

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

# Annals of Medicine and Surgery

journal homepage: [www.elsevier.com/locate/amsu](http://www.elsevier.com/locate/amsu)

## Correspondence

### Screening children born to migrant and refugee mothers for developmental dysplasia of the hip during and beyond the COVID-19 pandemic: Focus on the Eastern Mediterranean region

A large number of refugees and migrants from the Middle East and sub-Saharan Africa enter Europe on a yearly basis. Approximately one third of asylum - seekers are children [1]. Access to essential newborns' health screening for children born in migrants and refugees camps has always been challenging and was further limited during the COVID-19 pandemic. Therefore, congenital conditions such as hypothyroidism, phenylketonuria and developmental disabilities may remain untreated, often resulting in irreversible damage and long-term sequelae. Although attention towards communicable and life threatening conditions in this population has increased during the last years, little has been done for congenital musculoskeletal disorders [2].

The developmental dysplasia of the hip (DDH) constitutes a representative example of the latter, which can be treated successfully if diagnosed promptly. This condition of the hip joint affects approximately one in 1000 newborns [3]. Being one of the most common causes of congenital limb deformity and secondary osteoarthritis, DDH accounts for tens of millions of euros of resultant socioeconomic burden [4]. Its impact can be detrimental on migrants and refugees, given the presence of disability in this population is associated with poor living conditions and increased exposure to violence [1].

It appears that there is no consistent, evidence - based plan for DDH screening for migrants' newborns in the European Union. The existing evidence dates back to the 1990s or early 2000s and focuses on sub-populations with a markedly increased DDH risk [5,6]. Essential health screening of newborns differs significantly from country to country and is not obligatory in most cases - particularly when it comes to non - communicable diseases. At institutional level, the World Health Organization (WHO) Europe published a report on migrants' health in 2011. Refugees had approximately 50% higher risk of developing musculoskeletal disorders, however the report emphasized back pain, osteoporosis and fractures and provided minimal information about DDH [7]. Considering the lack of evidence as a sign that DDH does not inflict clinically significant burden to migrants would be false. Both the documented underutilization of healthcare services by regularized immigrants and the presence of a large number of undocumented immigrants strongly indicate that DDH and its long-term implications might be underestimated [2].

On these grounds, planning for migrant newborns' DDH screening should combine urgent short - term reparative interventions and evidence - based, long term solutions. Short - term interventions pertain to ensuring that all migrant newborns and infants can be screened as soon as possible. Instructing all physicians treating such children in the community or in hospitals to perform clinical DDH screening during their first visit can increase the chances of early detection and referral for further evaluation and treatment. As the clinical assessment itself can not reveal all forms of DDH, such as dysplasia or mild instability,

ultrasound scanning is recommended to be performed, following the clinical examination. Ultrasound is an important screening tool, as it costs low and it has no radiation. This can also decrease the burden of children hospitalizations due to late presented DDH, potential related complications and long-term associated sequelae. The burden of children hospitalizations is quite important in an era when pediatric hospitals face both an increased number of COVID-19 cases and an unforeseen demand for COVID-19 vaccinations [8]. On the other hand, long term solutions necessitate thorough collection of data, data-driven interventions at regional and national level and political action to decrease the gap between declared and actual accessibility of healthcare services.

The creation of an EU-wide DDH database can be the first step towards keeping track of immigrant newborns migrating within the EU and ensuring the continuity of care. To date, EU-wide data about migrants' health are deposited in the Mig-Healthcare Database [9]. The creation of such health information systems (HIS) has also been prioritized by WHO Europe. However, storing EU-wide identifiable health information faces technical (incompatibility between national HISs) and legal obstacles (EU General Data Protection Regulation - GDPR) [10,11]. Unless these issues are resolved, the EU cannot request all the EU member states and potential third countries receiving EU migration funding to implement DDH screening programs and report their findings on the database.

An additional issue to be addressed is health literacy among immigrants - recent studies have shown that this can differ significantly between EU citizens and newcomers [12]. Decreased health literacy can result in deliberate underutilization of health screening services. This can in turn undermine any effort to increase DDH screening and documentation. Therefore, both state (healthcare systems, asylum services) and non - state (international organizations, civil society) actors should take action to spread awareness about DDH and its lifelong consequences. Combining literacy campaigns with on - site clinical and/or sonographic screening can provide tangible results. Funding such activities through the Asylum, Migration and Integration Fund (AMIF) and the EU4Health Programme is in line with the EU policy agenda for the period 2021–2027 [13,14]. In this frame, improving immigrants' children's health can play an important role in both decreasing the burden of NCDs during and after the COVID-19 pandemic and promoting immigrants' integration in the EU.

Certainly DDH does not represent but a portion of the healthcare burden of the migration and refugee crisis. Interventions oriented towards DDH are important because they remind us of the significance of prevalent musculoskeletal conditions leading to long - term disability. While these conditions are not lethal or communicable, their timely detection has a major potential to improve immigrants' wellbeing,

<https://doi.org/10.1016/j.amsu.2022.104072>

Received 19 June 2022; Accepted 22 June 2022

Available online 24 June 2022

2049-0801/© 2022 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

safety and quality of life, decrease health expenditure and promote their integration in European society. Overall, an action plan for DDH can serve as a starting point for musculoskeletal disorders and disability screening among migrants' children.

### Ethical approval

N/A.

### Sources of funding

No source of funding.

### Author contribution

Tsagkaris and Laskaratou; Data collection, writing. Papazoglou and Moysidis and Eletheriades; Writing. Dimitriou; Supervision.

### Consent

N/A.

### Registration of Research Studies

Name of the registry:  
Unique Identifying number or registration ID:  
Hyperlink to your specific registration (must be publicly accessible and will be checked):

### Guarantor

Tsagkaris C. Laskaratou E.

### Declaration of competing interest

No conflict of interest.

### References

- [1] A. Baauw, J. Kist-van Holthe, B. Slattery, M. Heymans, M. Chinapaw, H. van Goudoever, Health needs of refugee children identified on arrival in reception countries: a systematic review and meta-analysis, *BMJ Paediatr Open* 3 (1) (2019), e000516, <https://doi.org/10.1136/bmjpo-2019-000516>.
- [2] A. Lebano, S. Hamed, H. Bradby, E. Dura-Ferrandis, J. Garces Ferrer, A. Fabienne, et al., Migrants' and refugees' health status and healthcare in Europe: a scoping literature review, *BMC Publ. Health* 20 (1) (2020), <https://doi.org/10.1186/S12889-020-08749-8>.
- [3] What is the prevalence of developmental dysplasia of the hip (DDH)? <https://www.medscape.com/answers/1248135-118325/what-is-the-prevalence-of-developmental-dysplasia-of-the-hip-ddh>. Accessed February 3, 2022.
- [4] H. Wu, Y. Wang, L. Tong, H. Yan, Z. Sun, The global research trends and hotspots on developmental dysplasia of the hip: a bibliometric and visualized study, *Front Surg* 8 (2021), <https://doi.org/10.3389/FSURG.2021.671403>.

- [5] Congenital dysplasia of the hip in children of immigrants from developing countries - PubMed. <https://pubmed.ncbi.nlm.nih.gov/9557490/>. Accessed February 3, 2022.
- [6] Infants of immigrant parents in Italy. A national multicentre case control study - PubMed. <https://pubmed.ncbi.nlm.nih.gov/11579327/>. Accessed February 3, 2022.
- [7] B. Rechel, *Migration and Health in the European Union*, 2011, p. 257.
- [8] N.Y. Penwill, N.R. De Angulo, P.R. Pathak, C. Ja, M. Elster, M. Hochreiter, et al., Changes in pediatric hospital care during the COVID-19 pandemic: a national qualitative study, *BMC Health Serv. Res.* 21 (1) (2021) 1–10, <https://doi.org/10.1186/S12913-021-06947-7/FIGURES/1>.
- [9] Database - Mig Healthcare. <https://www.mighealthcare.eu/mig-healthcare-database>. Accessed February 3, 2022.
- [10] Collection and Integration of Data on Refugee and Migrant Health in the WHO European Region: Policy Brief, 2021. January 2021, <https://www.euro.who.int/en/health-topics/health-determinants/migration-and-health/publications/2021/collection-and-integration-of-data-on-refugee-and-migrant-health-in-the-who-european-region-policy-brief-2021>.
- [11] Collection and Integration of Data on Refugee and Migrant Health in the WHO European Region, 2020. December 2020, <https://www.euro.who.int/en/publications/abstracts/collection-and-integration-of-data-on-refugee-and-migrant-health-in-the-who-european-region-2020>.
- [12] S.F. Villadsen, H. Hadi, I. Ismail, R.H. Osborne, C.T. Ekstrøm, L. Kayser, Ehealth literacy and health literacy among immigrants and their descendants compared with women of Danish origin: a cross-sectional study using a multidimensional approach among pregnant women, *BMJ Open* 10 (5) (2020), e037076, <https://doi.org/10.1136/BMJOPEN-2020-037076>.
- [13] A. Chiarenza, M. Dauvrin, V. Chiesa, S. Baatout, H. Verrept, Supporting access to healthcare for refugees and migrants in European countries under particular migratory pressure, *BMC Health Serv. Res.* 19 (1) (2019), <https://doi.org/10.1186/S12913-019-4353-1>.
- [14] EU4Health 2021-2027 – a vision for a healthier European Union. [https://ec.europa.eu/health/funding/eu4health-2021-2027-vision-healthier-european-union\\_en](https://ec.europa.eu/health/funding/eu4health-2021-2027-vision-healthier-european-union_en). Accessed February 3, 2022.

Christos Tsagkaris

*Novel Global Community Educational Foundation, Hebersham, NSW, Australia  
Working Group on Public Health and Policies, Amsterdam, Netherlands*

Emmanouela Dionysia Laskaratou\*  
*Researcher on Pediatric Orthopaedic Topics, Greece*

Anna Eleftheriades  
*National and Kapodistrian University of Athens, Faculty of Medicine, Athens, Greece*

Andreas S. Papazoglou  
*Athens Naval Hospital, Athens, Greece  
Working Group on Public Health and Policies, Amsterdam, Netherlands*

Dimitrios V. Moysidis  
*Aristotle University of Thessaloniki, Faculty of Medicine, Thessaloniki, Greece  
Working Group on Public Health and Policies, Amsterdam, Netherlands*

Rozalia Dimitriou  
*University of Crete, Medical School, Greece*

\* Corresponding author.

E-mail address: [emmalsk@hotmail.gr](mailto:emmalsk@hotmail.gr) (E.D. Laskaratou).