

Synthesis Project: Can the Rourke, Greig, and ASQ Development Screens Accurately
Predict Outcomes in Refugee Children?

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Purpose

The purpose of this project was to assess the efficacy of the Rourke Baby Record and the Ages and Stages Questionnaire for ages 0-5 and the Greig Health record for ages 6-17 in predicting developmental outcomes in children who are recent refugees. My research included a review of current academic literature on this topic, and an interview with a nurse in a refugee clinic. For the purpose of this paper, I will first review recent data on refugee children and their health and development, then I will consider the background and research surrounding the Rourke, Greig, and ASQ screening tools, finally, I will bring the information together and assess whether the screens can predict long-term health outcomes and what is missing from the screening tools for this complex population.

The Refugee Child

There is a clear information deficit surrounding the issue of the long-term ramifications of being a child refugee transitioning between countries and cultures. Because of this deficit, we, as health care providers, do not know what the specific needs of this population will be as they grow up in Canada. Recently, this has become a more pressing concern, as Canada has become home to nearly 40 000 Syrian refugees since the latter part of 2015 (Government of Canada, 2017). As of six months ago, over 16 000 children under the age of 18 had arrived in Canada (Citizenship & Immigration Canada, 2017), and the numbers have increased since that time.

My first question about this growing population is: what health issues are most prevalent when these children first arrive in Canada? Fortunately, I had the benefit of

being able to speak to a nurse who works in a clinic for recent refugees. This clinic helps refugees to get started in their new country by connecting them to resources in the community. According to her, the most prevalent health issues in refugee children are: iron-deficiency anaemia (IDA) and malnutrition, parasites, dental caries, grief and fear manifesting as signs of post-traumatic stress disorder, cultural adjustment difficulties, and genetic disorders resulting from close familial relations between parents – most notably, thalassemia (Rietkerk, Jan. 30, 2017).

Malnutrition and IDA Long-Term Effects:

Canada has taken in child refugees from many different parts of the world (Government of Canada, 2016), and test results have shown varying levels of malnutrition among the diverse populations. A study conducted in Jordan on Syrian refugees within a camp, found that the prevalence of malnutrition was lower than in other refugee assessments, however the rate of IDA was high enough to be qualified as a health emergency (Bilukha et al., 2014). While looking in to the long-term cognitive outcomes from childhood malnutrition, Ampaabeng & Tan (2013) found there to be a significant difference in intelligence test scores; children with a history of malnourishment had poorer results, particularly if the child experienced malnutrition prior to the age of two-years-old. Alderman, Hoddinott, & Kinsey (2006) researched physical growth outcomes resulting from malnutrition in early childhood. Their study revealed that adolescents who were malnourished during pre-school years, were significantly shorter than their well-nourished peers. Briend & Berkley (2016) looked at the long-term overall health outcomes of children who experienced severe malnutrition and learned that, while the lack of fatty tissue and proteins can be made up for, the loss of lean tissue due to

malnutrition, puts children at an increased risk for developing chronic health conditions later in life, such as heart and kidney disease. When Abdullah et al. (2011) researched the long-term health effects of IDA; they found that risks included, significant developmental depressions, immune deficiency, as well as physical growth and endurance deficits. What is especially challenging is that the effects of IDA are extremely difficult to reverse, however positive outcomes can be achieved by treating iron deficiency to prevent the condition from worsening (Abdullah et al., 2011). Overall, both malnourishment and IDA must be screened for, so that refugee populations that are at risk, can receive appropriate and timely treatment.

Parasites Long-Term Outcomes:

Generally, there is a preference towards testing for, and treating gastrointestinal parasites, before refugees enter the country (Centers for Disease Control and Prevention, 2013); however, this is not always possible, particularly in younger populations. Left untreated, these parasites are sometimes capable of causing severe illness and death in younger immunocompromised children (Centers for Disease Control and Prevention, 2013). Most of the long-term effects of parasites in children are related to malnutrition and IDA, and the resultant vomiting and diarrhea. If the parasite remains untreated, the stunting of growth and cognitive development is the inevitable outcome (Canadian Paediatric Society, 2016). The treatment for parasites can be expensive, but should be administered to all symptomatic and asymptomatic child refugees to minimize long-term complications (Canadian Paediatric Society, 2015). Fortunately, the most prominent parasites like soil-transmitted helminths and *Strongyloides*, are mainly present asymptotically in the effected population.

Genetic Disorders Long-Term Effects:

One of the most prevalent genetic disorders in child refugee populations is thalassemia (Rietkerk, Jan. 30, 2017). Thalassemia is a blood disorder where there is too little haemoglobin, the oxygen-carrying component of blood, produced naturally in the body (Kim & Tridane, 2017). According to Kim and Tridane (2017), thalassemia is spreading due to intermarriage, followed by the migration of members of the population that carry the gene. While thalassemia can sometimes be asymptomatic, when it is symptomatic, it must be managed medically. Less severe cases can be managed with iron supplementation, and regular check-ups to look at lab results and ensure the supplementation is sufficient (Rietkerk, Jan. 30, 2017). However, severe cases must be controlled by blood transfusions and chelation therapy to avoid iron overload (Canadian Paediatric Society, 2013). Thalassemia is an expensive lifelong condition that can cause abnormal growth and development, as well as facial and bone deformities leading to lifelong motor disabilities and negative self-image (Sayani et al., 2009). Due to the growing number of children with thalassemia immigrating to Canada, it is important to improve screening and treatment protocols upon entrance to the country.

Dental Caries Long-Term Outcomes:

Dental caries present a consistent problem in refugee children new to Canada, as these children are less likely to have had consistent oral care, have limited health literacy, and insufficient finances for toothbrushes and toothpaste (Reza et al., 2016). These children can face significant issues: pain from dental caries can decrease school performance, and / or cause functional and cognitive delays due to eating and speech impairments; older children and adolescents are more prone to negative psychosocial

outcomes due to poor self-image; these children are also more prone to dental disease in the long-term (Reza et al., 2016). As refugees are more likely to present to primary healthcare providers first, it is important for paediatricians and nurses to recognize the signs of dental caries, so that children and families can be given the appropriate referrals and education to diminish negative long-term outcomes (Cote et al., 2004).

PTSD Long-Term Outcomes:

Children who forced to flee from their home countries, face huge changes that cause feelings of grief and loss. Many have witnessed violence and trauma; several have lost family members, either in their home country, or during the voyage to Canada. Post-traumatic stress disorder (PTSD) starts to appear when the child begins to feel safe in their environment, and often manifests in regressive behaviours like bedwetting or tantrums (Rietkerk, Jan. 30, 2017). In children, PTSD can be diagnosed through the presence of emotional stressors, intrusive recollections, avoidance and numbing, and hyper-arousal, with symptoms persisting for longer than a month (Canadian Paediatric Society, 2016). PTSD can cause lifelong symptomology (Perry, 2007); increase the risk of developing secondary mental health disorders in adulthood, such as depression and schizophrenia; and increase the likelihood of physical health disorders such as heart disease and ulcers (Carr et al., 2013). Children receive some protection from PTSD through personal resilience (Southwick et al., 2014) and family support, as well as the knowledge that they are in a safe environment (Milovancevic, Ispanovic, & Stupar, 2016). Unfortunately, there is still a deficit in connection between mental health services, and primary care clinics and schools. This means that not all refugee children are able to

get the help they need, this can result in the persistence of PTSD into adulthood (Vostanis, 2016).

Cultural Adjustment Difficulties Long-Term Difficulties:

Differences in cultural practices often manifest in behaviour that is deemed unusual or inappropriate by Canadian standards, as is often witnessed by teachers in the schoolyard. For instance, in different cultures many boys, particularly around age 10-11, are taught to exhibit dominance through physical combat with other boys (Rietkerk, Jan. 30, 2017). Teachers, that are untrained in the practices of other cultures, respond in a highly negative way to physical fighting. They often punish the boys without explanation on why the behaviour was not appropriate, leaving the boys confused, and facing peer-ridicule (Rietkerk, Jan. 30, 2017). This lack of acceptance can lead to issues with unsafe behaviours, such as alcoholism and recreational drug use in adolescents, and may also lead to depression and poor anger management in adulthood (Canadian Paediatrics Society, 2013). In younger populations, a study conducted by Jones, Greenberg, and Crowley (2015) found that poor social-emotional skills in kindergarten, corresponded with deficient future social skills, and weak peer relations. However, earlier adjustment leads to better future social outcomes. According to the website created by the Canadian Paediatric Society, “Kids New to Canada” (2013), there are four ways to adjust to different cultures: assimilation, where the original culture is rejected in favour of the new culture; integration, where both cultures are accepted; segregation, where the new culture is rejected in favour of the original culture; and marginalization, where both cultures are rejected. Of all the ways to adapt to new cultures, integration is the method that has the most positive impact on the child’s future outcomes (Canadian Paediatrics Society,

2013). To facilitate this, healthcare providers and teachers need to be trained in culturally competent care. This better prepares them to practice effective communication for managing cultural differences (Canadian Paediatric Society, 2014).

Rourke Baby Record

The Rourke Baby Record is a tool that measures growth and nutrition, development, family behaviour and health, infant screening and immunizations from birth to 5-years-old (Canadian Paediatric Society, 2017). The developmental screening tool was designed to be utilized in congruence with the World Health Organization (WHO) growth charts (Canadian Paediatric Society, 2017). It was last updated in 2014 to include the new nutritional guidelines from the Canada Food Guide (Riverin, Rourke, Leduc, & Rourke, 2015). The current Rourke baby screen was written by Rourke, Leduc, and Rourke in 2014, and assessed for the purpose of this paper. Due to the comprehensive nutrition section, and the physical examination section that includes height and weight, the Rourke Baby Record provides information as to whether there are nutrients missing from the infant's diet, and whether the infant is underweight. This can lead to the healthcare provider searching for signs of anaemia and other missing dietary necessities, then recommending the addition of nutrients to a child's diet. There is also an area in the nutrition section that looks at the infant's output. If the child is having consistent diarrhea, it might prompt a healthcare provider to look for possible parasites in a refugee child. Additionally, the Rourke Baby Record has a section titled "Other", under the education and advice heading. This section evaluates issues such as oral hygiene, and developmental milestones that don't fit into the standard motor and socio-emotional

development section. These areas prompt the healthcare provider to look for signs of dental caries, as well as mental regression common in childhood PTSD. There is a section on family presence and behaviour that includes the issues of conflict and stress, and should lead a healthcare provider to ask about how a family is coping. Whether or not the family is coping, can impact the child's ability to handle this stressful transition (James, Sovcik, Garoff, & Abbasi, 2014). The Rourke Baby Record also has a section on general development that will give some indication of developmental delays common in malnutrition or IDA, as well as possible regressions in development as a sign of PTSD (Canadian Paediatric Society, 2016). The Rourke Baby Record includes a section on investigating health abnormalities that prompts a healthcare provider to look at the infant's haemoglobin levels, as a low number could indicate thalassemia in this population (Rourke, Leduc, & Rourke, 2014). What is missing from this screening tool is an in-depth look at the ten social determinants of health: income and social status, social support networks, education, employment/working conditions (which directly impacts parents, so indirectly effects the child), social environments, physical environments, personal health practices and coping skills, healthy child development, gender, and culture. Social determinants are a very necessary part of assessing the environment in which the child will be raised, and can strongly influence a child's wellbeing and future outcomes (Public Health Agency of Canada, 2016). The screens are also only available in English and French, therefore parents who are new to both languages are less able to provide the necessary information to aid a healthcare provider for the screening of their children. While the Rourke Baby Record touches on many important health screens for

refugee infants and young children, it is not thorough enough to capture all their unique health and adjustment needs.

Greig Health Record

The Greig Health Record is the follow-up for the Rourke; it assesses children and youth aged 6-17 years and is recommended for use by the Canadian Paediatric Society (2016). It was last updated in 2016 to include more preventative health measures for youth (Greig et al., 2016), and, like the Rourke Baby Record, is meant to be used alongside the WHO growth charts for best results (Canadian Paediatric Society, 2016). The Greig Health Record follows up with similar questions as the Rourke, however they are less detailed, and offer fewer suggestions for screening. The Greig assessment is also arranged poorly compared to Rourke; the questions would yield more information if asked in a different order (Rietkerk, Jan. 30, 2017). According to my interview with Rietkerk (2017), this screen contains several questions that should be ignored when working with refugee populations; for example, the question on car seat and helmet safety are irrelevant and insensitive for refugee families who are restricted to public transit due to financial constraints. The Greig Health Record is also restricted primarily to physical health, and does not ask for much information in regards to the child's psychosocial history. It does not have any guidelines for mental health until the age 10 bracket. Considering the trauma many refugee children have borne witness to, this questionnaire is very limiting, and fails to address a large part of their health and wellness issues. Positive long-term health outcomes depend on psychological health, not just physical health. This questionnaire, much like the Rourke Baby Record, does not bring

the social determinants of health into the assessment as it should, especially when dealing with youths. The ability to develop healthy peer relationships that foster peer support, is an important part of positive adjustment, that can significantly impact a youth's sense of belonging (Edge, Newbold, & McKeary, 2014). The Greig Health Record is unable to properly assess what is most pressing for a primary health care provider to know in regards to refugee youths' safety and adaptation in a new environment.

Ages and Stages Questionnaire (ASQ)

The ASQ, like the Rourke Baby Record, is to assess the growth and development in infants aged 0-5 years. Unlike the Rourke, the ASQ focuses primarily on motor and psychosocial development, as opposed to physical health. The ASQ is intended for parents to complete (ASQ, 2017), but is limited in that it is only available in English, French, or Spanish. The ASQ must be completed by primary healthcare providers for this population, which may take too long when the child also has pressing physical health concerns, and the healthcare provider has many children to assess in a limited time. Due to the highly specialized nature of the ASQ questions, it would be better able to detect psychosocial and adjustment difficulties, for example poor cultural adjustment or PTSD, but is not designed to detect any of the physical health concerns of the refugee youth, unless it affects their motor or psychosocial development. The ASQ offers suggestions on how to assess development in infants, including providing activities and questions to increase interactions, making it a more user-friendly screening tool compared to the Rourke and Greig records. The ASQ, however, focuses entirely on the infant's development, and does not assess their family environment and interactions. In failing to

measure a child's support system the ASQ is overlooking an important indicator of that child's potential resilience and positive future outcomes (Public Health Agency of Canada, 2016).

What Should to be Added to the Developmental Screens?

While the current development screens may be appropriate and fulfil all required fields for children from financially secure backgrounds with stable home lives, they are unable to capture the complex multifaceted needs for children who are recent refugees. Currently, the Rourke and Greig screens are used at the Bridge refugee clinic in Vancouver as incomplete checklists guiding the preliminary framework for introductory assessments, and the ASQ is not used at all (Rietkerk, Jan. 30, 2017). What is the most apparent missing piece from these developmental screens, is a complete assessment of the child's social determinants of health. Refugees entering a new and unfamiliar country face a great deal of stress; financial concerns, housing concerns, language differences, cultural differences, and other issues that are highly important to a child's adaptation and future outcomes, and are not measured by any of the screens. Another way in which screens could be improved, is to be translated into more languages. This would enable more refugee parents to complete the questions and developmental assessments, allowing them to regain some measure of control over their child's health needs. There could also be links to referrals and applications for government funding in the screening tools. This would give families access to information regarding assistance with their child's specific health and development deficits. It would be useful to combine the physical health and family assessments of the Rourke and Greig screens, with the motor and socio-emotional

questions of the ASQ, and supplement with questions on a child's family history and their social determinants of health, to get a more complete picture of a refugee child's specific care requirements.

Conclusion

The Rourke Baby Record, the Ages and Stages Questionnaire for ages 0-5, and the Greig Health record for ages 6-17 are useful health and development screening tools for monitoring typical development under predictable circumstances. However, they are limited when it comes to addressing the unique issues of children that are recent refugees with different cultural practices, and backgrounds that are entirely unconventional by Canadian standards. To expect the current screening tools to be able to accurately predict a refugee child's developmental outcomes would be unwise. However, with a few implementations to the screening tools, and cultural competence training for primary healthcare providers and others who have frequent dealings with this population, there can be more measures put in place to catch health and socio-emotional deviations, and prevent long-term negative outcomes in refugee children.

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