

Reducing health disparities: Adherence to referrals for further diagnosis among asylum seeking children

Anat Amit Aharon RN, MHA, PhD 

Sackler Faculty of Medicine, Nursing Department, Tel Aviv University, Ramat Aviv, Tel Aviv, Israel

Correspondence

Anat Amit Aharon, Sackler Faculty of Medicine, Nursing Department, Tel Aviv University, P.O.B. 39040, Ramat Aviv, Tel Aviv 6139001, Israel
Email: anatamit@tauex.tau.ac.il

Abstract

Objective: Asylum-seeking children are most vulnerable to health problems and non-utilization of health amenities. The aim of the study was to compare adherence with referrals for further diagnostic tests among asylum-seeking children and native Israeli children.

Design: A retrospective cohort study.

Sample: The study was conducted among 3508 children born in 2016–2017, with two randomized sample groups: Israeli children ($n = 243$) and asylum-seeking children ($n = 271$). Data were retrieved from the children's medical files.

Measurements: Referrals for further diagnostic tests were defined as written referrals by a public health nurse or pediatrician. Data collected included the child's and mother's details, as well as data on referrals. A multiple logistic regression test was performed to detect risk variables for non-adherence to referrals.

Results: No differences were found between the groups regarding adherence to referrals for further diagnosis. Having medical insurance did not explain adherence to referrals. Asylum-seeking children have more need for further follow-up than do Israeli children.

Conclusion: Asylum-seeking children and Israeli children respond similarly to the preventive health services offered with equal accessibility. Public health nurses have an essential role in encouraging adherence to screening tests and to referrals for further diagnostic tests and in mitigating health disparities among asylum-seeking children.

KEYWORDS

asylum-seeking children, developmental, growth, physical disorders, health disparities, mother-child health clinics

1 | BACKGROUND

Asylum-seeking and refugee children are most vulnerable to health problems and non-utilization of health amenities (Kroening & Dawson-Hahn, 2019) and suffer from health inequities related to their parents' legal eligibility (Holmes et al., 2021). Moller et al. (2016) found that

refugee and asylum-seeking children have a lower uptake of vaccination and routine child health examinations than native-born Danish children. A study conducted in Israel found higher impairments in developmental milestones among asylum-seeking children compared to Israeli children but no differences in vaccination rate at age 30 months (Mor et al., 2018). A study in high-income countries reported

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2022 The Authors. *Public Health Nursing* published by Wiley Periodicals LLC.

that asylum-seeking children and refugees also suffer from greater mental health disorders due to traumatic life events involving their flight from their homeland (Fazel et al., 2012). Lane et al. (2018) reported higher chronic health conditions among refugee children compared to native-born Canadian children.

Timely routine examinations of well-child care by nurses or pediatricians are an important tool for achieving good pediatric health outcomes (Abdus & Selden, 2013). The American Academy of Pediatrics recommends 17 pediatrician visits for healthy children from birth until age 6 (The American Academy of Pediatrics & Bright Futures, 2017). In these visits the child is examined for primary and secondary preventive care, which includes vaccinations, physical examination, growth parameters, and monitoring for developmental milestones. Adherence to scheduled routine visits in early childhood may reduce hospitalization, prevent childhood diseases and injuries, improve a child's psycho-motor skills, as well as improving parenting skills (Chung et al., 2006). Diagnosis and therapeutic interventions in early childhood are most effective in improving the health outcome and quality of life of the child in maturity (Riverin et al., 2015). Nevertheless, there is evidence of low asylum seeker and refugee parent adherence to referrals for further diagnosis, with a wide range of influencing factors, for example, low socio-economic status, lack of health insurance, cost of consultations, undocumented status, cultural disparities, lack of awareness, low health literacy (Alwan et al., 2020), and language disparity (Bischoff et al., 2003; Guerrero et al., 2018). Lack of health insurance seems to be an essential barrier to receiving health amenities. Willen (2012) found that although 76% of the foreign community in Israel reported being familiar with health insurance in their homeland, only 43% of parents reported that their child had been registered for health insurance at some point in time and only 32% reported that their child currently has health insurance. In the US, undocumented immigrant children (e.g., asylum seekers) have five times the risk of having no health insurance compared to non-immigrant children. This factor has an essential impact on low seeking and under-utilization of healthcare treatment. Moreover, immigrant children reported being twice as likely to be in poor health condition compared to native children. This discrepancy grows with the children's age (Khullar & Chokshi, 2019). Unquestionably, early childhood monitoring for health problems (physical or growth and developmental) improves the health-related outcomes of refugee and asylum-seeking children. This results in mutual benefits for both the foreign community and the state (Kroening & Dawson-Hahn, 2019).

1.1 | Preventive health services in Israel

Preventive health services in Israel are provided according to the Ministry of Health policy at mother-child health clinics (MCHCs) with nationwide services and under the National Health Insurance Law, 1995. According to the current policy, a child should visit a MCHC 10–12 times during the first 6 years of life. All visits include observation by a public health nurse who is in charge of the vaccination program, anthropometric measurements, development milestone

screening tests (STs), nutrition guidance, anticipatory parental training, and health promotion programs (Rubin et al., 2017). Pediatricians examine the child at age 2 months, 9 months, 18 months, and 5 years. Pediatricians concentrate on physical STs, "head-to-toe examinations" (Turner, 2018), to detect physiological medical problems. When a suspicion of physical, growth, or developmental disorder is discovered by a nurse or pediatrician at the MCHC, the child is referred to the HMO where he or she is insured, for further diagnosis and treatment. It is estimated that 95% of all children born in Israel are registered in MCHCs (Moshe, 2017).

The services provided at MCHCs are universal and free-of-charge, unrelated to one's health insurance (Rubin et al., 2017). Nevertheless, curative health services in Israel are provided subject to personal health insurance. Under the National Health Insurance Law, all citizens in Israel have health insurance and may receive medical treatment from one of the HMOs. Children of foreign workers and asylum seekers are not covered by this health insurance and are advised to purchase private or public health insurance.

1.2 | Children of asylum seekers and foreign workers living in Israel

The foreign community in Israel includes sub-communities such as asylum seekers and foreign workers. It is estimated that 35,000 foreign workers live in Israel's second largest city, including 3700 children aged 0–6. Most of the children (76%) are asylum-seeking children for parents who fled from their homeland of Eritrea, where their life was in danger. Fewer than 70 asylum-seeking families registered in MCHCs are from Sudan (Nehama, 2020). Most of the children live in conditions of low socioeconomic status, poverty, and insecurity (Moshe, 2017). Although children in the foreign community are not eligible for comprehensive curative health services, the State of Israel allows these children to receive preventive medical services in MCHCs, based on a comprehensive worldview of public health. Thus, children in the foreign community have equal access to preventive medical services as do Israeli children. Parents of young children are entitled to purchase health insurance through one of the HMOs operating in Israel at a cost of \$35 per month per child (a very low fee for health insurance in Israel) paid only for the first two children. There is no fee for the third child. Children for whom their parents purchased health insurance are entitled to the full health services provided at the HMO, similar to Israeli children (Moshe, 2017). Nevertheless, only 35%–40% of foreign children have full health insurance. Children who do not have health insurance in one of the HMOs have difficulty receiving health amenities for acute and chronic illness, including child development treatments. Their medical care depends largely on volunteer health organizations with tenuous treatment and facilities (Rubin et al., 2017). In 2008 the Ministry of Health, in cooperation with "Terem medical services" (a network of public clinics operated by the NGO sector), established a humanitarian clinic for patients who have no official standing. This clinic operates emergency care and basic medical treatment for the foreign community for a very low fee. Some of the medical



treatments depend on volunteer physicians and nurses (Rubin et al., 2017).

The aim of the current study was to examine adherence to referrals by MCHCs for further diagnostic tests due to suspicions of developmental, growth, and physical disorders after routine STs, comparing asylum-seeking children with Israeli children.

2 | METHODS

2.1 | Design

A retrospective cohort study among children born in 2016–2017 and living in the second largest city in Israel.

2.2 | Sampling

The data were collected from the computerized medical files of children registered at four MCHCs, from January to March 2020. At this time, children born in 2016–2017 should have had 9–10 visits to public health nurses at MCHCs, followed by three full examinations by a pediatrician (at age 2, 9, and 18 months). The four MCHCs were chosen because they service asylum seeker and foreign worker families and Israeli families. No other MCHCs in the city serve asylum seekers. Overall, 3508 children were registered in those four MCHCs, among them 1810 (51.6%) Israeli children, 1299 (37.0%) asylum-seeking children, and 399 (11.4%) children of foreign workers. This study focused on asylum-seeking children compared to Israeli children.

All the medical files in these four MCHCs were reviewed in order to identify children with referrals by nurses or pediatricians for further diagnostic tests. Among the Israeli children, 649 (35.9%) had referrals for further diagnostic tests and among the asylum-seeking children, 794 (61.1%) had such referrals. Of all the children who had referrals, a representative sample was calculated using a G*power calculator (Faul et al., 2009). The input parameters for regression logistics were: two-tailed, $\alpha = 0.05$, and power = 0.80. The size of the calculated sample was a minimum of 232 children for each group. The sample was randomly selected and the final sample included 243 Israeli children and 271 asylum-seeking children.

2.3 | Measures

Referral for further diagnostic tests was defined as a written referral by a nurse or pediatrician at any time during 2016–2019 (before the study began). During the data collection, reasons for referral were categorized by growth, developmental, or physical reasons. If a child had more than one referral, the earliest referral was considered.

Data collected included the referring professional (pediatrician/nurse); the reason for referral (physical problem/suspicion of growth disorder/ suspicion of developmental disorder); parent adherence to the referral (yes/no); outcome of the further diagnostic tests

(yes/no further follow-up needed); and duration of treatment at the MCHC from the time of referral until conclusion of treatment. In addition, the child's details, including: gender, the delivery process (vaginal, caesarian section, or complex), infant born with medical problem (yes/no), number of children in the pregnancy, and having medical insurance (yes/no); and the mother's details, including: mother's age, mother's citizenship (Israeli citizen/asylum seeker), education level (in years), length of pregnancy (in weeks), marital status (married/not married), and number of children in the family.

2.4 | Analytic strategy

A comparison between Israeli children and asylum-seeking children was performed with χ^2 and *t*-test analysis. Three multiple logistic regression models were performed. The dependent variable was adherence/ non-adherence to the referral. The first multiple logistic regression model was conducted with the entire research sample to identify the probability of adherence to referrals among the entire sample. The second logistic regression was conducted among the group of Israeli children and the third among the group of asylum-seeking children. The odds ratio (OR) was calculated and values of $p < .05$ were considered significant. Analyses were performed using SPSS version 27.

2.5 | Ethical considerations

The study was approved by the Ethics Committee for research at the university (#12/2018).

3 | RESULTS

Altogether, 514 children were included in the sample (243 native Israeli children and 271 asylum-seeking children), all born in Israel. A comparison between the groups' characteristics is shown in Table 1. Asylum-seeking children more than Israeli children were born in a complex labor process (41.7% vs. 30.0%, $p = .006$) and had less medical insurance than the Israeli children (45.7% vs. 100%, $p < .001$). Asylum-seeking mothers were statistically significantly younger than Israeli mothers ($M = 32.2$, $SD = 4.89$ vs. $M = 35.1$, $SD = 5.54$, $p < .001$), had a lower level of education ($M = 7.38$, $SD = 3.53$ vs. $M = 13.23$, $SD = 0.20$, $p < .001$), and the length of their pregnancy in weeks was longer ($M = 39.6$, $SD = 2.45$ vs. $M = 38.9$, $SD = 2.0$, $p = .003$). No other differences were found between the two groups.

3.1 | Referrals for further diagnostic tests

Table 2 presents the reasons for referral, adherence to referrals, and outcomes of the diagnostic tests of the total sample, Israeli children compared to asylum-seeking children. Most of the parents of children

TABLE 1 Sample characteristics for the 2016–2017 cohort, Israeli children compared to asylum seeking children

Variable	Israeli children	Asylum seeking children	χ^2	p =
	(n = 243) N (%)	(n = 271) N (%)		
Gender			1.60	.20
Female	113 (46.5)	111 (41.0)		
Male	130 (53.5)	160 (59.0)		
Process of labor			7.54	.006
Vaginal	170 (70.0)	158 (58.3)		
Complex	73 (30.0)	113 (41.7)		
Infant born with medical problem			0.72	.39
No	176 (72.4)	187 (69.0)		
Yes	67 (27.6)	84 (31.0)		
Marital status			0.15	.68
Yes	203 (83.8)	229 (84.5)		
No	39 (16.1)	10 (3.7)		
Unknown	1 (0.1)	32 (11.8)		
Number of children in the pregnancy			0.05	.82
1	235 (96.7)	229 (97.3)		
2	8 (3.3)	8 (3.0)		
Medical insurance			184.6	.001
Yes	243 (100)	124 (45.7)		
No	0	107 (39.5)		
Unknown	0	40 (14.8)		
	M (SD)	M (SD)	F	p =
Mother's age	35.1 (5.54)	32.2 (4.89)	7.84	.001
Mother's education (years)	13.23 (0.20)	7.38 (3.53)	50.01	.001
Length of pregnancy (weeks)	38.9 (2.0)	39.6 (2.45)	2.11	.003
Number of children in family	2.45 (1.23)	1.95 (0.77)	56.44	.001

in the sample adhered to pediatrician and nurse referrals ($n = 378$, 73.5%). The highest rate of adherence was to physical referrals (47.6%), more than to growth referrals (32.8%) and developmental referrals (19.6%). Among the children of parents who complied with the referrals, 169 (44.7%) were diagnosed with a health problem that needed further intervention. The rest of the children (50.8%) needed no further follow-up, meaning that the results of the screening tests performed in the MCHCs were not confirmed by the diagnostic tests.

Asylum-seeking children were referred for physical reasons more than were Israeli children (58.9% vs. 41.1%, $p = .01$) and asylum-seeking children adhered to nurse referrals more than did Israeli children (73.0% vs. 64.0%, $p = .001$). Additionally, asylum-seeking children adhered to physical and growth referrals more than did Israeli children (58.9% vs. 41.1%, 57.3% vs. 42.7%, $p = .007$, respectively). Regarding the outcomes of the referrals: asylum-seeking children had more need for further follow-up than Israeli children (60.4% vs. 39.6%, $p < .001$).

The first multiple logistic regression was performed with the entire research sample, $n = 514$. The dependent variable was adherence/non-adherence to referrals. The explanatory variables were the child's origin (Israeli or asylum seeker), labor process, length of pregnancy, mother's age and education, number of children in the family, having medical insurance, referring professional (pediatrician or nurse), and referral reason. Children with unknown medical insurance were removed from the data and were considered missing data. The logistic regression revealed that the only factor that may explain adherence to referrals by MCHCs is the reason for referral. Children who were referred for a physical reason were 2.30 times as likely to adhere to the referral (95%CI = 1.36–3.90) than children with developmental referrals. Neither the mother's details, the labor process, nor having medical insurance, explained adherence to referrals (Table 3, model A).

The second multiple logistic regression was performed with the native Israeli sample ($n = 243$), with the same variables aside from having medical insurance. The logistic regression revealed that Israeli

TABLE 2 Characteristics and health outcomes of referrals, Israeli children compared to asylum seeking children

Variable	Total sample	Israeli children	Asylum seeking children	χ^2	p =
	(n = 514)	(n = 243)	(n = 271)		
	N (%)	N (%)	N (%)		
Referring factor				1.25	.26
Pediatrician	263 (51.2)	118 (48.6)	145 (53.5)		
Nurse	251 (48.8)	125 (51.4)	126 (46.5)		
Reasons for referral ^a				7.94	.01
Physical	224 (43.6)	92 (41.1)	132 (58.9)		
Growth	174 (33.8)	85 (48.9)	89 (51.1)		
Development	116 (22.6)	66 (56.9)	50 (43.1)		
Adherence to referral				1.30	.25
Yes	378 (73.5)	173 (45.8)	205 (57.2)		
No	136 (26.5)	70 (51.5)	66 (48.5)		
Adherence to referral by reasons				10.04	.007
Physical	180 (47.6)	74 (41.1)	106 (58.9)		
Growth	124 (32.8)	53 (42.7)	71 (57.3)		
Development	74 (19.6)	46 (62.2)	28 (37.8)		
Nurse referral				14.22	.001
Adherence	172 (68.5)	80 (64.0)	92 (73.0)		
No adherence	53 (21.1)	23 (18.4)	30 (23.8)		
Unknown	26 (10.4)	22 (17.6)	4 (3.2)		
Pediatrician referral				0.31	.85
Adherence	206 (78.4)	93 (78.8)	113 (77.9)		
No adherence	43 (16.3)	18 (15.3)	25 (17.2)		
Unknown	14 (5.3)	7 (5.9)	7 (4.8)		
Outcome				15.93	<.001
Further follow-up	169 (44.7)	67 (39.6)	102 (60.4)		
No further follow-up	192 (50.8)	104 (54.2)	88 (45.8)		
Unknown	17 (4.5)	2 (11.8)	15 (88.2)		
	M (SD)	M (SD)	M (SD)	F	p =
Length of treatment (days) ^b	222 (206.9)	217(192.1)	228 (222.3)	3.97	.56

^aPhysical suspicious finding, for example: Cardiovascular system, 14.8%; Head and neck system, 14.8%; Skin system, 8.4%; Chest 3.4%; Skeletal system, 7.2%; Genital system, 11.0%; Growth and developmental suspicious findings, for example: Increase in head circumference, 10.0%; Weight loss or lack of weight gain, 31.1%; Insufficient developmental milestones, 32.7%.

^bt-test for continuous variables.

children of mothers with a higher education level were 1.20 times as likely to adhere to referrals than Israeli children of a mother with a low educational level (95% CI = 1.03–1.40). Israeli children with physician referrals were 1.9 times as likely to adhere to the referral than when referred by a nurse (95%CI = 1.06–3.42) (Table 3, model B).

The third multiple logistic regression was performed with the asylum-seeking children ($n = 271$), with the same explanatory variables. The regression revealed that children who were referred for a physical reason were 3.24 times as likely to adhere to the referral and children who were referred for a growth reason were 3.28 times as likely to adhere to the referral than children referred for a

developmental reason (95%CI = 1.49–7.02 and 95%CI = 1.44–7.50, respectively). Medical insurance was not found to be an explanatory variable of adherence to referrals among the asylum-seeking children (Table 3, model C).

4 | DISCUSSION

The current study compared two groups of children registered in MCHCs: native Israeli children and asylum-seeking children, regarding their adherence to referrals for further diagnostic tests due to

TABLE 3 Multiple logistic regression for Israeli children and asylum-seeking children regarding adherence to referrals for further diagnosis

Variable	Model A	Model B	Model C
	Entire research sample, n = 514	Israeli children n = 243	Asylum seeking children n = 271
	OR (CI 95%)	OR (CI 95%)	OR (CI 95%)
Child origin			
Asylum seeking children	1	-	-
Israeli children	1.64 (0.88-3.05)		
Process of labor			
Vaginal	1	1	1
Complex	0.87 (0.56-1.36)	0.80 (0.40-1.57)	0.86 (0.46-1.62)
Length of pregnancy (weeks)	0.98 (0.89-1.07)	1.01 (0.87-1.16)	0.97 (0.86-1.09)
Mother's age	0.99 (0.95-1.03)	0.97 (0.92-1.03)	1.02 (0.96-1.09)
Mother's education (years)	1.06 (0.98-1.13)	1.20 (1.03-1.40)*	1.01 (0.93-1.10)
Number of children in the family	0.95 (0.79-1.15)	0.99 (0.78-1.25)	1.20 (0.78-1.84)
Medical insurance			
No	1	-	1
Yes	1.21 (0.72-2.06)		1.55 (0.83-2.87)
Referring factor			
Nurse	1	1	1
Physician	0.85 (0.50-1.41)	1.90 (1.06-3.42)*	1.11 (0.51-2.42)
Referral reason			
Development	1	1	1
Physical	2.30 (1.36-3.90)**	1.70 (0.80-3.61)	3.24 (1.49-7.02)**
Growth	1.44 (0.85-2.44)	0.69 (0.33-1.41)	3.28 (1.44-7.50)**

* $p < .05$.** $p < .01$.

physical, developmental, or routine growth screening disorders. The main finding of the current study is that there were no differences between the two groups in their adherence to MCHC referrals. This finding differs from those of previous studies, which found that refugee or asylum-seeking children and adults are less responsive to medical referrals or have limited access to health amenities compared to citizen children/adults (Alwan et al., 2020; Holmes et al., 2021; Willen, 2012). Studies conducted in western countries found that refugee and asylum-seeking children had impaired access to health examinations compared to native children (Kroening et al., 2016; Moller et al., 2016). Holmes et al. (2021) argue that the local health system must adapt itself to the needs of asylum seekers and not exclude them from receiving health treatment. The researchers call this "deservingness," a factor that may affect physicians' and nurses' decisions regarding what health treatment migrant patients should receive or even should they receive treatment at all. The findings of the current study showed that Israeli children and asylum-seeking children receive the same health treatment at the MCHCs, with no difference in physician or nurse referrals for further health treatment. However, significantly more asylum-seeking children needed further health follow-up compared to Israeli children. This finding may be related to the more complex health

condition of children of asylum seekers who live in greater poverty conditions, have higher nutrition insecurity (Khullar & Chokshi, 2019), and do not visit a physician on a regular basis as most of them lack health insurance and are not registered with an HMO (Moshe, 2017).

Another interesting finding is that, among asylum-seeking children, having medical insurance is not a predictor of adherence to referrals received from MCHCs. It seems that having or not having medical insurance is not an obstacle to acting on referrals from MCHCs. Previous studies found that not having medical insurance coverage is a high-risk factor for not adhering to routine visits to well-child clinics (Abdus & Selden, 2013) or to childhood early intervention (Khullar & Chokshi, 2019). Contrary to those findings, the current study found that asylum-seeking children adhere to referrals of pediatricians or nurses to the same extent as native Israeli children, even though they have less medical insurance than Israeli children. This finding was validated again in the logistic regression model C, where no significant difference in compliance with referrals was found between asylum-seeking children who did or did not have medical insurance.

Kroening et al. (2016) reported three main barriers to developmental screening diagnosis and intervention among refugee children: language, cultural differences, and transportation. In Israel, asylum



seekers from Eritrea arrived in the country from late 2007 to late 2012. There are no “newly arrived” asylum seekers from Eritrea. Language is still a barrier, particularly among asylum seekers who speak Tigrine, a language in which only few Israelis are proficient. But, as the sample of the current study included a 2016–2017 cohort who were born in Israel, most of the parents had already been in Israel for several years and had learned some basic words in the local language. The cultural gap is a more complex issue. Less than 40% of asylum-seeking children have health insurance (Moshe, 2017). This fact may reflect a difference in health perceptions between the western culture and the culture in the developing countries from where they originated (Moller et al., 2016). The perception that one must purchase health insurance and pay a monthly premium for a future need for a physician or nurse is one that asylum seekers from Eritrea find hard to grasp. In their perception, if a child becomes ill, they will then go to a doctor for treatment for a fee (and sometimes they will use a traditional healer). This cultural gap is difficult to bridge and is part of the explanation for the low insurance rate among asylum seekers. Hence, cultural competence of the health system, coordination and navigating regarding the local health system, may encourage the refugee community to embrace more judicious health seeking behaviors (Alwan et al., 2020; Kroening & Dawson-Hahn, 2019). At the same time, it is possible that asylum-seeking parents perceive the preventive medical services in the MCHC as being of high quality and as the only established health care for their children and therefore respond to referrals regardless of the existence of health insurance. This issue is beyond the scope of the current study.

Another finding of the present study was that native Israeli children received more referrals for developmental reasons than did asylum-seeking children. A possible explanation may be the method of performing the developmental screening test: At the beginning of the test, the nurse asks the parents if they have any concerns regarding their child's development (Sudry et al., 2022). It is possible that the outcome of the screening test is normal but the nurse decides to refer the child based on the parents' concern. This verbal communication also has cultural nuances. This communication may be deficient when an asylum-seeking parent and child are involved, due to language difficulties and different cultural perceptions related to the child's development (Levin & Nahum, 2022; Weitzman et al., 2022). In contrast, the study found that if only objective measures such as a physical examination or height and weight tests are used, then the rate of referrals among asylum-seeking children is higher than among Israeli children.

A complementary finding of the current study is higher adherence to physical and growth referrals than to developmental referrals among asylum-seeking children. This was not observed among the Israeli children and may be explained by personal and cultural characteristics. Asylum-seeking mothers were younger and had fewer children than Israeli mothers. A previous study found that older mothers were less compliant than younger mothers with well-baby clinic visits. This may suggest that older mothers may feel that they have more experience with raising children than younger mothers (Jbanjee et al., 2004). Therefore, it is possible that Israeli mothers perceive themselves as more expert on their child's health needs, whereby they can teach and

train their child to achieve developmental tasks prior to the external intervention (Jimenez et al., 2014) and have the facilities to do so.

The professional practice in the MCHC is that physician referrals are mostly for physical problems whereas nurse referrals are for suspicions aroused by developmental or growth screening tests (Mor et al., 2018; Stein-Zamir et al., 2017). This professional practice emphasizes the importance of the nurse's role in communicating the need for further diagnostic tests. MCHC health services in Israel are identified by the parents as nurse services and less as medical services provided by physicians. Nurses are highly valued and trusted by the public (Rubin et al., 2017). This emphasizes the need to increase good and open communication with the parents to convince them to adhere to recommendations contained in referrals (Chung et al., 2006), market the importance of screening tests and their value for the future life of the child (Wakai et al., 2018) and, most importantly, recognize families with difficulties and help them deal with their challenges (Perry et al., 2017).

This study had several limitations. First, the study was conducted among children in a single city and may therefore not represent all asylum-seeking children in Israel. Yet, the city is the second largest in Israel, and most of the asylum-seeking children live in this city. There are small communities in other cities in Israel, with a small number of children. Second, health insurance status among nearly 15% of the asylum-seeking children was unknown. Some of them may have health insurance. It can be assumed that knowledge of their health insurance status might affect the findings.

Finally, the data was extracted from the children's medical files. There may be differences in recording methods between the physicians or nurses. Nevertheless, all the MCHCs are managed by a single professional body (the public health department of the municipality) and follow Ministry of Health procedures concerning computerized medical records. These facts reduce the likelihood of differences in recording.

5 | CONCLUSIONS AND IMPLICATION FOR PUBLIC HEALTH NURSES

The findings of the study suggest that there are no differences between asylum-seeking children and native-born Israeli children regarding adherence to MCHC referrals for further diagnosis. Having medical insurance is not an explanatory variable for adherence to MCHC referrals. These findings are not congruent with previous studies and need further investigation and confirmation in other cities and countries. Also, the current study found that asylum-seeking children show more adherence to physical or growth referrals than to developmental referrals. Undoubtedly, children of asylum seekers need the mediation, guidance, and advocacy of public health nurses to help them achieve their health needs. The MCHC is the primary place where children and their parents encounter the healthcare system. Public health nurses are the main health professionals who care for them and they are perceived as professional and trustworthy. Nurses' mediation, communication, and advocacy skills among asylum-seeking children must be strengthened, since compliance with diagnosis and early

treatment are essential for the healthy integration and development of asylum-seeking children in the host country and for mitigating health disparities among this vulnerable community.

ACKNOWLEDGMENTS

The author sincerely thanks Dr. Haim Nehama, Mrs. Aliza Oliel, and Mrs. Ora Kalbo for their assistance and support in conducting the study. The author declare that no funds, grants, or other support were received during the preparation of this manuscript.

CONFLICT OF INTEREST

The author has no relevant financial or non-financial interests to disclose.


AUTHOR CONTRIBUTIONS

The study conception and design, material preparation, data collection and analysis were all performed by Anat Amit Aharon.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Anat Amit Aharon RN, MHA, PhD  <https://orcid.org/0000-0002-7710-2350>

REFERENCES

- Abdus, S., & Selden, T. M. (2013). Adherence with recommended well-child visits has grown, but large gaps persist among various socioeconomic groups. *Health Affairs (Project Hope)*, 32(3), 508–515. <https://doi.org/10.1377/hlthaff.2012.0691>
- Alwan, R., Schumacher, D., Cicek-Okay, S., ernigan, S., Beydoun, A., Salem, T., & Vaughn, L. (2020). Beliefs, perceptions, and behaviors impacting health care utilization of Syrian refugee children. *Plos One*, 15(8), e0237081.
- Bischoff, A., Bovier, P. A., Rrustemi, I., Gariazzo, F., Eytan, A., & Loutan, L. (2003). Language barriers between nurses and asylum seekers: Their impact on symptom reporting and referral. *Social Science & Medicine*, 57(3), 503–512. [https://doi.org/10.1016/s0277-9536\(02\)00376-3](https://doi.org/10.1016/s0277-9536(02)00376-3)
- Chung, P. J., Lee, T. C., Morrison, J. L., & Schuster, M. A. (2006). Preventive care for children in the United States: Quality and barriers. *Annual Review of Public Health*, 27, 491–515. <https://doi.org/10.1146/annurev.publhealth.27.021405.102155>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160. <https://doi.org/10.3758/BRM.41.4.1149>
- Fazel, M., Reed, R., Panter-Brick, C., & Stein, A. (2012). Mental health of displaced and refugee children resettled in high-income countries: Risk and protective factors. *The Lancet*, 379(9812), 266–282. [https://doi.org/10.1016/S0140-6736\(11\)60051-2](https://doi.org/10.1016/S0140-6736(11)60051-2)
- Guerrero, N., Small, A. L., Schwei, R. J., & Jacobs, E. A. (2018). Informing physician strategies to overcome language barriers in encounters with pediatric patients. *Patient Education and Counseling*, 101(4), 653–658. <https://doi.org/10.1016/j.pec.2017.10.018>
- Holmes, S. M., Castañeda, E., Geeraert, J., Castaneda, H., Probst, U., Zeldes, N., Willen, S. S., Dibba, Y., Frankfurter, R., Lie, A. K., Askjer, J. F., Fjeld, H., & Migration and Health in Social Context Working Group. (2021). Deservingness: Migration and health in social context. *BMJ Global Health*, 6(Suppl 1), e005107. <https://doi.org/10.1136/bmjgh-2021-005107>
- Jbanjee, I., Deepti, S., Jaspal, A., & Gjerdingen, D. (2004). Parent's health and demographic characteristics predict noncompliance with well-child visits. *The Journal of the American Board of Family Practice / American Board of Family Practice*, 17, 324–331.
- Jimenez, M., Fiks, A., Shah, L. R., Gerdes, M., Ni, A., Pati, S., & Guevara, J. P. (2014). Factors associated with early intervention referral and evaluation: A mixed methods analysis. *Academic Pediatrics*, 14(3), 315–323. <https://doi.org/10.1016/j.acap.2014.01.007>
- Khullar, D., & Chokshi, D. A. (2019). Challenges for immigrant health in the USA—the road to crisis. *The Lancet*, 393(10186), 2168–2174. [https://doi.org/10.1016/S0140-6736\(19\)30035-2](https://doi.org/10.1016/S0140-6736(19)30035-2)
- Kroening, A. L. H., & Dawson-Hahn, E. (2019). Health considerations for immigrant and refugee children. *Advances in Pediatrics*, 66, 87–110. <https://doi.org/10.1016/j.yapd.2019.04.003>
- Kroening, A. L. H., Moore, J. A., Welch, T. R., Halterman, J. S., & Hyman, S. L. (2016). Developmental screening of refugees: A qualitative study. *Pediatrics*, 138(3), e20160234. <https://doi.org/10.1542/peds.2016-0234>
- Lane, G., Farag, M., White, J., Nisbet, C., & Vatanparast, H. (2018). Chronic health disparities among refugee and immigrant children in Canada. *Applied Physiology, Nutrition, and Metabolism*, 43(10), 1043–1058. <https://doi.org/10.1139/apnm-2017-0407>
- Levin, L., & Nahum, M. (2022). Public community work in neighborhoods with both citizen and asylum-seeking residents: South Tel Aviv as a study case. *Journal of Immigrant & Refugee Studies*, 1–13. <https://doi.org/10.1080/15562948.2022.2039830>
- Moller, S. P., Hjern, A., Andersen, A.-M. N., & Norredam, M. (2016). Differences in uptake of immunisations and health examinations among refugee children compared to Danish-born children: A cohort study. *European Journal of Pediatrics*, 175(4), 539–549. <https://doi.org/10.1007/s00431-015-2663-9>
- Mor, Z., Amit Aharon, A., Sheffer, R., & Nehama, H. (2018). Growth, developmental achievements and vaccines timeliness of undocumented migrant children from Eritrea compared with Israelis. *Plos One*, 13(3), e0193219. <https://doi.org/10.1371/journal.pone.0193219>
- Moshe, N. (2017). Health insurance for foreign workers and uncitizen and services utilization (Hebrew). Knesset, Research and Information Center. <http://www.israel-sociology.org.il/uploadimages/idspirsumim28062013.pdf>
- National Health Insurance Law (1995). *Israel Law Book 1469 (Hebrew)*. https://www.health.gov.il/LegislationLibrary/Bituah_01.pdf
- Nehama, H. (2020). *Children of the foreign community who registered in mother-child health clinics (Hebrew)*. Public Health Department, Tel-Aviv Municipality.
- Perry, H. B., Sacks, E., Schleiff, M., Kumapley, R., Gupta, S., Rassekh, B. M., & Freeman, P. A. (2017). Comprehensive review of the evidence regarding the effectiveness of community-based primary health care in improving maternal, neonatal and child health: 6. Strategies used by effective projects. *Journal of Global Health*, 7(1), 010906. <https://doi.org/10.7189/jogh.07.010906>
- Riverin, B., Li, P., Rourke, L., Leduc, D., & Rourke, J. (2015). Rourke Baby Record 2014: Evidence-based tool for the health of infants and children from birth to age 5. *Canadian Family Physician*, 61(11), 949–955.
- Rubin, L., Belmaker, I., Somekh, E., Urkin, J., Rudolf, M., Honovich, M., Bilenko, N., & Grossman, Z. (2017). Maternal and child health in Israel: Building lives. *The Lancet*, 389(10088), 2514–2530. [https://doi.org/10.1016/S0140-6736\(17\)30929-7](https://doi.org/10.1016/S0140-6736(17)30929-7)
- Stein-Zamir, C., Shoob, H., & Zimmerman, D. R. (2017). The role of the physician in Israel's maternal child health clinics: Surveys of professional and parental perceptions. *Israel Journal of Health Policy Research*, 6(1), 53. <https://doi.org/10.1186/s13584-017-0174-z>
- Sudry, T., Zimmerman, D. R., Yardeni, H., Joseph, A., Baruch, R., Grotto, I., Greenberg, D., Eilenberg, R., Amit, G., Akiva, P., Tsadok, M. A., Rize, Y., Zaworbach, H., Uziel, M., Ben Moshe, D., Lior Sadaka, I., Bachmat, E.,



- Freedman, J., & Sadaka, Y. (2022). Standardization of a developmental milestone scale using data from children in Israel. *JAMA Network Open*, 5(3), e222184. <https://doi.org/10.1001/jamanetworkopen.2022.2184>
- The American Academy of Pediatrics and Bright Futures. (2017). 2017 recommendations for preventive pediatric health care. *Pediatrics*, 139(4), e20170254. <https://doi.org/10.1542/peds.2017-0254>
- Turner, K. (2018). Well child visits for infants and young children. *American Family Physician*, 98(6), 347–353.
- Wakai, T., Simasek, M., Nakagawa, U., Saijo, M., & Fetters, M. D. (2018). Screenings during well-child visits in primary care: A quality improvement study. *Journal of the American Board of Family Medicine*, 31(4), 558–569. <https://doi.org/10.3122/jabfm.2018.04.170222>
- Weitzman, C. C., Baum, R. A., Fussell, J., Korb, D., Leslie, L. K., Spinks-Franklin, A. I. A., & Voigt, R. G. (2022). Defining developmental-behavioral pediatrics. *Pediatrics*, <https://doi.org/10.1542/peds.2021-054771>
- Willen, S. S. (2012). How is health-related "deservingness" reckoned? Perspectives from unauthorized immigrants in Tel Aviv. *Social Science & Medicine*, 74(6), 812–821. <https://doi.org/10.1016/j.socscimed.2011.06.033>

How to cite this article: Amit Aharon, A. (2022). Reducing health disparities: Adherence to referrals for further diagnosis among asylum seeking children. *Public Health Nursing*, 39, 1246–1254. <https://doi.org/10.1111/phn.13120>