

# Finding Home: A Forensic Perspective on the Global Crisis of Forced Migration

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## **Abstract**

*Forced migration is a major social, political, legal, and public health challenge for the world today. Many developed countries are struggling to keep up with the massive influx of refugees streaming in bringing a myriad of issues that needs to be addressed. Despite fleeing for their lives when crossing geographical borders, refugees still have the legal burden to validate asylum claim. The aim of this paper is to discuss the different roles that forensic science can partake in managing the global crisis of forced migration. In a legal aspect, the role of forensics is providing evidence that can aid refugees in their asylum proceedings, such as age estimation for minors, physical and mental health assessments, and investigation of torture allegations. Despite polarising public opinion and many problematic challenges involved in working with refugees, the spirit of forensic science has always been about objectivity without discrimination. It is within the professional duty of forensic expertise as members of the global community to contribute what they can in this humanitarian crisis our society is currently facing.*

**Keywords:** migration, legal, forensic science and humanitarian

## **Abstrak**

*Krisis pengungsi menjadi masalah krusial sosial, politik, hukum dan kesehatan masyarakat yang menjadi tantangan dunia saat ini. Banyak Negara maju yang mengalami kesulitan menangani gelombang pengungsi yang datang dengan berbagai masalah yang perlu diatasi. Meskipun alasan pengungsi menyebrangi perbatasan geografis negara adalah untuk menyelamatkan nyawa, mereka tetap memiliki beban hukum untuk mengesahkan pencarian suaka mereka. Tujuan dari tulisan ini adalah membahas berbagai peran ilmu forensik dalam menangani krisis pengungsi yang sedang terjadi di dunia. Dalam aspek hukum, peran forensik adalah memberikan pembuktian yang dapat membantu pengungsi dalam proses suaka mereka, antara lain perkiraan usia untuk pengungsi di bawah umur, pemeriksaan kesehatan*

*fisik dan kejiwaan pengungsi, dan penyelidikan kasus penganiayaan. Meski opini publik bertentangan dan banyaknya tantangan problematis yang terlibat terkait pengungsi, jiwa ilmu forensik adalah objektifitas tanpa diskriminasi. Praktisi forensik memiliki tanggungjawab sebagai anggota komunitas dunia untuk menyumbangkan keahlian yang mereka punya dalam krisis kemanusiaan yang dihadapi masyarakat sekarang.*

**Kata kunci:** Migrasi, hukum, ilmu forensik dan kemanusiaan

## Introduction

In her poignant memoir titled *All God's Children Need Traveling Shoes*, Maya Angelou the poet wrote, "The ache for home lives in all of us, the safe place where we can go as we are and not be questioned." This quote illustrates how having a home, and a sense of security within it, is a basic human need.<sup>1</sup> The fundamental sense of home and belonging somewhere is acknowledged as a core part of our identity.<sup>2</sup>

With the increasing ease of modern day transportation, for some people the sense of home could span across geographical borders. This right to reside and move across borders is dutifully protected by Article 13 in the United Nations Declaration of Human Rights.<sup>3</sup> However, a significant part of human migration across borders are forced upon them, either caused by persecution towards their social identity or affiliation, or by the threat of violence in wars or conflicts happening in their home country. These displaced people are commonly referred to as refugees.

By the end of 2015, the United Nations High Commissioner for Refugees (UNHCR) reported that a staggering number of 65.3 million people have been forced to leave their homes. Among these people, nearly 21.3 million are categorised as refugees, with over half of them still under 18 years of age. These statistics are unprecedented and has raised concerns on whether the destination countries where these people are fleeing to have the adequate resources to provide for the sudden population influx.

Concerns over the possible social and economic burden of welcoming these displaced people have caused considerable political turmoil. Oftentimes this leads to legal disputes on which particular individual

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<sup>1</sup> M. Angelou, *All God's children need travelling shoes*, London: Virago, 1987.

<sup>2</sup> Hárđi, L. & Kroo, A. "Psychotherapy and psychosocial care of torture survivor refugees in Hungary: "a never-ending journey"", *Torture* 21, 2 (2011), 84-97.

<sup>3</sup> United Nations, "Universal Declaration of Human Rights", (1948) <http://www.refworld.org/docid/3ae6b3712c.html> (diakses 29 Aug 2016).

within this massive group of refugees is more deserving to be allowed to enter a certain border and subsequently entitled to humanitarian aids and/or state benefits that are available in that country. Meanwhile, improving the chances for a refugee to obtain asylum is still part of the international community's responsibility to grant protection for this vulnerable population.<sup>4</sup>

In legal proceedings, forensic science serves as a multidisciplinary scientific approach of presenting evidence and objective insights. There are many branches of the expertise that have the capabilities and resources to assist the legal processes that refugees are required to go through to be accepted for asylum. Despite polarising political opinions involved with refugee issues, forensic practitioners are professionally bound to not discriminate and prioritise the needs of refugees as human beings.

This paper aims to discuss the different aspects that forensic science can be in service of the humanitarian crisis our society is currently facing with the sharp rise of forced migration. This includes an overview of existing methods that may abet asylum processes such as age estimation in the living, forensic assessments of physical and mental health, and forensic investigations of torture allegations.

## Discussion

### 1. Refugee Definition

The term "refugee" is likely coined to easily differentiate the population with other types of immigrants. Refugees are considered to be involuntary migrants due to the threat of imminent violence, injury or even death in their home countries, whereas immigrants are thought to voluntarily migrate for economical or personal motives.<sup>5</sup>

Refugee is more specifically defined in the 1951 United Nations Convention Relating to the Status of Refugees as a person who is "owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not

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<sup>4</sup> Guy S. Goodwin-Gill, "Refugees: challenges to protection", *International Migration Review*, vol. 35, No. 1, (2001), 130-142.

<sup>5</sup> Derluyn, I. & Broekaert, E., "Unaccompanied Refugee Children and Adolescents: The Glaring Contrast Between a Legal and a Psychological Perspective", *International Journal of Law and Psychiatry*, Vol. 31, No. 4, (2008), 319-330.

having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.”

The 1969 Africa Refugee Convention further makes an addition to the definition of refugee with Article 1(2) that states “The term ‘refugee’ shall also apply to every person who, owing to external aggression, occupation, foreign domination, or events seriously disturbing public order in either part or the whole of his country of origin or nationality, is compelled to leave his place of habitual residence in order to seek refuge in another place outside his country of origin or nationality.”

Refugees are a group whose definition is politically sensitive. Many governments define refugees as those who have been successful in their claim for asylum.<sup>6</sup> The ever-going processes of changing labels on refugees are mostly in the interest of refugee host countries controlling immigration rather than offering refuge and ensuring access to humanitarian aids.<sup>7</sup> In general, this paper will henceforth refer to displaced people by forced migration mostly as refugees, regardless of the legal status of their asylum approval, in order to form a more concise narrative.

## 2. Refugee Protection Laws

The 1951 Refugee Convention by the United Nations in Geneva is the main legislation for most developed countries that authorises the consideration of asylum applications, and giving the power of the state to judge whether a migrant can be assigned a refugee status, thus allowing the refugee to reside in that country.<sup>8</sup> The Convention is to be applied to anyone without discrimination as to race, religion, or country of origin, and safeguards refugees against expulsion from the country where they are seeking asylum. The 1950 European Convention on Human Rights and the European Union Asylum Qualification Directive also provide the legal basis of which an individual can apply for asylum claims in member countries of the European Union (EU).

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<sup>6</sup> Cohen, J., “Safe in Our Hands?: a Study of Suicide and Self-Harm in Asylum Seekers”, *Journal of Forensic and Legal Medicine*, Vol. 15, No. 4,(2008), 235-244.

<sup>7</sup> Bradby, H., Humphris, R., Newall, D. & Phillimore, J., “Public Health Aspects of Migrant Health: A Review of the Evidence on Health Status for Refugees and Asylum Seekers in the European Region”, Health Evidence Network Synthesis Report 44, Copenhagen: WHO Regional Office for Europe, 2015.

<sup>8</sup> Derluyn, I. & Broekaert, E. “Unaccompanied refugee children and adolescents: the glaring contrast between a legal and a psychological perspective.”

In regard to refugees that migrate due to previous experience of being tortured or subjected to threats of being tortured, their rights to seek for asylum in another country is protected by Article 3 of the 1984 United Nations Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (UNCAT) that state “1. No State Party shall expel, return (*refouler*) or extradite a person to another State where there are substantial grounds for believing that he would be in danger of being subjected to torture. 2. For the purpose of determining whether there are such grounds, the competent authorities shall take into account all relevant considerations including, where applicable, the existence in the State concerned of a consistent pattern of gross, flagrant or mass violations of human rights.” This principle is also enforced in the 2006 International Convention for the Protection of All Persons from Enforced Disappearance.<sup>9</sup>

### 3. Role of Forensics in the Forced Migration Crisis

The enactment and enforcement of increasingly strict immigration laws place a heavy burden on refugees. Laws in many countries mandate that any person crossing a border without proper documentation be subject to deportation or mandatory immigration detention under conditions akin to criminal prisons.<sup>10</sup> It is therefore essential for a refugee to provide objective evidence that gives credibility for their claims of past persecution they have faced in their home country or emphasise reasonable grounds of why they have forcibly migrated in order to be granted asylum in a host country.<sup>11</sup> Forensic science is able to provide this objective evidence, mainly in form of medical assessments.

#### 3.1 Forensic Identification in Refugees

Identification is the task of establishing characteristics that differentiate one person from another.<sup>12</sup> These characteristics include biological features

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<sup>9</sup> Colin Harvey, “Time for Reform? Refugees, Asylum-seekers, and Protection Under International Human Rights Law”, *Refugee Survey Quarterly*, Vol. 34, No.1 (2015), 1-17.

<sup>10</sup> Stadtmauer, G.J., Singer, E. & Metalios, E., “An Analytical Approach to Clinical Forensic Evaluations of Asylum Seekers: The HealthRight International Human Rights Clinic”, *Journal of Forensic and Legal Medicine* Vol. 17, No. 1, (2010), 41-45.

<sup>11</sup> Sanders, J., Schuman, M.W. & Marbella, A.M., “The Epidemiology of Torture: A Case Series of 58 Survivors of Torture”, *Forensic Science International*, 189, 1-3, (2009), e1-e7.

<sup>12</sup> De Donno, A., Santoro, V., Lubelli, S., Marrone, M., Lozito, P. & Introna, F. (2013),

such as age, gender, build, race, and so on. A confirmation of one's identity is essential in legal settings, particularly in relation to asylum applications. This paper limits the discussion scope of forensic identification in refugees by mainly elaborating on age estimation in the living.

### 3.1.1 Age Estimation in Children

Determining a person's age is a part of creating a biological profile for their identification.<sup>13</sup> Identifying age is particularly fundamental to the realisation of the rights of refugee children, as they are entitled to protections, services and support that are not available for adults.<sup>14</sup> Age can also determine the possibility for family reunification if asylum is granted to a child refugee, which is a privilege that is not always granted to adults.<sup>15</sup>

Forensic age estimation is an expertise that aims to determine the chronological age of a person of unknown or doubtful age in the most accurate way possible by examining various biological indicators.<sup>16</sup> The Study Group on Forensic Age Diagnostics (*Arbeits Gemeinschaft für Forensische Alters Diagnostik*; AGFAD), established in 2000 by the German Society of Legal Medicine, recommend that age estimations in living adolescents and young adults should include the following methodologies.<sup>17</sup> A physical examination with anthropometric measurements, inspection of secondary sexual maturation signs, and identification of relevant developmental

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"Age assessment using the Greulich and Pyle method on a heterogeneous sample of 300 Italian healthy and pathologic subjects", *Forensic Science International*, 229, 1-3 (2013), 157.e1-157.e6.

<sup>13</sup> Santoro, V., Roca, R., De Donno, A., Fiandaca, C., Pinto, G., Tafuri, S. & Introna, F., "Applicability of Greulich and Pyle and Demirjian aging methods to a sample of Italian population", *Forensic Science International*, 221, 1-3, (2012), 153.e1-153.e5.

<sup>14</sup> Black, S., Aggrawal, A. & Payne-James, J., *Age Estimation in the Living: The Practitioner's Guide*, (Singapore: Wiley-Blackwell, 2010).

<sup>15</sup> Hjern, A., Brendler-Lindqvist, M. & Norredam, M., "Age assessment of young asylum seekers", *Acta Paediatrica*, 101, 1, (2012), 4-7.

<sup>16</sup> De Sanctis, V., Soliman, A.T., Elsedfy, H., Soliman, N.A., Kassem, I., Elalaily, R., Delbon, P., Di Maio, S. & Millimaggi, G., "A Review of the Medical Diagnostic Techniques for Forensic Age Estimation (FAE) in Minors (1st part)", *Rivista Italiana di Medicina dell'Adolescenza*, Vol.13, No2, (2015), 5-12.

<sup>17</sup> Black, S., Aggrawal, A. & Payne-James, J., *Age Estimation in the Living: The Practitioner's Guide*, (Singapore: Wiley-Blackwell, 2010); Hillewig, E., De Tobel, J., Cuche, O., Vandemaële, P., Piette, M. & Verstraete, K. (2011), "Magnetic resonance imaging of the medial extremity of the clavicle in forensic bone age determination: a new four-minute approach", *European Radiology* Vol.21, No 4, 2011 757-767.

disorders; 2) a radiographic examination of the left hand; 3) a dental examination.

### 3.1.1.1 Physical Examination

Physical examination for forensic age estimation should begin by taking appropriate medical history, with additional inquiries regarding illnesses and medications that could have effect on growth rate. Anthropometric data such as height, weight, head and chest circumference and sexual maturity features should be recorded during the examination to identify or exclude possible growth disorders that could lead to misleading conclusions of the age.<sup>18</sup> Several endocrine disorders that are known to possibly accelerate skeletal maturation include precocious puberty, adreno-genital syndrome, and hyperthyroidism, among many other illnesses.<sup>19</sup>

Comparing the anthropometric data obtained against standardized charts, that are usually used to monitor the growth of a child, might provide clues to the age of the child in question. However, height and other anthropometric values may be heavily influenced by poor state of health and nutrition, which is common among refugee children. Therefore, motor development should also be assessed in young children, including gross motor, fine motor, social and cognitive behaviour, and speech and language skills. Assessing which motoric milestones have been secured and which have not can lead to a reasonably reliable estimate of the child's age.<sup>20</sup>

For pubescent aged children, the Tanner stages of pubertal development (as shown in Figure 1 and Tables 1 and 2) are universally accepted as indicators for examining the changes that occur during this stage of growth. In males, the changes that can be observed and staged include the growth of testes and scrotum, and the growth of pubic and axillary hair. In females, the development of breast buds, growth of pubic and axillary hair, and menarche are the recordable events that can be observed.<sup>21</sup>

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

<sup>18</sup> Schmeling, A., Dettmeyer, R., Rudolf, E., Vieth, V. & Geserick, G. (2016), "Forensic Age Estimation", *Deutsches Ärzteblatt International* Vol.113, No 4 (2016), 44-50.

<sup>19</sup> Black, S., Aggrawal, A. & Payne-James, J., *Age Estimation in the Living: The Practitioner's Guide*, (Singapore: Wiley-Blackwell.,2010).

<sup>20</sup> Black, S., Aggrawal, A. & Payne-James, J., *Age Estimation in the Living: The Practitioner's Guide*, (Singapore: Wiley-Blackwell.,2010).

<sup>21</sup> Black, S., Aggrawal, A. & Payne-James, J., *Age Estimation in the Living: The Practitioner's Guide*, (Singapore: Wiley-Blackwell.,2010).

**Figure 1:**  
**Tanner staging of sexual maturity in children**

| Stage | G = genitals (boys)   |  | B = breasts (girls)   |   | P = pubic hair (girls)  |                                   |
|-------|---|--|---|---|---|-----------------------------------|
| 1     |  | Pre-adolescent   |  | Pre-adolescent  |  | No hair                           |
| 2     |  | Scrotum pink and texture change, slight enlargement of the penis |  | Breast bud  |  | Few fine hairs                    |
| 3     |  | Longer penis larger testes                                       |  | Larger, but no nipple contour separation  |  | Darkens, coarsens, starts to curl |
| 4     |  | Penis increases in breadth, dark scrotum                         |  | Areola and papilla from secondary mound. Menarche usually commences at this stage |  | Adult type, smaller area          |
| 5     |  | Adult size   |  | Mature (papilla projects, areola follows breast contour)                          |  | Adult type                        |

Source: Payne-James *et al.* 2011

**Table 1:**  
**Genital stages in the Tanner staging<sup>22</sup>**

| Tanner's | Genital stages in males and mean age and mean age (MA)   | Genital stages in females and mean age (MA)  |
|----------|--|--|
| Stage 1  | Infantile appearance from birth to the beginning of puberty. During this period, genitals do not increase much their overall size, but there is a slight change in their general appearance. | Infantile appearance, only papillae are elevated   |
| Stage 2  | Scrotum has enlarged, and there is a change in the texture of scrotal skin and some reddening of scrotal skin (MA: 11.4).  | Breast bud and papilla are elevated and a small mound is present; areola diameter is enlarged (MA: 11.2).  |
| Stage 3  | Growth of the penis has occurred, at first mainly in length but with some increase in width. There has been further growth of the scrotum (MA: 12.9).  | Further enlargement of breast mound and areola, without defining outline (MA: 12.2).   |
| Stage 4  | The testes and the scrotum are further enlarged and the penis is further enlarged in length and width (MA: 13.1).  | Areola and papilla are elevated to form a second mound above the level of the rest of the breast (MA: 13.8).   |
| Stage 5  | Genitalia are adult in size and shape (MA: 15.3).  | Adult mature breast; recession of areola to the mound of breast tissue, rounding of the breast mound, and projection of only the papilla are evident (MA: 14.9). |

<sup>22</sup> De Sanctis, V., Soliman, A.T., Elsedfy, H., Soliman, N.A., Kassem, I., Elalaily, R., Delbon, P., Di Maio, S. & Millimaggi, G., "A Review of the Medical Diagnostic Techniques for Forensic Age Estimation (FAE) in Minors (1st part)", *Rivista Italiana di Medicina dell'Adolescenza*, Vol.13, No 2, (2015), 5-12.



**Table 2:**  
**Pubic hair growth stages in the Tanner staging<sup>23</sup>**

|                         |   |
|-------------------------|---|
| <b>Tanner's Stage 1</b> | Absence of pubic hair.  |
| <b>Stage 2</b>          | Disperse distribution of pubic hair, small amount, slightly pigmented, straight or slightly curled, surrounding the basis of the penis or along the labia majora. |
| <b>Stage 3</b>          | Hair spreads on the pubic symphysis and is rather darker, coarser and usually more curled.  |
| <b>Stage 4</b>          | Adult -type hair, but the area covered is less than that in most adults; there is no spread to the medial surface of thighs.                                      |
| <b>Stage 5</b>          | Distribution is as an inverse triangle in women; adult-type hair regarding amount and appearance, with increased spread to medial surface of thighs.              |

### 3.1.1.2 Dental Development

In dental examinations, developmental characteristics of teeth eruption and mineralisation of the third molars are the clinically relevant points for age estimation.<sup>24</sup> Panoramic radiographs of the mandible (lower jaw bone) and maxilla (upper jaw bone) are used for observing teeth mineralisation. The emergence of teeth above the gum level is observed through a direct oral inspection or through a dental impression taken of the subject.<sup>25</sup>

There are a variety of classifications for evaluating tooth mineralisation available in literature, differing in regard to the number of stages, the definition of each stage and the presentation of the tooth in a certain stage.<sup>26</sup> Among the classifications available, a study by Fotiandcolleagues (2003) concluded that Demirjian's method (as shown in Figure 2) yield the best results for age estimation.

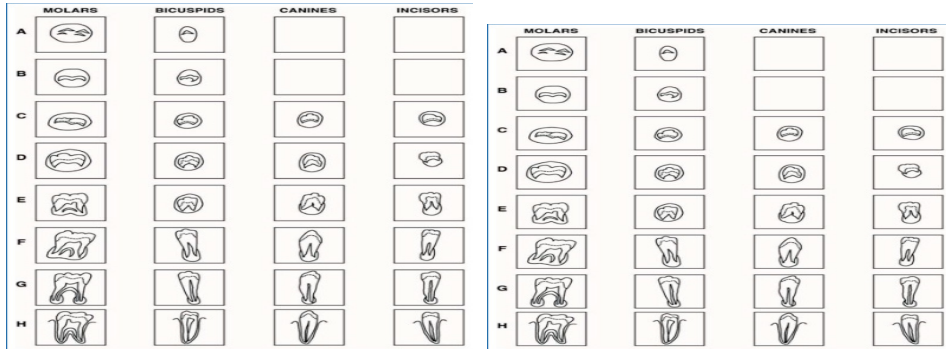
<sup>23</sup> De Sanctis, V., Soliman, A.T., Elsedfy, H., Soliman, N.A., Kassem, I., Elalaily, R., Delbon, P., Di Maio, S. & Millimaggi, G., "A Review of the Medical Diagnostic Techniques for Forensic Age Estimation (FAE) in Minors (1st part)", *Rivista Italiana di Medicina dell'Adolescenza*, Vol.13, No2, (2015), 5-12.

<sup>24</sup> Ardakani, F., Bashardoust, N. & Sheikhha, M., "The accuracy of dental panoramic radiography as an indicator of chronological age in Iranian individuals, *Vol.25*, No 2, 30-35.

<sup>25</sup> Black, S., Aggrawal, A. & Payne-James, J., *Age Estimation in the Living: The Practitioner's Guide*, (Singapore: Wiley-Blackwell, 2010).

<sup>26</sup> Black, S., Aggrawal, A. & Payne-James, J., *Age Estimation in the Living: The Practitioner's Guide*, (Singapore: Wiley-Blackwell, 2010).

Figure 2:  
Demirjian stages of dental development<sup>27</sup>



The Demirjian classification is arguably considered the best for dental age estimation because of the clearly lined diagrams and radiographic images as a visual aid for the examiner.<sup>28</sup> A drawback of the Demirjian method is the large standard deviation in dental development because of environmental factors and possible differences of maturation rates in different ethnic populations.<sup>29</sup>

In the context of refugees, there is a lack of studies available that provide applicable reference data based on ethnic differences, as most reference data are based on Caucasian Western populations.<sup>30</sup> This lack of reference data raises doubts over the accuracy of age estimation based on dental development in the refugee population.<sup>31</sup> Nonetheless, most existing

<sup>27</sup> De Sanctis, V., Soliman, A.T., Elsedfy, H., Soliman, N.A., Kassem, I., Elalaily, R., Delbon, P., Di Maio, S. & Millimaggi, G., "A Review of the Medical Diagnostic Techniques for Forensic Age Estimation (FAE) in Minors (1st part)", *Rivista Italiana di Medicina dell'Adolescenza*, Vol.13, No 2, (2015), 5-12.

<sup>28</sup> Santoro, V., Roca, R., De Donno, A., Fiandaca, C., Pinto, G., Tafuri, S. & Intron, F., "Applicability of Greulich and Pyle and Demirjian aging methods to a sample of Italian population", *Forensic Science International* Vol.221 No 1-3, (2012) 153.e1-153.e5.

<sup>29</sup> De Sanctis, V., Soliman, A.T., Elsedfy, H., Soliman, N.A., Kassem, I., Elalaily, R., Delbon, P., Di Maio, S. & Millimaggi, G., "A Review of the Medical Diagnostic Techniques for Forensic Age Estimation (FAE) in Minors (1st part)", *Rivista Italiana di Medicina dell'Adolescenza*, Vol.13, No 2, (2015), 5-12; Sauer, P.J., Nicholson, A., Neubauer, D. & Advocacy and Ethics Group of the European Academy of Paediatrics, "Age determination in asylum seekers: physicians should not be implicated", *European Journal of Pediatrics* Vol.175 No 3, (2016), 299-303.

<sup>30</sup> Ludlow, J.B., Davies-Ludlow, L.E. & White, S.C. "Patient risk related to common dental radiographic examinations: the impact of 2007 International Commission on Radiological Protection recommendations regarding dose calculation", *The Journal of the American Dental Association* 139, pp. 1237-1243.

<sup>31</sup> Sauer, P.J., Nicholson, A., Neubauer, D. & Advocacy and Ethics Group of the

literature still recommend the use of the Demirjian method when a dental maturation assessment is required to estimate the age of an individual.

### 3.1.1.3 Skeletal Maturity

Based on the recommendation of AGFAD, a radiograph of the left hand is most commonly used to determine skeletal maturity because the number of right-hand dominants is statistically higher in all populations. Consequently, the right hand is more frequently susceptible to trauma that can impair or alter skeletal development.<sup>32</sup> The hand and wrist skeletal structure has many ossification centres that can be observed and can be easily accessed for radiographic examination without exposing the rest of the body. The procedure involved is a quick process and uses a very low dosage of radiation; therefore the assessment poses minimum health risks.<sup>33</sup>

There are two approaches commonly used for the assessment of skeletal maturity:<sup>34</sup> the atlas technique and bone-specific scoring techniques. Atlas methods use a collection of standard radiographic images depicting normal ossification processes of the human hand that are then compared with the maturation patterns seen on the hand radiograph of the individual in question.

A review by the Forensic Anthropology Society of Europe deemed that the Greulich and Pyle method (depicted in Figure 3) was the quickest and easiest method to use in determining the skeletal age in living persons.<sup>35</sup> The Greulich and Pyle atlas is a series of standardised x-rays of the hand and wrist from birth up to 18 years for females and 19 years for males.<sup>36</sup>

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European Academy of Paediatrics, "Age determination in asylum seekers: physicians should not be implicated", *European Journal of Pediatrics* Vol.175 No 3, (2016) pp. 299-303.

<sup>32</sup> Black, S., Aggrawal, A. & Payne-James, J., *Age Estimation in the Living: The Practitioner's Guide*, (Singapore: Wiley-Blackwell.,2010).

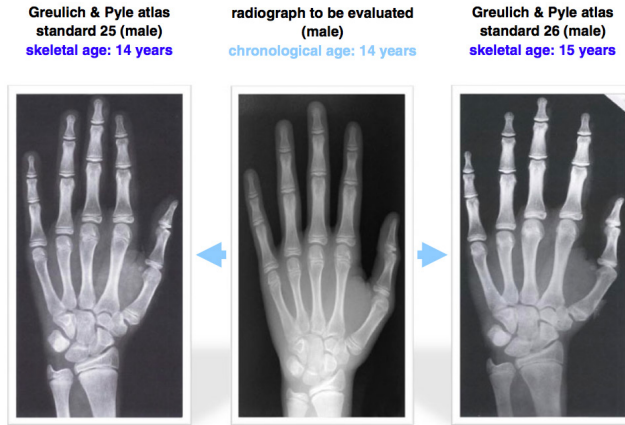
<sup>33</sup> De Donno, A., Santoro, V., Lubelli, S., Marrone, M., Lozito, P. & Introna, F., "Age assessment using the Greulich and Pyle method on a heterogeneous sample of 300 Italian healthy and pathologic subjects", *Forensic Science International*, Vol. 229 No 1-3, (2013),157.e1-157.e6 ; Santoro, V., Roca, R., De Donno, A., Fiandaca, C., Pinto, G., Tafuri, S. & Introna, F., "Applicability of Greulich and Pyle and Demirjian aging methods to a sample of Italian population", *Forensic Science International*, Vol. 221 No1-3, (2012), 153.e1-153.e5.

<sup>34</sup> Black, S., Aggrawal, A. & Payne-James, J., *Age Estimation in the Living: The Practitioner's Guide*, (Singapore: Wiley-Blackwell.,2010).

<sup>35</sup> Schmeling, A., Geserick, G., Reisinger, W. & Olze, A., "Age estimation", *Forensic Science International* Vol.165 No (2-3), (2007) pp. 178-181.

<sup>36</sup> Santoro, V., Roca, R., De Donno, A., Fiandaca, C., Pinto, G., Tafuri, S. & Introna, F., "Applicability of Greulich and Pyle and Demirjian aging methods to a sample of Italian population", *Forensic Science International*, Vol. 221 No1-3, (2012), 153.e1-153.e5.

**Figure 3:**  
**An example of the application of the Greulich and Pyle atlas method**



(Source: Schmidt *et al.* 2013)

Meanwhile, bone-specific methods use designated standard criteria of the state of maturity of individual elements in the hand skeleton. Schmidt and colleagues (2013) did a comparison study between atlas and bone-specific methods and found no general advantage of either method over the other.

### 3.1.1.4 Behavioural Assessment

In their guidelines, the Royal College of Paediatrics and Child Health (RCPCH) in the UK emphasise the relevance of a child's social history as part of the age assessment, based on the principle that age assessments should be carried out as a holistic evaluation that includes assessing narrative accounts, physical assessment of puberty and growth, and cognitive, behavioural and emotional assessments.

This notion has been criticised because the procedures of assessing behavioural maturity are rarely described in detail. Whether personnel with specific expertise in child development, such as child psychologists and/or paediatricians, should perform the assessments is also unclear.<sup>37</sup> Moreover, being children, it is likely that the refugee in question will not be

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<sup>37</sup> Hjern, A., Brendler-Lindqvist, M. & Norredam, M., "Age assessment of young asylum seekers", *Acta Paediatrica* Vol. 101 No (1), (2012) pp. 4-7.

aware their behaviour is being observed for their age assessment, raising questions on whether informed consent can be properly obtained.<sup>38</sup>

Although behavioural assessments may provide important indications of the maturity of an individual, it is highly influenced by the background and personal experiences of the individual. Being prematurely matured by life experiences is a common future for refugee children; therefore they may present behaviour that is advanced beyond their age.<sup>39</sup>

### 3.1.2 Age Estimation in Adults

Sexual maturity signs, hand ossification, and third molar mineralisation are generally completed by the age of 18 years.<sup>40</sup> Beyond adolescence, the ossification stage of the medial epiphysis part of the clavicle bone can be assessed to help age estimation, because clavicles are typically the last bones in the skeleton to ossify.<sup>41</sup> The clavicle can be examined by performing an additional x-ray, computed tomography (CT), or other imaging modalities.

Besides clavicles, the pelvic bone can also be assessed for age estimation. There are age related changes in the pubic symphysis during the first two decades after sexual maturity that can persist up to 40 years of age, after which the changes will become more degenerative in nature. These degenerative changes can provide a categorical scoring method for age estimation.<sup>42</sup> A survey among forensic anthropologists revealed that the Suchey-Brooks pubic symphysis method was the most common and preferred scoring method used in practice.<sup>43</sup>

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<sup>38</sup> Sauer, P.J., Nicholson, A., Neubauer, D. & Advocacy and Ethics Group of the European Academy of Paediatrics, "Age determination in asylum seekers: physicians should not be implicated", *European Journal of Pediatrics* Vol.175 No 3, (2016) pp. 299-303.

<sup>39</sup> Sauer, P.J., Nicholson, A., Neubauer, D. & Advocacy and Ethics Group of the European Academy of Paediatrics, "Age determination in asylum seekers: physicians should not be implicated", *European Journal of Pediatrics* Vol.175 No 3, (2016) pp. 299-303.

<sup>40</sup> Hillewig, E., De Tobel, J., Cuhe, O., Vandemaele, P., Piette, M. & Verstraete, K., "Magnetic resonance imaging of the medial extremity of the clavicle in forensic bone age determination: a new four-minute approach", *European Radiology* Vol. 21 No 4, (2011) 757-767.

<sup>41</sup> Schmeling, A., Dettmeyer, R., Rudolf, E., Vieth, V. & Geserick, G., "Forensic Age Estimation", *Deutsches Ärzteblatt International* Vol. 113 No 4, (2016) 44-50.

<sup>42</sup> Dudzik, B. & Langley, N. R. (2015), "Estimating age from the pubic symphysis: A new component-based system", *Forensic Science International* Vol. 257, (2015) 98-105.

<sup>43</sup> Garvin, H. M. & Passalacqua, N. V., "Current practices by forensic anthropologists in adult skeletal age estimation", *Journal of Forensic Sciences* Vol. 57 No 2, (2012) 427-433.

There are various other skeletal bones that can be used for adult age estimation. These include the sternal extremity of the rib, the mandible, cranial suture, and many other parts of the human skeleton with varying degrees of success and reliability for forensic application.<sup>44</sup> With the completion of skeletal growth and development, there are only very few age dependent characteristics that can be used to estimate the age of an individual. Subsequently, the older the age of the subject, any method of estimating age will become less accurate.<sup>45</sup>

### 3.1.3 Genetic Ancestry and Isotope Testing

According to the report by Tutton and colleagues (2014), between the year 2009 to 2010, the UKBA conducted the highly criticised Human Provenance Pilot Project (HPPP) with the aim to evaluate the use of genetic and isotope testing to corroborate claims of asylum seekers regarding their nationality. The UKBA suggested that a significant percentage of asylum applicants in the country might be engaging in nationality swapping. Genetic ancestry testing and isotope analysis were planned to be undertaken in cases where the results of personal testimony and language analysis give reason to suspect that an individual claiming to be from Somalia might actually originate from another country.

The basis of genetic ancestry testing is the existing research data on population genetics. Genetic variations and mutations that accumulate within an isolated population can embody distinctive combinations of genes expressed in a DNA code. However, because DNA variants are passed down through generations, it is difficult to pinpoint how recently an individual has lived in a particular geographical location, much less able to reveal the individual's true nationality.

Meanwhile, the basis of isotope testing is that the environment where an individual lives may leave distinctive chemical traces in their bodies. The premise is that there are different proportions of isotopes of

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<sup>44</sup> Franklin, D., "Forensic age estimation in human skeletal remains: current concepts and future directions", *Legal Medicine (Tokyo)* Vol. 12 No 1, (2010) 1-7. ; Mohite, D. P., Chaudhary, M. S., Mohite, P. M. & Patil, S. P., "Age assessment from mandible: comparison of radiographic and histologic methods", *Romanian Journal of Morphology & Embryology* Vol. 52 No 2, (2011) 659-668. ; Chiba, F., Makino, Y., Motomura, A., Inokuchi, G., Torimitsu, S., Ishii, N., Sakuma, A., Nagasawa, S., Saitoh, H., Yajima, D., Hayakawa, M., Odo, Y., Suzuki, Y. & Iwase, H., "Age estimation by multidetector CT images of the sagittal suture", *International Journal of Legal Medicine* Vol. 127 No 5, (2013), 1005-1011.

<sup>45</sup> Ritz-Timme, S., Cattaneo, C., Collins, M.J., White, E.R., Schutz, H.W., Kaatsch, H.J. & Borrmann, H.I.M., "Age estimation: the state of the art in relation to the specific demands of forensic practice", *International Journal of Legal Medicine* Vol.113, (2000), 129-136.

the various elements that are present in different environments. These chemical elements are ingested in local food and drinking water, therefore permeating into body tissues over time. Assuming an individual consumes local food, water and air, isotopes present in their body tissues will reveal the area of their habitual residence. The drawback of isotope testing is that isotope testing cannot specify a unique location of origin.

Archaeologists and forensic investigators in criminal cases produce analysis of isotope measurements from a range of body tissues, including dental and skeletal tissues from human remains. Meanwhile in living subjects, UKBA officers can only access hair and fingernails, which can only provide information about the likely diet of the individual over the past six months to a year. This gives severely limited information, especially considering that a refugee might have spent a significant amount of time away from home before arriving at a host country and applying for asylum.

A fundamental issue of using these tests on a refugee population is that biological information on population genetics and environmental conditions has no direct relationship to an individual's national identity and citizenship. It can be appreciated that the interest in adopting new scientific technologies to test nationality claims reflect the direction of future border control in the UK and possibly other developed countries. However, the example of the defunct HPPP shows that not all methods used by forensic science in criminal cases can be directly applied to the refugee situation.

### 3.2 Forensic Medical Assessments in Refugees

In the Netherlands when an asylum seeker is denied refugee status, the physicians of Amnesty International may intervene by giving medico-legal evidence to authorities that corroborates with the verbal testimony of the asylum seeker,<sup>46</sup> for example giving evidence in form of a forensic medical assessment. However, Article 3 of the 2007 European Council Directive 97/43 states "Special attention shall be given to the justification of those medical exposures where there is no direct health benefit for the person undergoing the exposure and especially for those exposures on medico-legal grounds". This principle is particularly relevant in the case of age estimation in refugees, where the individuals assessed are more likely

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<sup>46</sup> Park, R. & Oomen, J., "Context, evidence and attitude: the case for photography in medical examinations of asylum seekers in the Netherlands", *Social Science & Medicine* Vol. 71 No 2, (2010), 228-235.

to be children and adolescents, whom have greater risks from radiation exposure of x-ray examinations than adults.

Although the exposure to radiation in an x-ray for age assessment is minimal,<sup>47</sup> there are still concerns over exposing children to any level of radiation at all. These are legitimate concerns because it is known that dental radiography has an increased risk for inducing parotid tumours or thyroid cancer.<sup>48</sup> Because of these risks involved, the Royal College of Radiologists in the UK have advised its members that x-ray examinations should only be performed in cases of clinical need, and that radiography solely for the purpose of age determination is unjustified.<sup>49</sup>

It is reasonable to conclude that determining accurate age estimation is evidently a challenging task. One of the main issues of forensic age estimation is that there is currently no standardised procedure of combining the information obtained from multiple age estimation methods into a final reportable age range (RCPCH 2007).<sup>50</sup> Moreover, there have been concerns about consent and privacy of performing examinations that are not necessarily clinically indicated, imposing the development of a trusting relationship between the clinician involved and the patient, especially patients whom are unaccompanied refugee children.<sup>51</sup>

Given all the medical, ethical, and legal problems with age determination, The European Academy of Paediatrics, the French Academy of Medicine, the French National Ethic Committee, and the Dutch National Society of Physicians have all advised that their members should not be involved in age determination in minor aged asylum seekers.<sup>52</sup>

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<sup>47</sup> De Donno, A., Santoro, V., Lubelli, S., Marrone, M., Lozito, P. & Intron, F., "Age assessment using the Greulich and Pyle method on a heterogeneous sample of 300 Italian healthy and pathologic subjects", *Forensic Science International*, Vol. 229 No 1-3, (2013), 157. e1-157.e6 ; Santoro, V., Roca, R., De Donno, A., Fiandaca, C., Pinto, G., Tafuri, S. & Intron, F., "Applicability of Greulich and Pyle and Demirijan aging methods to a sample of Italian population", *Forensic Science International*, Vol. 221 No1-3, (2012), 153.e1-153.e5.

<sup>48</sup> De Sanctis, V., Soliman, A.T., Elsedfy, H., Soliman, N.A., Kassem, I., Elalaily, R., Delbon, P., Di Maio, S. & Millimaggi, G., "A review of the medical diagnostic techniques for forensic age estimation (FAE) in minors (1st part)", *Rivista Italiana di Medicina dell'Adolescenza* Vol. 13 No 2, (2015) pp. 5-12.

<sup>49</sup> Sauer, P.J., Nicholson, A., Neubauer, D. & Advocacy and Ethics Group of the European Academy of Paediatrics, "Age determination in asylum seekers: physicians should not be implicated", *European Journal of Pediatrics* Vol.175 No 3, (2016), 299-303.

<sup>50</sup> Garvin, H. M. & Passalacqua, N.V. "Current practices by forensic anthropologists in adult skeletal age estimation", *Journal of Forensic Sciences* Vol.57 No 2, (2012), 427-433.

<sup>51</sup> Ciaccia, K.A. & John, R.M. "Unaccompanied Immigrant Minors: Where to Begin", *Journal of Pediatric Health Care* Vol. 30 No 3, (2016), 231-240.

<sup>52</sup> Sauer, P.J., Nicholson, A., Neubauer, D. & Advocacy and Ethics Group of the European Academy of Paediatrics, "Age determination in asylum seekers: physicians



On the other hand, a study in Italy on forensic age estimation of living individuals<sup>53</sup> has highlighted a trend in which migrants tend to report their age younger than they actually are, possibly in an attempt to avoid criminal prosecution of illegally entering the country or to reap the benefits and protection that refugee children are entitled to. This phenomenon is thought to be on the rise as requests for political asylum in the EU increases.

Clearly there is a need for further research on different ethnic populations in order to improve the availability of international reference anthropological data and thus provide more accurate age estimation results. It is also the opinion of this paper that considering the risks and uncertainties involved, any medical assessment for the sole purpose of determining age should only be performed in a holistic manner taking into account multiple variables and used as a last resort for settling legal disputes over whether a refugee is entitled to state protection and benefits as a child.

### 3.3 Forensic Mental Health Assessments in Refugees

In Sweden, the potential long-term impact on a child's psychosocial development of remaining in the country instead of repatriation is an important consideration for their asylum application.<sup>54</sup> A careful forensic assessment of the mental health condition of a refugee can be key in determining the legal status of the refugee and reduce the risk of incorrect decisions for deportation in asylum claims.

In the UK, when there are grounds of poor mental health of a refugee applying for asylum, solicitors for the refugee involved might request the treating clinician to produce a medico-legal report. The medico-legal report by the treating clinician is usually required to include full details of the patient's medical history and clear responses stating their professional opinion to specific questions regarding clinical risks in returning a refugee back to their country of origin, taking into account the current medical condition of the refugee, the treatments available in their home country, and the risks involved in travel. The clinician must clarify whether

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should not be implicated", *European Journal of Pediatrics* Vol.175 No 3, (2016), 299-303.

<sup>53</sup> Santoro, V., De Donno, A., Marrone, M., Campobasso, C.P. & Introna, F. "Forensic age estimation of living individuals: a retrospective analysis", *Forensic Science International* Vol. 193 No 1-3, (2009), 129.e1-4.

<sup>54</sup> Keselman, O., Cederborg, A-C., Lamb, M.E. & Dahlström, Ö., "Asylum-seeking minors in interpreter-mediated interviews: what do they say and what happens to their responses?", *Child and Family Social Work* Vol.15, (2010), 325-334.

repatriation would worsen any medical condition of the refugee, either due to inadequate treatment or a specific threat to the refugee's mental and physical health.<sup>55</sup>

A case report from the US<sup>56</sup> detailed how the immigration court granted asylum on the basis of the mental illness suffered by a refugee. It was believed that the refugee would be likely to suffer serious harm upon repatriation to Russia where he originated. Factors considered in this case included the refugee's access to needed medication, access to mental health treatment, and the impact that these would have on his functioning. This case study is important for forensic psychiatrists because it establishes the importance of mental health considerations in court rulings of asylum approval. It is imperative that forensic evaluations describe the predicted impact of repatriation on the mental health of the individual involved.

### 3.4 Forensic Investigation of Torture in Refugees

The definition of torture is explained by the World Medical Association in the 1975 Declaration of Tokyo as "deliberate, systematic, or wanton infliction of physical or mental suffering by one or more persons acting alone or on the orders of any authority, to force another person to yield information, to make a confession, or for any other reason." The UNCAT (1987) defined torture as "...any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purposes as obtaining from him or a third person information of a confession, punishing him for an act he committed, or intimidating or coercing him or a third person, or for any reason based on discrimination of any kind, when such pain or suffering is inflicted by or at the instigation of or with the consent or acquiescence of a public official or other person acting in an official capacity."<sup>57</sup>

There is an estimated one to seven million victims of torture worldwide within the refugee population alone. Although the exact prevalence is difficult to determine, the obvious increase of refugees make it logical to assume that the number of torture victims among the

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<sup>55</sup> Pitman, A., "Asylum application process: the psychiatric patient's experience", *The Psychiatrist* Vol.34, (2010), 344-348.

<sup>56</sup> Daley, C. & Chamberlain, J.R., "Mental Health Considerations for Asylum", *The Journal of the American Academy of Psychiatry and the Law* Vol. 38 No 2, (2010), 278-280.

<sup>57</sup> Campbell, T.A., "Psychological assessment, diagnosis, and treatment of torture survivors: a review", *Clinical Psychology Review* Vol.27 No 5, (2007), 628-641.

population is increasing as well.<sup>58</sup> A study by<sup>59</sup> reported that nearly one-fifth of the total refugee intake in New Zealand between 2007 and 2008 have been survivors of torture. In the majority of the cases studied (73%), there were multiple corroborating confirmations of the torture, including notes from the UNHCR, test results, and/or witnesses.

Another study among Somali and Oromo refugees<sup>60</sup> showed that men and those with higher education backgrounds were no more likely to be tortured than women or those with less education levels. This shows that experiences of torture are prevalent among refugees and it is not discriminatory to a specific set of people within the population.

The psychological stresses involved with torture can even affect the victim's memory, resulting in narrative inconsistencies and a significantly compromised ability to recall details.<sup>61</sup> This can further reduce a refugee's credibility in the eyes of the decision makers in asylum application cases. On the other hand, if a refugee can successfully demonstrate past persecution to relevant immigration authorities, it is more likely the court will look more favourably on their asylum application. The overall goal of forensic medical assessments is to evaluate the degree of consistency between a refugee's account of torture and the findings observed during the assessments.<sup>62</sup>

### 3.4.1 Forensic Medical Examinations of Refugees Subjected to Torture

The first international guidelines for the documentation of torture and its consequences was established in 1999 and titled *The Manual on Effective Investigation and Documentation of Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment*, or commonly known as the Istanbul Protocol. The Istanbul Protocol mandates that "complaints

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<sup>58</sup> Campbell, T.A., "Psychological assessment, diagnosis, and treatment of torture survivors: a review", *Clinical Psychology Review* Vol.27 No 5, (2007), 628-641.

<sup>59</sup> Poole, G.E. & Galpin, G., "Prevalence of victims of torture in the health screening of quota refugees in New Zealand during 2007-2008 and implications for follow-up care", *New Zealand Medical Journal* Vol.124 No 1338, (2011),18-24.

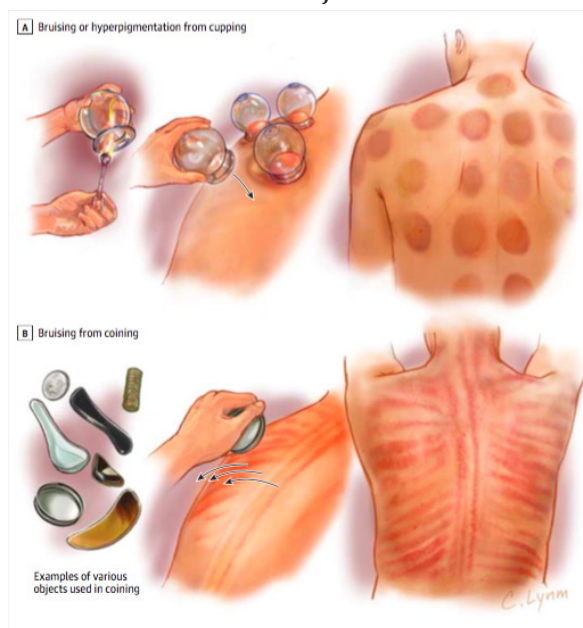
<sup>60</sup> Jaranson, J.M., Butcher, J., Halcon, L., Johnson, D. R., Robertson, C., Savik, K., Spring, M. & Westermeyer, J., "Somali and Oromo refugees: correlates of torture and trauma history", *American Journal of Public Health* Vol.94 No 4, (2004), 591-598.

<sup>61</sup> Meffert, S.M., Musalo, K., McNiel, D.E. & Binder, R.L. (2010), "The role of mental health professionals in political asylum processing", *Journal of the American Academy of Psychiatry and the Law* Vol. 38 No 4, (2010), 479-489.

<sup>62</sup> Arge, S.O., Hansen, S.H. & Lynnerup, N. , "Forensic odontological examinations of alleged torture victims at the University of Copenhagen 1997-2011", *Torture* Vol. 24 No 1, (2014), 17-24.

about ill-treatment must be investigated effectively by competent authorities.”<sup>63</sup> The protocol also includes extensive examination procedure standards and careful ethical considerations when performing the examinations.<sup>64</sup>

**Figure 4:**  
**Cultural health practices (cupping and coining) that may mimic torture injuries**



(Source: Crosby 2013)

During the examination, the patient has to describe how they suffered during torture and name all the consequences they have experienced, the effects of any treatment received, and explain how injuries have healed since then. When necessary, examiners can also consult with dermatologists to distinguish between torture scars and unrelated skin disorders or markings of cultural health practices, such as cupping and coining (depicted in Figure 4).<sup>65</sup>

<sup>63</sup> Arge, S.O., Hansen, S.H. & Lynnerup, N. , “Forensic odontological examinations of alleged torture victims at the University of Copenhagen 1997-2011”, *Torture* Vol. 24 No 1, (2014), 17-24.

<sup>64</sup> Park, R. & Oomen, J., “Context, evidence and attitude: the case for photography in medical examinations of asylum seekers in the Netherlands”, *Social Science & Medicine* Vol. 71 No 2, (2010), 228-235.

<sup>65</sup> Park, R. & Oomen, J., “Context, evidence and attitude: the case for photography

**Figure 5:**  
**Photograph of scars on torture victim two years after the incident,  
 one year after asylum application**



(Source: Park & Oomen 2010)

The examiner's testimony can be supplemented by objective evidence such as forensic photography. Photographs can help illustrate torture experiences that are difficult and traumatic for the victim to recount verbally in court proceedings, especially in unfamiliar and foreign settings.<sup>66</sup> Any lesions detected in the examinations should be photographed as evidence and available for re-evaluation in the future.<sup>67</sup> Re-evaluation of photographs is important because patterns of injuries might not be obvious at the time of examination, yet became rather apparent when the photography images were reviewed during the report preparation.<sup>68</sup> Scars might also fade over time and treatment can affect the

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in medical examinations of asylum seekers in the Netherlands", *Social Science & Medicine* Vol. 71No 2, (2010) pp. 228-235. ; Crosby, S.S., "Primary Care Management of Non-English-Speaking Refugees Who Have Experienced Trauma: A Clinical Review", *The Journal of the American Medical Association* Vol.310 No 5, (2013), 519-528.

<sup>66</sup> Park, R. & Oomen, J., "Context, evidence and attitude: the case for photography in medical examinations of asylum seekers in the Netherlands", *Social Science & Medicine* Vol. 71No 2, (2010), 228-235.

<sup>67</sup> Keten, A., Akçan, R., Karacaoglu, E., Odabasi, A.B. & Tümer, A. R., "Medical forensic examination of detained immigrants: is the Istanbul Protocol followed?", *Medicine, Science and the Law* Vol.53 No 1, (2013), 44.

<sup>68</sup> Stadtmauer, G.J., Singer, E. & Metalios, E., "An analytical approach to clinical

appearance of scars, as in the case of a subject in the study by,<sup>69</sup> pictured in Figures 5 and 6.

Examiners need to look out for typical features of scars that are caused by known torture methods that can be matched to cultural practices in particular geographic regions. Examples of particular physical findings that relate to specific types of torture include:<sup>70</sup> parallel scar lines called “tramline marks” which are caused by whipping with a thin cylindrical object; subcutaneous fibrosis or compartment syndrome in the feet caused by “falanga” which is repetitive beating of the soles of the feet; shoulder dislocation caused by Palestinian hanging; and so on.

**Figure 6:**  
**Significant fading of scars on the same torture victim as Figure 6,**  
**two years after asylum hearing and undergoing treatment**



(Source: Park & Oomen 2010)

For female refugees who are survivors of torture, it may also be necessary to conduct examinations for sexual violence. In a study among female victims of torture that applied for asylum in Sweden,<sup>71</sup> the most

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forensic evaluations of asylum seekers: the Healthright International Human Rights Clinic”, *Journal of Forensic and Legal Medicine* Vol.17 no 1, (2010), 41-45.

<sup>69</sup> Park, R. & Oomen, J., “Context, evidence and attitude: the case for photography in medical examinations of asylum seekers in the Netherlands”, *Social Science & Medicine* Vol. 71No 2, (2010), 228-235.

<sup>70</sup> Park, R. & Oomen, J., “Context, evidence and attitude: the case for photography in medical examinations of asylum seekers in the Netherlands”, *Social Science & Medicine* Vol. 71No 2, (2010), 228-235.

<sup>71</sup> Edston, E. & Olsson, C., “Female victims of torture”, *Journal of Forensic and Legal Medicine* Vol.14 No 6, (2007), 368-373.

common methods of torture found in the study's subjects were blunt force trauma and rape, both vaginal and anal. The study reported that around 22% of the cases in their sample had persisting symptoms of the genital area including dysmenorrhea, amenorrhea, and diffuse pain in the hypogastrium that is correlated to the subject's torture trauma.

After performing a comprehensive and thorough examination, the forensic examiner will then compose a report in plain language that is easily understood by the patient, solicitors, and authorities involved.<sup>72</sup> The report should include at least the following:<sup>73</sup> circumstances of the interview; history of the patient; results of physical and psychological examinations; opinion of the examiner; and authorship.

There are a number of challenges that the forensic examiner might face in assessing torture allegations. These include time constraints to perform thorough and detailed evaluations; limited access to the patient, for example if the patient is being held in immigration detention; the haste and urgent demand for rapid submission of the assessment report; language and cultural barriers; and the emotionally difficult nature of working with torture survivors.<sup>74</sup>

During physical examinations, refugees may also be reluctant to be photographed for their torture scars and injuries. Some refugees might have legitimate concerns that the photographs could reach their torturers and subsequently used against them or their loved ones. The examiner must respect such concerns.<sup>75</sup> Body charts and diagrams can be useful to illustrate injuries found when photography is not possible.

Examiners might also face challenges from the legal system, with their professional qualifications being questioned in court on the basis that "torture medicine" currently does not exist. The examiners' objectivity might also be put in question, as volunteer physicians are mostly considered to be defence witnesses. There might also be a significant time

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<sup>72</sup> Park, R. & Oomen, J., "Context, evidence and attitude: the case for photography in medical examinations of asylum seekers in the Netherlands", *Social Science & Medicine* Vol. 71 No 2, (2010), 228-235.

<sup>73</sup> Keten, A., Akçan, R., Karacaoglu, E., Odabasi, A.B. & Tümer, A. R., "Medical forensic examination of detained immigrants: is the Istanbul Protocol followed?", *Medicine, Science and the Law* Vol.53 No 1, (2013), 40-44.

<sup>74</sup> Stadtmauer, G.J., Singer, E. & Metalios, E., "An analytical approach to clinical forensic evaluations of asylum seekers: the Healthright International Human Rights Clinic", *Journal of Forensic and Legal Medicine* Vol.17 no 1, (2010), 41-45.

<sup>75</sup> Park, R. & Oomen, J., "Context, evidence and attitude: the case for photography in medical examinations of asylum seekers in the Netherlands", *Social Science & Medicine* Vol. 71 No 2, (2010), 228-235.

lapse between the infliction of torture and the examination, as well as the tendency for certain types of torture to not leave a clear permanent sequelae, making it difficult to find concrete evidence of torture.<sup>76</sup> The absence of scars, injuries, or physical harm should not be equated to the absence of torture.<sup>77</sup>

### **3.4.2 Forensic Mental Health Examinations of Refugees Subjected to Torture**

Forensic psychiatry or mental health trauma experts have an important role in collaborating with immigration attorneys or law clinics in planning sensible strategies to effectively obtain necessary factual details about the refugee's traumatic experiences. Important techniques include titration of exposure to recollection of events; recognition of instances where the individual are shutting down or avoiding their memories; understanding how to start and end conversations to maximize the emotional capacity of the victim to tell their stories.<sup>78</sup>

Forensic psychiatrists can also give opinion regarding the possible impact of repatriation on the mental health of the refugee. The assessment of any possible impact should take into account the availability of any treatment the refugee might need for their conditions and also how potential re-exposure to traumatic cues in their home country could affect their current mental health.<sup>79</sup>

Torture victims who apply for asylum may face high levels of psychological stress in the application process, particularly in cases when they must testify and be subjected to potentially aggressive cross-examinations. In cases like this, forensic psychiatry or mental health trauma experts can be helpful in forming strategies with immigration attorneys or

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<sup>76</sup>Stadtmauer, G.J., Singer, E. &Metalios, E., "An analytical approach to clinical forensic evaluations of asylum seekers: The Healthright International Human Rights Clinic", *Journal of Forensic and Legal Medicine* Vol.17 no 1, (2010) pp. 41-45.

<sup>77</sup>Stadtmauer, G.J., Singer, E. &Metalios, E., "An analytical approach to clinical forensic evaluations of asylum seekers: the Healthright International Human Rights Clinic", *Journal of Forensic and Legal Medicine* Vol.17 no 1, (2010) pp. 41-45.; Campbell, T.A., "Psychological assessment, diagnosis, and treatment of torture survivors: a review", *Clinical Psychology Review* Vol.27 No 5, (2007), 628-641.

<sup>78</sup>Meffert, S.M., Musalo, K., McNiel, D.E. & Binder, R.L. (2010), "The role of mental health professionals in political asylum processing", *Journal of the American Academy of Psychiatry and the Law* Vol. 38 No 4, (2010), 479-489.

<sup>79</sup>Meffert, S.M., Musalo, K., McNiel, D.E. & Binder, R.L. (2010), "The role of mental health professionals in political asylum processing", *Journal of the American Academy of Psychiatry and the Law* Vol. 38 No 4, (2010), 479-489.



law clinics to maintain the mental wellbeing of the refugee. These strategies may include:<sup>80</sup> emotional preparation for the refugee; frequent checks on emotional welfare; rallying social, community and spiritual supports for the individual; identify warning signs of mental health consequences from the stress; and recognise mental health emergencies.

#### 4. Conclusion

Forced migration is a major social, political, legal, and public health challenge for the world today. Host countries that provide asylum have legal obligations to protect refugees. Refugees are entitled to humanitarian aids to ensure their wellbeing, including access to health care services. However, in practice, governments routinely deny these rights through complex legal procedurals.<sup>81</sup> Admittance of refugees and state support for their resettlements has been perceived as a strain to local resources of the host country.

Refugees have been the subject of many recent heated and polarised public debate.<sup>82</sup> Media headlines and public sentiment has seemingly become increasingly negative towards refugees. To make matters worse, government policies regarding refugees appear to constantly change depending on political climate. There is an urgent need for decision makers to guide a sensible public discussion about refugees and their rights and entitlements for aids before the number of people affected increase out of control.

It should be noted that research shows that the primary reason of migration for refugees is their experience of some form of violence. Previous experiences of torture are highly common within the population.<sup>83</sup> The journey of seeking refuge to another country is often wrought with perilous

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<sup>80</sup> Meffert, S.M., Musalo, K., McNiel, D.E. & Binder, R.L. (2010), "The role of mental health professionals in political asylum processing", *Journal of the American Academy of Psychiatry and the Law* Vol. 38 No 4, (2010), 479-489.

<sup>81</sup> Bradby, H., Humphris, R., Newall, D. & Phillimore, J., "Public health aspects of migrant health: a review of the evidence on health status for refugees and asylum seekers in the European Region", Health Evidence Network synthesis report 44, Copenhagen: WHO Regional Office for Europe. 2015.

<sup>82</sup> Allsopp, J., Sigona, N. & Phillimore, J., "Poverty among refugees and asylum seekers in the UK: An evidence and policy review", IRiS Working Paper Series No. 1/2014, Birmingham: Institute for Research into Superdiversity. 2014.

<sup>83</sup> Poole, G.E. & Galpin, G., "Prevalence of victims of torture in the health screening of quota refugees in New Zealand during 2007-2008 and implications for follow-up care", *New Zealand Medical Journal* Vol.124 No 1338, (2011), 18-24.

danger.<sup>84</sup> Even after successfully arriving in a host country, most refugees either live in detention, overcrowded refugee camps, or in poverty.<sup>85</sup> All these factors may result in serious health consequences, not only for the refugee population but also to the public health of the host country.

With the fate of their lives at stake, a refugee trying desperately to flee from danger still has to bear the burden of proof to provide evidence solidifying the grounds of their asylum claim.<sup>86</sup> The process of asylum claim is known to stretch out for years, leaving refugees in a constant state of legal uncertainty with unclear fates. Existing systems in many countries are struggling to keep up with the ever-increasing number of refugees streaming in.<sup>87</sup>

Forensic assessments that can aid refugees in their asylum proceedings include age estimation for minors, physical and mental health assessments, and torture investigation. In the context of torture investigation, a forensic assessment should include a complete history, injuries, physical sequelae, psychological sequelae, and the possible impact of repatriation. Medical forensic evidence can increase the likelihood of successful asylum application up to a three-fold.<sup>88</sup>

Despite the various challenges associated with refugees, the spirit of forensic science has always been about prevailing justice without discrimination. One must bear in mind that a single piece of legally admissible evidence of torture can mean the difference between a refugee gaining protection of the host country or being sent back to an uncertain fate with potentially devastating consequences.<sup>89</sup> It is within the professional

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<sup>84</sup> Deutsch, M., Koskinas, J., Emmanuel, T., Kountouras, D. & Hadziyannis, S., "Heat stroke and multi-organ failure with liver involvement in an asylum-seeking refugee", *Journal of Emergency Medicine* Vol.31 No 3, (2006), 255-257.

<sup>85</sup> Bull, M., Schindeler, E., Berkman, D. & Ransley, J., "Sickness in the System of Long-term Immigration Detention", *Journal of Refugee Studies*. 2012. ; Allsopp, J., Sigona, N. & Phillimore, J., "Poverty among refugees and asylum seekers in the UK: An evidence and policy review", IRIS Working Paper Series No. 1/2014, Birmingham: Institute for Research into Superdiversity. 2014.

<sup>86</sup> Meffert, S.M., Musalo, K., McNeil, D.E. & Binder, R.L. (2010), "The role of mental health professionals in political asylum processing", *Journal of the American Academy of Psychiatry and the Law* Vol. 38 No 4, (2010) pp. 479-489.

<sup>87</sup> Pitman, A., "Asylum application process: the psychiatric patient's experience", *The Psychiatrist* Vol.34, (2010) pp. 344-348. ; Turkish Medical Association (2016), "War, Migration and Health; Experience of Turkey", [https://www.ttb.org.tr/kutuphane/signinmacilar\\_rpr\\_en.pdf](https://www.ttb.org.tr/kutuphane/signinmacilar_rpr_en.pdf) (accessed 30 Aug 2016).

<sup>88</sup> Ahrenholz, N.C., Haider, M. & Niyogi, A., "Caring for Refugee and Asylee Torture Survivors in Primary Care", *SGIM FORUM* 38(10), 2015.

<sup>89</sup> Park, R. & Oomen, J., "Context, evidence and attitude: the case for photography in medical examinations of asylum seekers in the Netherlands", *Social Science & Medicine* Vol.

duty of forensic experts to contribute what they can for refugees to receive fair rulings in asylum proceedings.

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