotional well-being over the first years of settlement. Many refugee children have health and well-being outcomes within the normal range by the third year of follow-up. However, a minority of children have persistently poor social-emotional outcomes. The aim of future research using this data will be to identify which of the documented child, family and settlement factors are acting as risk and protective factors. Ideally this will guide policy-makers and settlement service providers to provide post arrival support that optimises children's outcomes.

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Conflicts of interest: none

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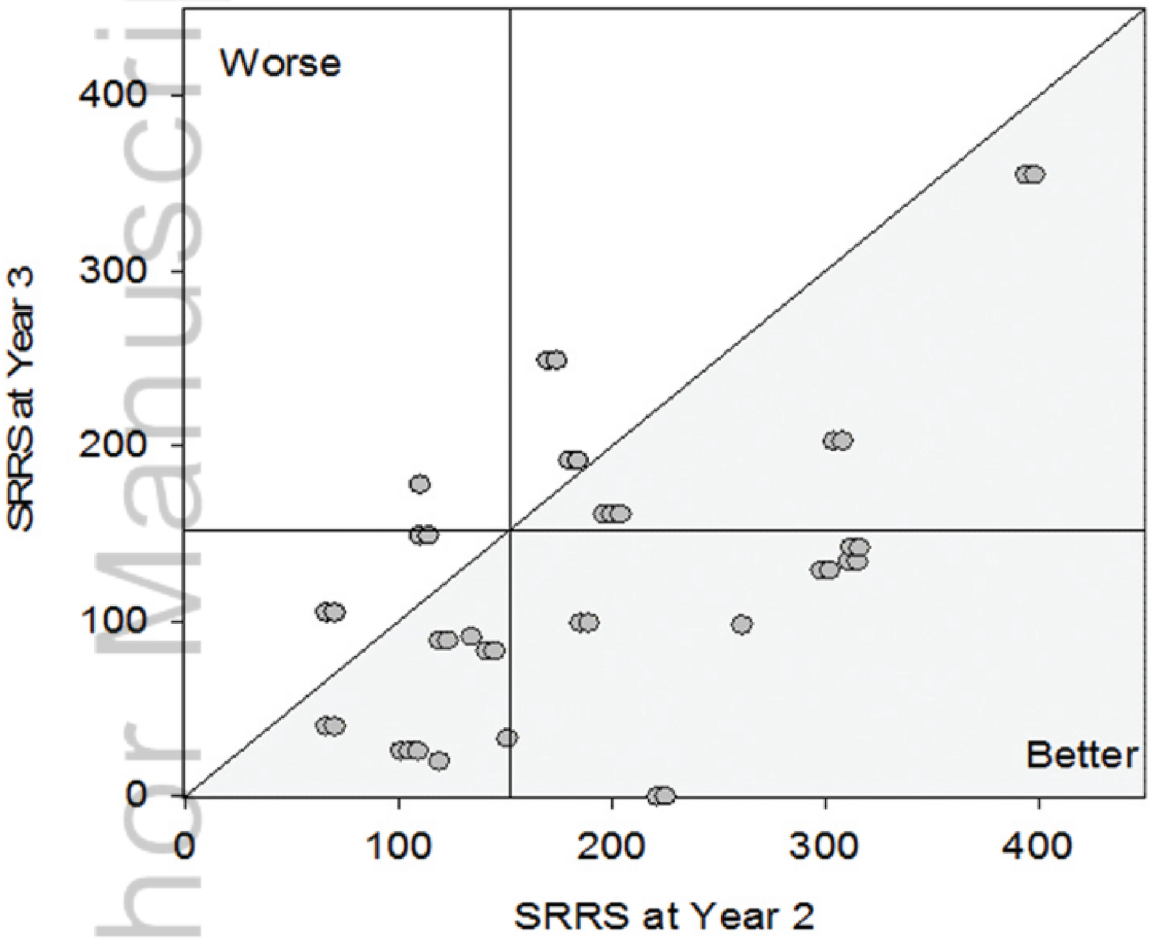
Figure 1: Changes in stressful life events for children between year 2 and year 3 (n=39)



Note: The vertical and horizontal lines indicate an SRRS score of 150, above which there is a moderate risk or high risk (50% - 80% chance) of developing a stress related illness. Dots to the left of the diagonal line indicate a child has worsening scores over time and those to the right of the diagonal line indicate improving scores over time (Rahe 1964).

figure 1.eps

Figure 2: Developmental (ADST) screening

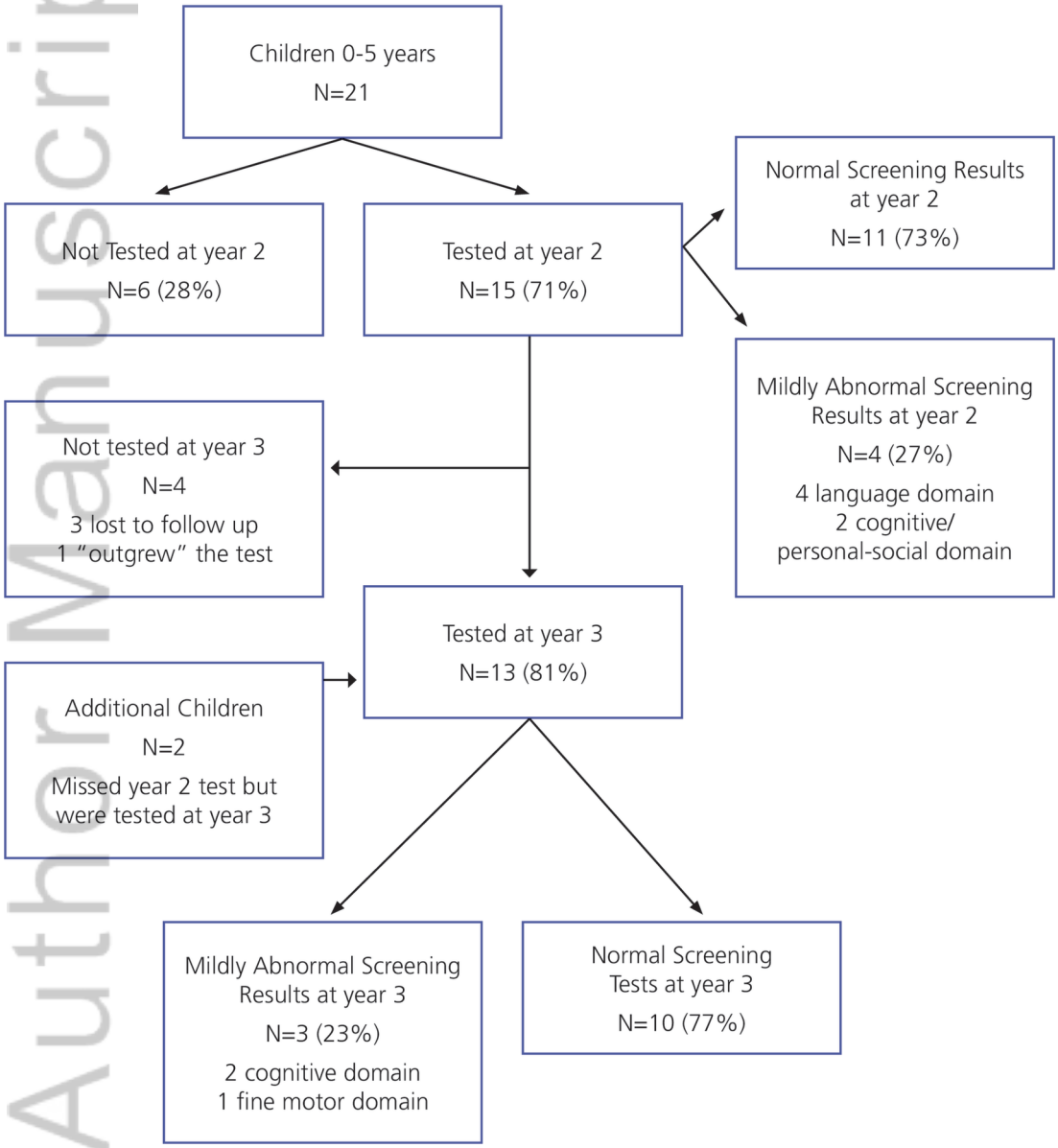
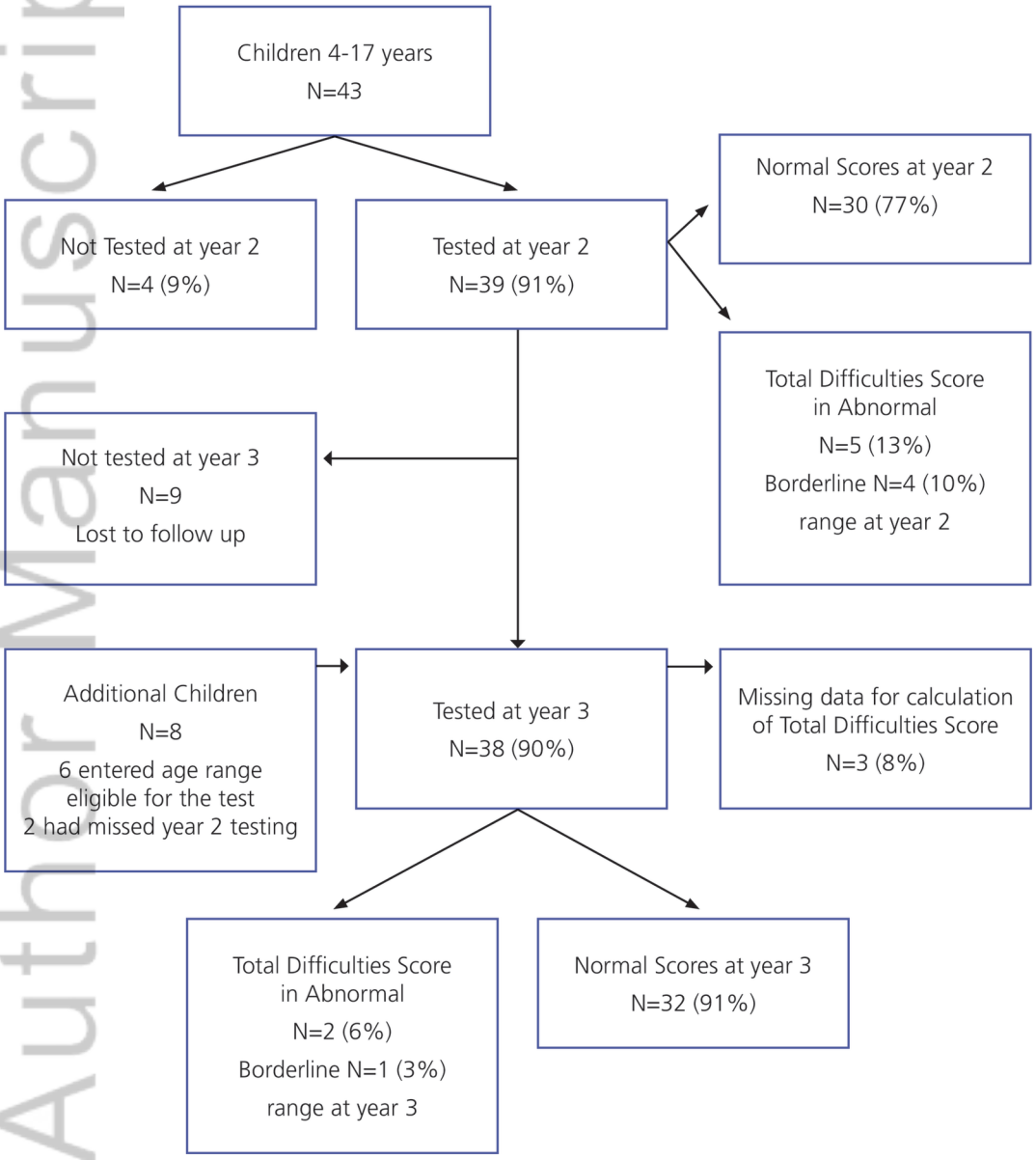


figure 2.eps

Figure 3: Social-emotional wellbeing (SDQ) screening



graphs_3.eps

Title page

Title: Refugee children and their health, development and well-being over the first years of settlement: a longitudinal study

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Ethics

The study received ethical approval from the Human Research Ethics Committee Northern Hospitals Network, South Eastern Sydney Illawarra Area Health Service (HREC Ref No 09/163).

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