



Child trafficking and the European migration crisis: The role of forensic practitioners



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ABSTRACT

Trafficking in children is one of the worst forms of human rights violation and is categorised as a serious crime. Children at high risk of becoming victims of trafficking are runaways, children with a history of abuse, and migrant children. Internationally, cases of child trafficking are increasing the most in Europe, which is likely the result of the current migration crisis. In crises, preventing and combating human trafficking needs to be prioritized, considering that the aims of humanitarian action include saving lives, easing suffering and preserving human dignity. The involvement of forensic practitioners in investigations of cases of child trafficking mainly concerning the identification of victims may save lives and certainly alleviate suffering of the child victims and their families searching for them. Moreover, by aiding the prosecution process through thorough documentation and expert reporting forensic practitioners may contribute to the protection, rehabilitation and possibly compensation of the child victims, and thus to the restoration of their rights and dignity. So far, forensic practitioners were rarely specifically mentioned as actors in the counter-trafficking efforts in the multitude of policies, regulations, guidelines and recommendations concerning different aspects of child trafficking. This seems surprising considering that the expertise and experience of practitioners from forensic sciences including cyber forensics, document analysis, forensic biology, anthropology, and medicine can be utilised for gathering intelligence in cases of suspected human trafficking, for identifying the victims as well as perpetrators, and for securing evidence for legal proceedings as this paper shows. While this article mainly discusses the role of forensic pathologists and anthropologists, with a specific focus on the identification of child victims of trafficking in the context of the European migration crisis, the notions regarding the contribution of forensic sciences to the counter-trafficking efforts can be adapted to other geographical and sociopolitical contexts.

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1. Introduction

Trafficking in children is one of the worst forms of human rights violations and is categorised as a serious crime. Per definition (compiled from the Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime [1] and the Council of Europe Convention on Action against Trafficking in Human Beings [2]), child trafficking means the recruitment, transportation, transfer, harbouring, or reception of a child, including the exchange or transfer of control

over such person, for the purpose of exploiting such a child. The consent of the child, implied or real, is immaterial. A child victim of trafficking is any person younger than 18 years against whom the act of trafficking has been committed. If the age of the person is not known but there are reasons to presume that the person is a child, the person shall be considered under the definition of a child, until his/her age is established. The various types of exploitation considered in the definitions are, among others, exploitation for prostitution or other forms of sexual abuse (including child pornography), forced marriage, forced labour or domestic servitude, slavery or practices similar to slavery, forced begging, exploitation as child soldiers, for criminal activities, such as theft and drug smuggling, removal of organs or selling new-born babies and children for adoption [1,2].

The definition of child trafficking differs from that of the general definition of trafficking in human beings in that only two of the defining elements of the punishable offence, that is the act and the

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purpose (exploitation), but not the means (threat or use of force or other forms of coercion, abduction, fraud, deception, abuse of power or of a position of vulnerability) need to have been established, emphasizing the increased vulnerability of children [1–3]. Children are considered as being vulnerable not only because of their level of maturity and age as such, but also because of other factors, including socioeconomic status, migration status, ethnic background or lack of parental care that may exacerbate their vulnerability on an individual basis. Children at high risk of being trafficked are runaways, migrant children, and children with a history of abuse [4–10].

For instance, of the more than 18,000 runaways reported to the U.S. National Center for Missing & Exploited Children (NCMEC) in 2016, one in six were likely victims of child sex trafficking, with more than three quarters of these children being in the care of social services when they ran [11]. In Europe, as many as 10,000 migrant children are estimated to be missing [12], many of whom have disappeared from reception centres, but many have not even registered with the authorities [12,13]. These missing migrant children are considered to be at extremely high risk of being victimized by traffickers [4,9,10].

Human trafficking in general has been shown to surge during and in the aftermath of humanitarian crises [5,14–16]. Several risk factors related to human trafficking are similar in both crisis and non-crisis situations, although crises give rise to specific risks, which may vary depending whether the crisis arose from an armed conflict, natural disaster or protracted situations, such as the current migration crisis [5]. As a consequence, organizations like the International Organization for Migration (IOM) have called for counter-trafficking measures to be viewed as immediate life-saving action and be routinely incorporated into protection approaches implemented during all types of emergencies [5]. In a survey of more than 200 humanitarian practitioners, almost all responded that preventing and combating human trafficking should be considered a priority in humanitarian action [5].

The aim of this paper is to outline how the experience and knowledge of forensic practitioners can be implemented in the fight against child trafficking, with specific focus on the identification of child victims of trafficking in the context of the European migration crisis. Since describing how forensic scientists from different fields of expertise may aid in actions against child trafficking would exceed the scope of this paper, we focus on the role of forensic pathologists and anthropologists (referred to as forensic practitioners throughout the text).

In line with the aims of humanitarian action, which include saving lives, easing suffering and preserving human dignity during and in the aftermath of crises, the forensic practitioners' expertise regarding personal identification and assessment of signs of violence and abuse pertaining to investigations of cases of child trafficking may save lives and certainly alleviate suffering of the child victims and their families searching for them. Considering that the basic human rights, such as the right to identity, life and development of children as emphasized in the Convention on the Rights of the Child (CRC) are certainly breached in the trafficking scenario [7,17,18], forensic practitioners may contribute to the restoration of the trafficked children's rights and human dignity by aiding the prosecution process through thorough documentation and expert reporting.

The article sets off by referencing the available statistics on child trafficking to emphasize the extent of the problem, followed by sections on how child trafficking is linked to migration and the issue of missing children. The introductory part finishes off with short overviews of the main legal instruments concerning child trafficking and counter-trafficking efforts, and of specific guidelines and checklists focusing on identification of child victims of trafficking. The main body of the article discusses the role of

forensic practitioners in relation to the three main domains of the counter-trafficking action – prevention, protection, and prosecution within the context of the information provided by the introductory sections.

1.1. Statistics on child trafficking

No comprehensive reliable statistics exists so far on child trafficking due to several reasons, including the fact that trafficking is to a large extent a hidden crime and that the crime of trafficking may be inconsistently reported, recorded and prosecuted by different countries mainly because of different perceptions of who is considered a victim of trafficking [19,20]. For instance, in some countries victims are preferentially registered if they agree to cooperate with the authorities in the investigation and prosecution of traffickers, while in others victims may not be registered at all if they refuse to share their details with the authorities or do not consider themselves to be victims [20,21]. In addition, child trafficking is often closely linked with other forms of criminal offences, such as financial crime, benefit fraud, property crimes, falsification of documents, smuggling of migrants, drug trafficking, and child pornography, which may be investigated alongside trafficking and be used as surrogate targets, so that cases of child trafficking are not being prosecuted or recorded as such [12,22].

Depending on the source of information or region, children were reported to comprise between 2% and 64% of victims of trafficking [12,20,23]. The International Labour Organization [24] estimated that about 5.5 million children were trafficked between 2002 and 2011. In the European Union (EU), Eurostat [19] provided information on registered victims, suspects, prosecutions and convictions collated from a range of sources, including the police, non-governmental organizations, and immigration authorities. Between 2010 and 2012, more than 30,000 identified and presumed (victims who have met the criteria of the EU Anti-Trafficking Directive [3] but have not been formally identified by the relevant authorities as a trafficking victim or who have declined to be formally or legally identified as a trafficking victim) victims of trafficking, of whom more than 5000 were children, were registered in 28 EU Member States [19]. Of the total number, girls comprised 16% and boys 3% of the victims; 17% were aged between 12 and 17 years and 2% were younger than 12 years [19]. Globally, 20% of all trafficking victims in 2014 were girls and 8% were boys [23].

In the EU, more than two-thirds of the victims registered between 2010 and 2012 were trafficked for the purpose of sexual exploitation, 19% for labour exploitation and 12% for other forms of exploitation such as forced criminal activities, selling of children or organ removal [19,20]. Children comprised 14% of victims of trafficking for sexual exploitation, and they were commonly victims of trafficking for other forms of exploitation, mainly forced criminal activities, including forced begging, drug production and trafficking, and benefit fraud [19,20]. Worldwide, the United Nations Office on Drugs and Crime (UNODC) reported that in 2014 54% of victims were trafficked for sexual exploitation, 38% for forced labour, and 8% for other forms of exploitation [23].

1.2. Child trafficking and migration

Trafficking in persons, including children is a truly global problem, with different types of trafficking being more or less prevalent in different parts of the world at different times. Human trafficking has been reported from 140 of the 196 countries in the world, and victims of 160 nationalities have been identified [23]. The diversity of victims has been emphasized by the National Crime Agency in the UK [25], who found that potential victims of trafficking recorded by the National Referral Mechanism came

from more than 100 different countries; with 30% of the total number of referrals being for children.

In Europe, the current migration wave is considered to be the largest humanitarian crisis since World War II considering both the number of deaths of migrants who attempt to cross to Europe by sea or land and the large number of survivors in need of shelter, food, education and health care [26,27]. Among migrants, migrant children are recognised as being particularly at risk of becoming victims of trafficking, especially when they are separated from their parents or relatives during the journey, or travel unaccompanied [4,9,10]. However, seemingly accompanied children may be at risk, since the accompanying adult may not be their real parent, relative or guardian [28,29]. Indeed, current reports suggest that internationally child trafficking is increasing most sharply in the EU, which is likely associated with the migration crisis [12,20]. For instance, a 300% increase in Nigerian women and girls leaving Libya for Europe was noted, and it is suspected that about 80% of these women and girls are trafficked [9,10,20].

In relation to this trend, Europol [12] reported that traffickers increasingly abuse legal migration legislation and asylum systems, often forcing non-EU victims to request asylum on arrival in Europe, which then allows the traffickers to move the victims more easily across the EU. In 2015, more than 400,000 children applied for asylum in Europe [19]. Two thirds of these children were younger than 14 and one fourth were unaccompanied at the time of registration [19]. In comparison, the Office of Refugee Resettlement in the USA has assumed custody of approximately 25,000 unaccompanied children in 2012 [30].

Children migrate for a variety of reasons ranging from a desire for better education and lifestyle to escape poverty, natural catastrophes or abusive situations at home or in the society of their country of origin [13,31]. Some are asylum seekers fleeing war, or persecution in their home countries, while others migrate in search of economic opportunities, or to join parents or relatives already living in the destination country [13,31,32]. Many of these factors, including poverty, past abuse, and experience of violence have also been identified as characteristic for child victims of trafficking [6,33].

Children and unaccompanied/separated children in particular are vulnerable at any point of their migration journey [4,29,34,35]. IOM [36] reported that the results of a survey undertaken among migrants in Italy between October and November 2016 showed that 78% of children experienced situations typical for trafficking and other exploitative practices during their migration journey, mainly in transit countries. Even when they reach the country of destination they are still at increased risk of being trafficked since their unfamiliarity with new surroundings, separation from family and friends, communication (linguistic) challenges, social isolation, often bad living conditions, unfamiliarity with climate and diet, challenges regarding school enrolment, healthcare entitlement or their legal/migration status may be used by traffickers in their coercion practices [18,34,35,37].

In the context of the migration crisis, it is worth noting that trafficking in human beings, primarily a crime against a person and a violation of human rights, differs from human smuggling or facilitated migration, which is considered to be a crime against the State [1,2,38]. In addition, the former involves the use of illicit means, such as deception and coercion and exploitation by the traffickers and for a person to be trafficked there is also no need to cross a border or be physically transported [1,2]. In general, it is assumed that most migrants coming to Europe from Africa and Asia are smuggled at least at some point of their journey, but the extent of trafficking is unclear [22,39]. However, Europol and UNODC [12,23] report that traffickers take advantage of the current migration wave and often use smuggling networks and routes for their purpose. Smuggled persons, and children in particular, are

vulnerable to becoming victims of trafficking [12,39]. In 2015, of the more than one million people who arrived by sea (thus were smuggled) in the EU, 31% (more than quarter of a million) were children, with the number of children steadily increasing, from 16% in June 2015 to 35% in April 2016 [27,40]. Notably, according to the Article 2 of the CRC [17], child victims of either trafficking or smuggling are entitled to the same protection as nationals of the receiving State in all matters, so in the case of children the difference between trafficking and smuggling concerns only the process of prosecution, not the identification and protection of the child (victim).

The European Commission Communication on the protection of children in migration [41] emphasizes the need to protect all migrant children at all stages of their migration journey, including the need to improve the identification of children after arrival in the EU, to train personnel involved in reception and assessment of the children (for example, in the area of age assessment), and to ensure that the children receive an age-adequate treatment. The Communication [41] acknowledges that migrant children are at high risk of experiencing violence, trafficking or exploitation along migration routes, may go missing, or become separated from their families, naming prevention of child trafficking as one of the key actions requiring a concerted effort by the Member States.

Besides the high risk of being trafficked, migrant children and young adults under 25 years have been shown to be increasingly vulnerable to re-trafficking [12,37,42], since they may perceive that traffickers help them reach their destination, find a job, or avoid authorities, for example for fear of being extradited or the traffickers force them to return under their control [35,37].

1.3. Missing children and child trafficking

Although the reported numbers of child victims of trafficking are considered unreliable and likely underestimated, an overall increase of cases of child trafficking and smuggling has been noted in the EU [12,20,43]. This trend seems to be closely associated with the sharp increase in the population at risk, that is in the numbers of migrant children, and specifically missing unaccompanied migrant children [12,20,40]. There were approximately 250,000 children reported missing in Europe in 2015 [44]. Of these, 2% (5000) were unaccompanied migrant children (reported as a separate category only in 12 Member States and counting mainly disappearances from institutional care). The age of these children ranged from four to 17 years, the majority being 15–16 years at the time of going missing.

Overall, 46% of the children reported as missing in 2015 were found within the same year, while only 27% of the missing unaccompanied migrant children were located [44]. These are however only children who were reported to the missing children hotline. It has been reported that in Hungary about 90–95% of the approximately 8800 migrant children registered as asylum seekers in 2015 went missing from reception centres, while in Germany 4749 unaccompanied children were considered to be missing by the German Federal Criminal Police, of whom almost 10% were younger than 13 years [40]. Notably, the sum of these two figures already exceeds the number of missing unaccompanied migrant children reported to the hotline, confirming the concerns that unaccompanied children are rarely reported as missing although they are categorised as being particularly vulnerable to becoming victims of trafficking and other crimes [12,20]. In addition, a report on missing children in the EU [45] found that the response from authorities for missing unaccompanied migrant children varied widely among Member States, depending on the circumstances of the disappearance, the age of the child or the registration status (asylum seekers or not). These cases were often given lower priority than cases of missing native children, were only investigated after a waiting period, or in cases of unaccompanied

migrant children going missing from reception centres may have not been investigated at all and the asylum applications of the children were withdrawn.

In general, placement into institutional care and the subsequent high rate of going missing either in countries of transit or destination seems to be linked to the high risk of migrant children to be under the influence of traffickers [20,39,43,46]. Disappearances of migrant children from institutional care have been observed in Europe for at least two decades [39], although little has been done so far to clarify the reasons for these disappearances and thus to prevent them. Only recently a number of EU-funded projects have focused on the vulnerabilities of migrant children with respect to child trafficking, such as the CONNECT (led by Save the Children) [47] and SUMMIT (Safeguarding Unaccompanied Migrant Minors from going Missing by Identifying Best Practices and Training Actors on Interagency Cooperation) [48] projects. Among others, the actors in the CONNECT project acknowledge that adolescents may decide to leave the reception centres and institutional care on their own accord [47], but, regardless, they are still children gone missing when in care of the State (and at high risk of becoming victims of trafficking) so efforts need to be made to locate these children.

The results of the CONNECT project showed a rise in the disappearances of migrant children in Italy, with 24% of unaccompanied children registered in reception centres going missing in 2013, while in the first half of 2015, 62% of unaccompanied children arriving via boat went missing [47]. Moreover, many children do not register on arrival, and these children are extremely vulnerable since there is little chance for these children to be traced. In 2014, about 12,000 unaccompanied children arrived in Italy but only about one fifth of these children applied for asylum [19,43].

Apart from the underreporting of the missing unaccompanied migrant children in Europe, unaccompanied migrant children (trafficked or not) may not be reported as missing due to the fact that in many countries of their origin there are no missing children registries [49]. Moreover, when children are separated from their parents during their migration journey, parents searching for their children in the countries of transit or destination may have some information about the children's approximate whereabouts from fellow migrants or they see their children in documentaries or news feeds alive but cannot find them due to the lack of central reporting and databases. In addition, even if their register upon arrival in the destination country, young and traumatized children may find it difficult to provide comprehensive information about themselves, such as their full name, or where they come from. Consequently, trafficked migrant children may be missed "three times over": in the country of origin, where parents/relatives may still reside, from the reception centre or institutional care (often in a transit country), and in the country of destination, where relatives or friends of the family may report the child missing when he/she fails to join them as expected. Unfortunately, some migrant children may not be missed at all, since they may have no family left in the country of origin or elsewhere, or their family does not expect to hear from them (and may have actually sold them to the traffickers [18,46,50]), and they may not be reported as missing in the country of transit or destination either because they have never (been) registered or the reception centres do not report them as missing. These children are obviously extremely vulnerable to becoming victims of trafficking, since their "non-existence" will largely limit the possibilities of their identification.

1.4. International and European legal instruments concerning child trafficking

The two main legal instruments regarding trafficking in human beings are the internationally recognised Protocol to Prevent,

Suppress and Punish Trafficking in Persons, Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime (so-called Palermo Protocol [1]) and the Council of Europe Convention on Action against Trafficking in Human Beings [2], which is specifically relevant in Europe. The Palermo Protocol has so far been ratified by 147 countries, while the Council of Europe Convention was ratified by 47 countries. It needs to be kept in mind that this type of legislation is only available for less than 20 years, and national legislations incorporating the notions of these international treaties have started to emerge only recently.

When discussing children as victims and child protection in general, the United Nations Convention on the Rights of the Child [17] needs to be considered with its overarching principles of best interest of the child, non-discrimination, the right to protection, the right to life, survival and development, and respect for the views of the child. These principles constitute the basis for the majority of legal documents, protocols and guidelines concerning children in general and child victims of trafficking in particular. The Convention was ratified by 192 countries in the world, the highest number among this type of international documents.

Apart from the Council of Europe Convention [2], the legislation and policy related to human trafficking in the EU has been mainly guided by the Directive 2011/36/EU on preventing and combating trafficking in human beings and protecting its victims [3], which has been incorporated into the national legislation of the majority of EU Member States within three years of its issue. The Directive emphasizes the need to increase the number of investigations and prosecutions of perpetrators, and to establish effective mechanisms for the early identification and protection of victims.

The EU Strategy towards the Eradication of Trafficking in Human Beings (2012–2016) [32] was developed to support the implementation of the EU Anti-Trafficking Directive [3] and summarises the priorities for counter-trafficking actions into five areas of focus, which can be recapped as follows:

- a. Promotion of prevention of human trafficking,
- b. Identification, protection of and assistance to victims of trafficking, with a particular emphasis on protection of children who are considered to be particularly vulnerable to become victims of trafficking or re-trafficking.
- c. Improvements in the prosecution of traffickers and prosecuting human trafficking as a serious crime.
- d. Enhancement of coordination and cooperation among actors, promotion of multi-sectorial and multi-disciplinary approaches, and addressing training needs in a multidisciplinary context.
- e. Effective information gathering and implementation of new intelligence sources in the counter-trafficking measures and response, including creation of EU-wide systems for data collection.

One of the major points addressed in the EU Strategy concerns identification of victims by including recommendations such as the establishment of National and Transnational Referral Mechanisms, which describe procedures and provide a set of criteria for improved identification, referral, protection of and assistance to victims and list relevant public authorities and civil society responsible for the implementation of these procedures, and development of guidelines that would facilitate the identification of victims, including a list of indicators that would help practitioners, such as border and customs officers, law enforcement officials, civil society organizations and health care personnel to identify victims of trafficking [32]. The need for multi-agency cooperation is further highlighted in the recommendation to establish multidisciplinary units to fight serious and organized crime, which will be apt in gathering intelligence nationally and

internationally that would facilitate detection of victims and perpetrators of human trafficking as well as prosecution of traffickers and promoting information exchange and coordination of counter-trafficking efforts.

Following on the contents of the EU Anti-Trafficking Directive [3], which identified trafficking in human beings and in children in particular as a priority for action, several guidelines have been published on topics ranging from victim identification, protection, and assistance to intelligence gathering, border control and immigration strategies, and prosecution of traffickers [5,7,51–53]. In addition, the Group of Experts on Action against Trafficking in Human Beings (GRETA) was founded in 2008 as a monitoring body for the implementation of the Council of Europe Convention on Action against Trafficking in Human Beings. Since human trafficking is closely linked to migration, numerous documents and calls for action have also focused on the specific risks for migrants and particularly unaccompanied or separated migrant children [4,5,9,27]. In the European Agenda on Migration 2015 [54], the setting up of the ‘hotspot’ approach was announced, where the European Asylum Support Office (EASO), Frontex and Europol will work with Member States receiving the migrants first (for example, Italy and Greece) to promptly identify, screen (for example, for country of origin and age), register and fingerprint incoming migrants. This action is seen as a proactive way to prevent the exploitation of migrants.

Surprisingly, in this multitude of legal documents, recommendations and guidelines on identification and protection of victims of trafficking, forensic practitioners have been rarely specifically mentioned as key actors in the counter-trafficking efforts.

1.5. Guidelines and checklists facilitating identification of child victims of trafficking

The existing guidelines, which provide practical advice on how to identify child victims of trafficking agree that indicators such as whether a child has any documents, speaks the language of the country, lives under constant supervision and in substandard housing, does not live with parents or other legal guardians, is involved in criminal or illegal activity or has visible marks of harm and abuse may be the principal signs that the child might be trafficked [29,55–57]. These indicators may be complemented by information related to travel arrangements, for instance whether the child possesses a forged passport, the child’s working conditions or the child’s health status [29,55–57]. In addition, the set of indicators regarding children needs to account for both age and gender, considering that trafficking in human beings has strong gender-specific aspects concerning among others the type of exploitation: women and girls have been shown to be more commonly trafficked for exploitation in the sex industry or for domestic work, while men and boys have been predominantly trafficked for forced labour and organ removal [23,29].

Health authorities have been mentioned as potentially having an important role in identifying trafficked and exploited children [57,58], but the role has not been particularly specified. Recently, a number of publications has emerged that discusses the role of health care providers, mainly emergency department personnel in the identification of victims of human trafficking [58–64]. Commonly, victims of trafficking may not be able or willing to disclose their situation and seek assistance from law enforcement but since up to 88% of persons in a trafficking situation were shown to have sought medical help [65–67], health care providers may indeed encounter opportunities to identify and advise trafficking victims.

A number of publications provides checklists of trafficking indicators to allow medical practitioners to screen their patients for signs of trafficking, while all emphasize the need for training

and further education of medical personnel [62,63,68]. Although the checklists are mostly aimed at adult victims of trafficking, some mention the particularities concerning child victims [55,62,68]. The checklists include among others, signs of physical abuse, torture or unexplained injuries (including bruising, burns, cuts, fractures, broken teeth), presence of neurological conditions (including head injury, headaches or migraines, unexplained memory loss, insomnia, difficulty concentrating), cardiovascular, respiratory or gastrointestinal conditions that appear to be caused or worsened by stress, dietary health issues (including severe weight loss, malnutrition, loss of appetite), reproductive issues (including sexually-transmitted infections, genitourinary issues, repeated unwanted pregnancies, forced or pressured abortions, genital trauma, sexual dysfunction, retained foreign body), substance use disorders, and other health issues (including effects of prolonged exposure to extreme temperatures, effects of prolonged exposure to industrial or agricultural chemicals, somatic complaints). Sexually exploited children may have tattoos as a form of branding [58,69].

Lederer and Wetzel [65] emphasized that the key finding in victims of trafficking for sexual exploitation are injuries from physical violence, including signs of being kicked, punched, or beaten, head or facial injuries, and any signs of forced sex. Although these may be found also in victims of domestic violence, in victims of human trafficking they often occur in combination with a history of (multiple) abortions or sexually transmitted diseases. Presence of signs of severe violence, such as strangulation, stabbing, cigarette burns or gunshot wounds may be further important clues for identification of trafficked persons.

2. Discussion

2.1. The role of forensic practitioners in relation to the three P’s of the counter-trafficking action: Prevention, protection and prosecution

The three P’s of counter-trafficking efforts are prevention, protection and prosecution [20], all of which are clearly addressed in the legal instruments and recommendations concerning human trafficking [1–3,12,21,among others]. The role of forensic practitioners in the fight against child trafficking seems to have been limited so far, considering that they have rarely been specifically mentioned as actors in the multitude of regulations, guidelines and recommendations regarding counter-trafficking efforts. In contrast, the handful of recently emerging specialized handbooks and guidelines targeting health care providers and focusing on the role of medical professionals in the identification of victims of trafficking emphasise the importance of the medico-legal or forensic expertise [62,63,68].

One of the key advantages of forensic practitioners (for instance in comparison with health care professionals) when coming into contact with presumed victims of trafficking is their experience to work and report in the context of legal systems and requirements, to make observations and assess findings not only as clues for a medical diagnosis but also as evidence that may be used in legal proceedings. On the other hand, forensic practitioners are to a large extent health care providers in that they act as independent experts, in contrast to law enforcement or immigration authorities. The independent position may help them to build rapport with the presumed victims of trafficking with their often complicated (perceived or actual) status within the migration or criminal law.

In spite of the existence of various manuals and checklists of indicators for victim identification, there is still a paucity of guidelines that provide practical recommendations for the identification of child victims of trafficking and comprehensively address the triad of identification – as a child, as a person and as a victim of trafficking. Moreover, as Organization for Security and

Cooperation in Europe (OSCE) believes “the mere existence of indicators and checklists does not lead to effective victim identification” [7, p. 18]. It seems rather that to effectively facilitate victim and perpetrator identification in cases of human trafficking the experience and expertise of professionals from different disciplines and organizations, who can provide practical advice and skill set for addressing the various aspects of the counter-trafficking efforts, need to be engaged in a well-coordinated manner [7].

Forensic practitioners can certainly provide both practical and theoretical know-how relevant for the three main areas of the counter-trafficking action – prevention, protection, and prosecution. In the following sections, the potentially pertinent experience and expertise of forensic practitioners are discussed with special focus on the identification of child victims.

2.1.1. Prevention

The main aims of preventative measures targeted at human trafficking are threefold: (1) to eliminate the root causes, such as poverty, gender inequality, and demand (2) to identify vulnerable individuals who may become victims of trafficking, and (3) to identify the traffickers; thereby disrupting the trafficking process either by stopping the vulnerable persons to become victims of trafficking (or to be re-trafficked) through awareness raising and assistance or by stopping the traffickers from causing further victimization by effective prosecution of the crime.

Civil society organisations, among others, believe that for an effective prevention of trafficking, particularly in the migration scenario, the root causes need to be addressed, including poverty, gender inequality and traditional social structures in the countries of origin of the victims, the lack of safe and regular migration channels, and also the demand for cheap and exploitative labour (including prostitution) in the countries of destination [22,29,39]. Similarly, the EU Strategy identified violence against women and gender inequalities as a root cause of trafficking [32].

Apart from the challenge of addressing the root causes of trafficking, research, information gathering and documentation may be seen as a proactive measure for the prevention of human trafficking. One of the strategies highly promoted in counter-trafficking documents is to effectively gather intelligence by implementing novel intelligence sources, including understanding the different forms of exploitation, the particularly vulnerable groups, the working methods of traffickers and the types of abuse that the victims suffer in order to adapt the responses and protection measures [3,12,32]. Having information on these different aspects may help tackling the recognized barriers for identification of child victims of trafficking, including the flexible *modus operandi* of traffickers, the hidden nature of the crime, the situation of the victims, who may not be able or willing to seek help, but also the different perception of the various agencies and individuals about who constitutes a victim [7,12,20,29]. Forensic practitioners are commonly involved in research activities, which encompass a number of topics applicable to the questions raised above regarding child trafficking, including trauma patterns, migrant health, and child abuse.

National and international databases carrying information directly or indirectly related to the topic of child trafficking may represent vital counter-trafficking prevention tools. In the EU and worldwide, there are a number of databases that may be used as sources of information regarding missing children, (unaccompanied) migrant children and children at risk of being trafficked or presumed victims of trafficking, for example the IOM database of victims of trafficking [70], the Missing Children Europe database [44], the Eurodac system [71,72], and so on. While collating information about and on vulnerable groups may help preventing trafficking or re-trafficking, and in general make tracing of persons

at risk, including missing children easier, there are two crucial aspects that need to be considered: first, ethical and human rights laws regarding personal data confidentiality need to be strictly adhered to when creating and using databases with sensitive personal information, and second, clear protocols for data collection and safe systems for data processing, such as storing and sharing need to be established in order to prevent data misuse [7,12,73]. Another important aspect of data collection is that the types of data are relevant and useful for the given purpose. Databases, which may be potentially utilized for personal identification need to include information sufficient for such task. For instance, only a few EU Member States hold databases or registries of missing migrant children so far [44] and it is unclear what types of data are collected and whether the information in the datasets would be helpful for identification of children, such as whether the databases contain photographs or descriptions of individualising features of the children, such as tattoos, medical interventions, scars, or distinguishing features. Forensic practitioners may advise on the type of data relevant for personal identification, and help developing registration protocols for migrant children that may facilitate their identification in case they go missing.

Within their regular practice, forensic practitioners may assist in prevention of child trafficking in a number of different scenarios. Firstly, it has been shown that children who experienced abuse (sexual or physical) in the past were more likely to become victims of trafficking [6,8,65,66,74]. Therefore, forensic practitioners who encounter child victims of violence and abuse when working in clinical settings may prevent further victimization through their care and intervention. Furthermore, screening for and profiling of children at risk has been promoted as an important step toward victim protection [20,29,33,43,47]. The European Asylum Procedures Directive establishes that effective screening shall be undertaken for migrants to establish their identity, age and specific protection needs, including if they have been trafficked [75]. In a similar manner, screening among children brought to attention of forensic practitioners in clinical settings, such as centres for assistance of victims of violence and abuse may be helpful.

Secondly, as health care professionals, social workers and personnel of civil society organizations, forensic practitioners may help preventing re-trafficking by identifying child victims of trafficking who may be referred to them for reasons other than suspicion of trafficking (for example, as victims of sexual violence, children brought for age assessment in order to establish their criminal responsibility) and by providing assistance and information to the victims. For instance, it has been shown that commercially sexually exploited adolescents commonly present with violence-inflicted injuries, sexually transmitted infections, and unwanted pregnancy [65,66].

Thirdly, forensic practitioners, who come into contact with child asylum seekers for the purpose of age estimation or torture assessment, are usually knowledgeable about the contents of current legal instruments and in some instances may be asked to provide information regarding asylum procedures. By doing so, they may for example help to prevent disappearance of unaccompanied migrant children from institutional care or may advise child victims of trafficking, who are also migrants, on their rights. For instance, uncertainty about the asylum procedures and outcomes of asylum requests, along with disinformation and pressure from traffickers (among others) have been identified as major factors causing unaccompanied children to disappear from reception centres and care facilities [47,76]. Although under the recast Dublin Regulation unaccompanied minors have now the option to have their asylum request transferred to a Member State, in which they can reunite with family members or relatives or for the request to

be processed in the country where they currently are (without being transferred back to the first country of arrival) [77], migrant children may be not aware of this or may be intentionally misled by smugglers and traffickers. Another issue raised in connection with unaccompanied minors was that during family tracing it is important to carefully verify whether persons claiming to be the parent(s) of a child are not actually traffickers posing as parents [27].

Finally, forensic practitioners are well aware of the importance of evidence and by thoroughly documenting the findings for any victim (regardless if they identify or are identified as victims of trafficking), their notes may be used in legal proceedings if necessary and aid successful prosecution of traffickers, and thus prevent further trafficking.

2.1.2. Protection: identification of victims

The identification of victims of human trafficking is vital for two main reasons: first, to protect the victims and to provide them with the necessary assistance, and second, to effectively prosecute the crime, to convict the traffickers, and thus prevent further acts of trafficking on their part.

Examples of child trafficking are numerous but this excerpt describing how young girls from Romania were trafficked across Europe illustrates several issues encountered in victim identification: “These young girls, starting from the age of 16 . . . (were) lured . . . to Portugal . . . From Portugal these girls were forced to travel elsewhere in Europe and eventually to Belgium, where they were then forced into prostitution and sexually exploited. When they refused the exploitation or attempted to contact the police, they were intimidated and beaten and their families in Romania were threatened. They were also forced to accept unprotected sex because a higher price could then be charged. This resulted in venereal disease and forced abortions. It is further reported that the traffickers provided the child victims with false identity documents so that they could allegedly be legally employed in a bar.” [20,p. 15]

Mobility of victims is often a key feature of trafficking, not only regarding the journey from countries of origin to countries of destination but also changes of location within the country of destination or among different countries [12,20,39]. As “ordinary” migrants, victims of child trafficking often start their journey in their country of origin, are smuggled or trafficked through one or more countries of transit and are intended for a country of destination. Each of the stages of the journey carries different risks and at each stage there is the potential to identify the children as victims of trafficking [29,34,58,78]. In order to disrupt the often complex trafficking networks, it is important to understand what happens at the different stages (recruitment, transportation, exploitation), for example how visible the victims are or what types of physical injuries, if any, the victims sustains during each of the stages.

Although trafficking is considered to be largely a hidden crime, the mobility aspect may provide opportunities for victim identification, when victims and traffickers are crossing borders or travelling within countries, considering the extensive networks of surveillance systems in many European states. Although many child victims of trafficking may be virtually “invisible”, confined to vehicles or boats when crossing borders and later to factories, brothels, or private houses as home servants [50], others cross borders with or without their traffickers with falsified documents and even need to be “visible” as part of their exploitation, such as children begging or victims of child pornography.

Notably, the European Commission Communication on protection of children highlights the necessity to develop strategies that would allow to identify victims of trafficking, as soon as possible, that is after they arrive in the hotspots and reception centres [41].

While it is acknowledged that the identification of victims of trafficking at an early stage is desirable to prevent gross violations of human rights, it needs to be kept in mind that the process of officially identifying a person as a victim of trafficking is extremely complex and time-consuming; the investigations into human trafficking often require extensive preparation and long-term intelligence gathering, and the presumed victims may need a long time to be able to acknowledge and communicate their experience [7,20,21,46].

GRETA, among others, highlight that proactive intelligence-led investigations may be essential for both victim identification and prosecution of human trafficking and consequently for prevention of the crime [43]. The use of innovative techniques such as observations and interceptions and obtaining information from monitoring may play an important role within this approach. The assessment of images and videos in order to identify victims (and perpetrators) may become one of the crucial steps in the counter-trafficking efforts.

In the majority of the existing documents, the most commonly mentioned actors in relation to the identification of victims of human trafficking are immigration and law enforcement authorities and on occasion civil society organizations [7,21,22,28,29,57]. Immigration authorities and border guards may come into contact with victims of trafficking when they cross borders either as unaccompanied minors or in company of their traffickers or other persons. The victims may often be instructed by the traffickers to provide false information, for example about their age or may carry falsified documents [37]. Law enforcement personnel may come into contact with trafficked children during operations that target forced labour or brothels or when they investigate illegal actions, such as begging or petty crime, which the children may be forced to carry out [28,29]. Since the age of criminal responsibility varies depending on the type of crime, children carrying out petty crime who seem too young for criminal responsibility may be ignored by law enforcement, which may lead to missing cases of trafficking [57]. On the other hand, child victims are at high risk of undergoing secondary victimization by being investigated as perpetrators rather than as victims of trafficking [7,18,43].

United Nations Children’s Fund (UNICEF) [57] mentioned that the personnel of civil society organizations, who provide services or assistance to populations at risk (for example, street children, sex workers or migrants) may aid the identification of child victims of trafficking by accompanying law enforcement officials during raids in order to *identify* the presumed child victims. The use of the term “identify” in this context needs to be reconsidered in light of two related, but not interchangeable concepts: one being *recognition*, an innate (but subjective) human ability to recognize a person (familiar or unfamiliar, but previously encountered), while the other being *identification*, a scientific and legally binding concept of ascertaining a person’s identity [21]. The forensic approach strives to address the concept of identification (as opposed to recognition), in order for the findings to be acceptable in and sufficient for legal proceedings.

Forensic practitioners may come into contact with child victims of trafficking through multiple avenues, including through referrals from law enforcement or judiciary authorities for age estimation in cases of establishing criminal responsibility, or in case of suspected child pornography, referrals in relation to asylum procedures, either for age or torture assessment, examination of victims of violence and abuse, for instance in specialized centres for victims assistance or through referrals from emergency or social services (Fig. 1). Forensic practitioners may also be asked to provide their expertise during intelligence gathering, targeting both victim identification and the interception and prosecution of traffickers, which may involve assessment of images regarding the age of the depicted persons or their identity (for instance,

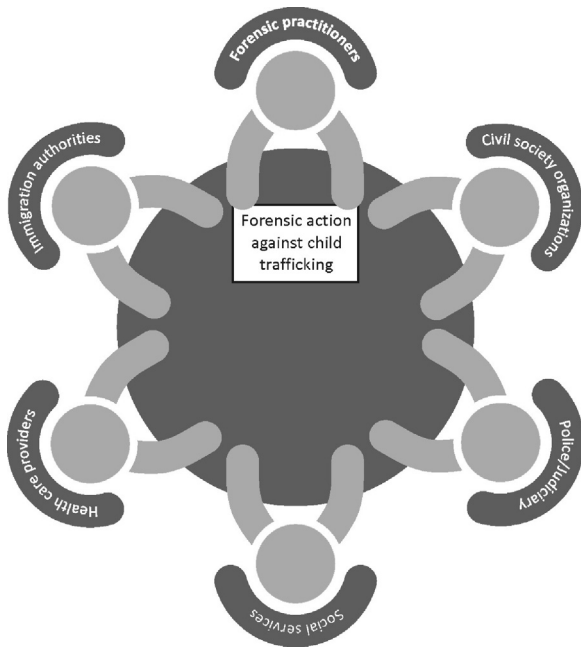


Fig. 1. Cooperation networks of forensic practitioners in counter-trafficking efforts.

comparing multiple documents to assess whether the same persons are present). Ultimately, such assessments may be used as evidence for prosecution in cases of suspected child trafficking.

Apart from providing practical expertise, forensic practitioners with their knowledge and experience may provide valuable advice to policy makers regarding the development of effective counter-trafficking strategies, and may offer training on victim identification and forensic perspective for professionals from other fields of expertise, who may encounter potential victims of trafficking, such as medical staff, social workers, and law enforcement.

The identification process in case of child victims of trafficking includes three closely linked aspects: (a) the identification of the person as a child; (b) the identification of the child as the victim of trafficking; and (c) establishing the identity of the child, all of which may be expertly addressed by forensic pathologists and anthropologists.

2.1.2.1. Identification as a person younger than 18 years (a child). Age is considered as an essential part of a child's identity, considering that childhood is usually defined by reference to age (among others, in the CRC [17]). There has been a lot of debate about the process of age estimation, mainly in the context of migration [46,79–81], but may also be relevant within the context of victims of human trafficking. While the debating parties agree that the issue of age assessment is critical, triggering a number of procedural and legal guarantees, as well as for example the obligation to respect data entry and data protection requirements when recording information in databases such as Eurodac, there is still much uncertainty about which methods shall be used for age estimation and what are the best practice procedures [79,82]. Age assessments may be undertaken for a number of reasons, including for identification purposes in the context of search for the missing, or for asylum proceedings, for age-appropriate reception in case of migrants, or for abuse prevention. While age assessment should only be undertaken when there is a doubt, there may be situations where not raising doubts may not be beneficial. For instance, concerns have been raised about identification practices in hotspots, with cases of undocumented unaccompanied minors from Africa being "identified" as adults due to the lack of proper approaches for

examination and identification of individual cases amidst the huge number of arriving migrants [43,83].

In case of adolescents, the challenge in suspected cases of human trafficking is to establish whether the victims are indeed children under 18 years of age. In a number of European countries, including Germany, Italy, and France, forensic pathologists and anthropologists are already routinely tasked with age estimation of crime suspects or asylum seekers, including unaccompanied minors. However, the majority of these routine cases aim at clarifying whether persons claiming to be younger than 18 years are indeed children or in fact adults attempting to benefit from the protection available to migrant children or to avoid criminal responsibility.

In contrast, in trafficking cases, the opposite scenario seems to be more common, that is children younger than 18 years are encouraged to claim that they are adult or are provided with forged identity documents stating they are older than 18 years [9,40,46,57]. Such documents may make it easier for traffickers to cross borders with child victims, without raising suspicion of the immigration officials, as may be the case when children seem to cross borders unaccompanied or in the company of adults who are not their parents or legal guardians [20,29]. In addition, when at destination, traffickers may use the falsified identity documents in order to engage the children in activities that would otherwise not be legal (for example prostitution by adults is legal in several countries but this is not the case for children) or acceptable for children to perform, for example due to health and safety regulations [20].

UNICEF and EASO [57,79] also suggest that age thresholds other than 18 years may need to be considered or even a direct age estimate may be required in order to provide children with age-appropriate assistance regarding education and health care provision, to assess the eligibility of children to perform certain employment or tasks, or to aid identification of child (if identity is unknown) and to facilitate comparisons with missing children reports.

In general, age estimation is a multi-faceted and complex process, which first and foremost needs to respect the best interests of the child and secondly, needs to be based on best practice protocols that incorporate up-to-date evidence-based research and provide guidance on how to use appropriate methodological approaches (including considerations about suitable reference data for comparisons) and how to present age estimation results (including error rates) [79]. Such protocols need to acknowledge and emphasize the importance of combining a number of methodological approaches instead of relying on a single method when estimating age [79].

Considering that the overwhelming number of scientific publications on different aspects of biological age estimation have been for years produced by forensic practitioners [84–87, to name just a few], they may provide valuable insights for the establishment of scientifically sound age assessment protocols and frameworks based on current anthropological and medical knowledge that may be used in the context of migration and human trafficking. In Europe, organizations such as the AGFAD (Working Group for Forensic Age Diagnostics) and FASE (Forensic Anthropology Society of Europe) strive to promote best practice in forensic age assessment by supporting evidence-based research and implementing validated methodology [84,85]. The existing guidelines on age estimation, such as the United Nations High Commissioner for Refugees (UNHCR) Guidelines on Policies and Procedures in dealing with Unaccompanied Children Seeking Asylum [88] state that when assessing the age of a child the following needs to be considered: the assessment should take into account the physical appearance of the child and his/her psychological maturity, margins of errors of the used scientific methods need to be acknowledged and "the benefit of the doubt"

approach should be used. The young person's statements need to be taken into account; and the documentation she or he carries consulted. When all the previous assessments fail to bring clarity, medical examination with the consent of the subject and the opinion of a professional health worker should be sought. In addition, UNICEF [57] recommends that age assessments consider physical, developmental, psychological and cultural factors, and if an age assessment is thought to be necessary, independent professionals with appropriate expertise and familiarity with the child's ethnic/cultural background should carry it out.

Anthropological knowledge about human variability and diversity in physical growth and development and cultural aspects of age may be fundamental when dealing with child victims of trafficking, who may come from many different countries and cultures. The use of population-specific data regarding anthropological measurements, such as body height in relation to age or different developmental curves for children of different ancestry is well-established among forensic/biological anthropologists. From the cultural point of view, it needs to be considered that in many societies it is still not regular practice to issue birth certificates or celebrate birthdays, and the Western concept of adulthood or age-appropriate tasks is not universal, which may complicate the age assessment as well as the identification of the children as victims of trafficking [33,50].

Vital intelligence in counter-trafficking operations may be provided through the assessment of age and identity of persons depicted on images and videos. The training and experience of forensic practitioners may be important for performing tasks, such as age estimation of living persons on images [89,90]. A study focusing on child pornography found that forensic anthropologists and pathologists performed better in estimating age of females on pornographic images than paediatricians and gynaecologists, partly due to the fact that forensic pathologists and anthropologists not only examined secondary sexual characteristics visible on the images but also considered faces in the estimation process [89]. Another possible reason for this finding, which was not discussed in the original paper, may be that since the observers were informed of the context of the test, the non-forensic experts may have been more inclined to associate their conclusions with child pornography, while forensic practitioners used to not take matters at face value and to work with the unknown (including unknown identity), were not as easily affected by the topic of the test and rather guided by the basic principle that the interpretations and conclusions of forensic assessments may have important consequences in legal settings. Another study indicated that forensic experts and law enforcement personnel trained in age estimation based on faces performed better than non-experts and showed similar accuracy as an automated age estimation software [90].

Forensic pathologists and anthropologists involved in cases requiring age assessments routinely present their reports and conclusions to others, such as the judiciary or asylum committees, who then taking into account multiple lines of evidence (or assessments). Similarly, such multidisciplinary cooperation has been recommended and promoted for the identification of child victims of trafficking [3,32]. In any of these cases, it is essential that the decision-making parties receive training, preferably from forensic practitioners, to have a good understanding of the methodology and outcomes of forensic reports, which would certainly contribute to timely decisions emphasized in the recommendations and guidelines on both unaccompanied minors and child victims of trafficking [3,12,29,41].

2.1.2.2. Identification as a victim of trafficking. The working and living conditions of trafficked children are conducive of trauma and illness, either due to direct sexual and physical abuse or due to environmental factors, such as hazardous work or lack of hygiene

[8,58,74]. It has been reported that up to 88% of adults and juveniles in trafficking situations were allowed to seek medical help [65–67], which illustrates that victims of trafficking may not be as “invisible” as often thought. For domestic servants, medical visits were triggered by injury and respiratory or systemic illness, while sex trafficking victims were seen by health professionals for sexually transmitted infections and abortion [59]. Moreover, according to the European Commission's Study on high-risk groups for trafficking in human beings [10], traffickers allow children to stay overnight in drop-in centres run by non-governmental organizations, while during the day they continue to exploit the children for petty crime or begging. This may provide an opportunity to approach the children about their health and well-being.

Forensic practitioners may rarely be seen as “first responders” in the process of identifying whether a child has been a victim of trafficking, which is more commonly the role of law enforcement, social workers, personnel of civil society organizations working with street children and sex workers, or at times health care providers, mainly from the emergency department [7,18,57,59]. Forensic practitioners may rather hold an important role in the referral systems and in documentation of the trauma suffered by the victims for legal purposes. On the other hand, forensic practitioners may encounter child victims of trafficking, not initially recognized as such, in clinical settings, when the children are referred by authorities either for assessments regarding signs of violence or abuse or for age assessment, for example related to the establishment of their criminal responsibility.

Forensic pathologists and sometimes anthropologists are often involved in the assessment of sexual and physical abuse within clinical settings and in the assessment of torture mostly associated with asylum-seeking procedures. Their exposure to a varied spectrum of victims of violence provides them with the right skill set to assess and identify trafficked children. Apart from being trained to recognize the physical signs of sexual or physical violence, through their many encounters with traumatised persons, forensic practitioners are skilled in approaches that help gaining trust and cooperation of vulnerable persons, and many forensic practitioners have got years of experience of working with asylum seekers and unaccompanied minors, which enables them to communicate effectively and sensitively with migrant children. These attributes may be of particular use when examining and screening for child victims of trafficking.

Since the number of victims of child trafficking coming from African and Asian countries increases in Europe [12,20], the training of anthropologists related to cultural diversity and various traditions and practices specific for certain cultures may be essential for differential diagnosis in cases of violence. For example, when assessing scars on a person, some may be traditional and need to be differentiated from those resulting from abuse. In addition, awareness of the existence of rituals that may help traffickers to gain and retain control over victims, such as Juju, which has been shown to be part of the practices in Nigerian trafficking networks [20,39,58], may aid understanding of the trafficking journey and the behaviour of the victims.

Consequently, the main area of involvement for forensic practitioners in the investigations into child trafficking would be to provide documentation on the health status of the presumed victims, which may represent crucial evidence in intelligence-led investigations. Thorough documentation and examination are important not only for the legal pathway, including evidence gathering, prosecution of traffickers and compensation for the victims but also for appropriate assessment of the health needs and decision-making around treatment for the child victims. The latter naturally happens in collaboration with other medical specialists, including paediatricians, gynaecologists, and mental health

practitioners. For instance, in Milan there is an existing collaboration agreement between the Section of Legal Medicine of the University of Milan, the Ethnopsychiatric Centre of the Niguarda Hospital and the City of Milan, which allows asylum-seeking victims of violence and torture to be assessed both from a medico-legal and from a psychiatric point of view.

For migrant children, being identified as child victims of trafficking/exploitation may have implications for their status within asylum procedures, since child abuse, recruitment as a child soldier, the risk of child selling or forced marriage have all been accepted as the basis for granting a child asylum [27,58]. In addition, OSCE have established that trafficking in human beings may legally amount to torture, and evidence of torture may trigger special procedural guarantees in the asylum procedures [58]. The UNHCR has also noted that victims of human trafficking may have a claim to asylum or other type of protection since the forms of exploitation that a victim suffers when trafficked constitute serious violations of human rights, which may amount to persecution, particularly when the victim is a child [91]. In addition, the risks that trafficked persons may face when returning to their country of origin or country of transit, also with regard to being re-trafficked, are considered to be reasons for an asylum claim [18,20]. In contrast, Bhabha [31] reported that trafficked child sex workers in the USA rarely get the opportunity to apply for asylum, despite irrefutable evidence of the high risk of re-trafficking.

While a straightforward link between the abuse suffered and trafficking may be difficult to establish, for children it may be slightly easier than for adults, since for example sexual abuse involving prostitution or when a person received money or goods for sex with minors (facilitates sex with minors for financial gain) falls within the definition of child trafficking [18,22,65].

Aside from the existing checklists of signs of trafficking, more research is needed regarding the types of injury and trauma patterns related to trafficking, which may come to attention of health care providers or forensic practitioners (regarding both living and deceased victims). For instance, it may be important to investigate what are typical injuries and acknowledged (and accepted) health risks for certain types of industries and what is unusual and may be potentially linked to forced labour or unhealthy working environment, which may in turn be associated with trafficking. For child victims, a better understanding of injuries inconsistent with specific ages is also needed.

Tragically, trafficked children may suffer fatal injuries due to the nature of the exploitation, die as a consequence of substance abuse triggered by the trafficking situation, or commit suicide triggered by the psychological stress of their situation [34,74,92]. In addition, victims of trafficking may be murdered by traffickers for trying to escape or reporting their situation to the authorities. For instance, it has been reported that more than 100 Nigerian prostitutes were murdered in Italy in a 5-year period in the 1990s, which may have been in direct relation to their status of being trafficking victims of sexual exploitation [93]. Many of these cases would be likely brought to forensic pathologists for autopsy. In addition, the identity of the deceased children may be unknown, so forensic assessment and findings may provide clues for the identification process.

2.1.2.3. Personal identification: establishing the identity of the child victim. Personal identification of the child victims is naturally one of the fundamental tasks in counter-trafficking efforts in order to help the victims escape the trafficking situation, to provide answers about the whereabouts of missing children, and to initiate legal proceedings regarding both the victim protection and compensation, and the prosecution of traffickers. Establishing the identity of child victims may also be important for actions that

may or may not be related to trafficking, such as for claims for international protection [77].

In cases where victims self-identify the identification process may be a short one. However, even in such cases, the victims may not be in possession of identity documents, and the verification of their statements may be complicated by the fact that in some countries of origin systematic databases of residents are non-existent. In cases, where biological traces or the victim's biological information (such as DNA or fingerprints) need to be compared for example with missing persons databases, the comparisons may be hindered by lacking information in the databases or by unavailability of familial samples. Moreover, in cases of child trafficking, the initial assessment of identity may be undertaken "from afar", by analysing surveillance images and videos as part of intelligence gathering.

Considering the increasing use of information technologies by traffickers, forensic assessment may be essential for uncovering recruitment trails, financial trails but also for tracking victims and perpetrators on images and videos from surveillance systems [12,20,94,95]. While gathering intelligence about human trafficking networks, victims (or perpetrators) may be traced and assessed remotely using video surveillance coverage. In such assessments, two key tasks include estimating the age (child/adult) and providing clues regarding the identity of the persons involved. In some cases, comparisons may also be requested to identify multiple events when the same child victim was involved in activities forced by traffickers or to associate a child with the premises or objects possessed or controlled by the suspected traffickers [57]. In case of missing children, who may also be potential victims of trafficking, images may also be used as sources for comparisons between images provided by family or authorities and images from the media, surveillance systems or databases from institutional care or reception centres (provided that children have photographs on file).

Several organizations dealing with missing children or unaccompanied migrant children have pointed out that photographs of children may provide valuable source of information and need to be included in databases with other identifying information, such as demographic data and personal descriptors [9,11,57,96]. Among others, UNICEF [57] emphasized that it is not sufficient to record a name and other personal details about a child, as these may be forged or changed by traffickers. It is consequently important to have a photograph of the child concerned. Similarly, UNICEF [57] expressed concerns about the practice of documenting unaccompanied migrant children, with the procedures differing among European countries. In the new system of hotspots, all migrants arriving by sea to Italy need to be photo-identified [97], but for instance in Sweden and in the Netherlands, children are only photographed when aged 14 or 15 years and older, respectively [57,98]. Similarly, Eurodac, the European database of fingerprints of all fingers only records fingerprints of irregular migrants aged 14 years and older who are apprehended when crossing European Union borders [71,72]. However, such age thresholds are difficult to adhere to since firstly, it would imply that the age of each apprehended person is known, and secondly, younger children, who are potentially the most vulnerable to become victims of trafficking, will not have fingerprints on file.

The importance of collecting photographs and biometric information has also been acknowledged in the Schengen Information System (SIS) II [96], which collates alerts on third-country nationals who are not allowed to enter or stay in the Schengen Area for the use by border guards and immigration authorities, and on missing persons and on persons (and objects) related to criminal offences, including persons who, in the interest of their own protection (for example to protect their health), need to be placed provisionally in a place of safety at the request of a

competent authority. The database is intended for use by law enforcement who may search information on missing persons, including biometric data (photographs and fingerprints) or gather intelligence on persons for the purpose of prevention and prosecution of criminal offences. Biometric data were not included in the previous SIS but the authorities noted that adding such information will facilitate identification and also decrease the likelihood of misidentification since documents can be forged and names changed (which may often be the case for trafficked persons). The system also allows for linking alerts for persons and objects (for example vehicles), which may be useful when by facial recognition persons suspected of being trafficked or being traffickers need to be linked, such as being in the same vehicle at numerous occasions [20].

While image analysts are specialised in the technical aspect of image comparisons, forensic practitioners may offer additional insights regarding the identity of the depicted persons by examining their facial and body features. Such approach has been used by forensic practitioners for example in the assessment of child pornography (one of the types of exploitation covered under the definition of trafficking), or other crimes concerning children, where it is necessary either to provide clues regarding the identity of the child or to assess whether the same child is depicted on different images [89,90,99]. Gibelli et al. [100] provided an overview on the existing methods for identification of the living on images in the forensic context.

Facial recognition, manual or automatic, is commonly used as both a tool for personal identification and a tool for crime solving due to our reliance on photographs to demonstrate identity (for example driver's licenses and passports) and our everyday activities (legal or illegal) being increasingly captured by surveillance systems. Using faces for identification of missing children has been emphasised by the NCMEC's Child Victim Identification Program, which focuses on reviewing abusive images and videos in order to locate and recover child victims of abuse [11]. However, the recognition process is not a straightforward one, particularly since the human ability to recognize unfamiliar faces (as opposed to familiar faces) varies considerably among people [101–104]. The challenges of facial recognition and identification have been illustrated in a recent study, which found that passport control officers accept fraudulent photos 14% of the time [103]. This study also showed that despite years of experience inspecting passport photos, passport officers are not more successful at matching faces than students. On the other hand, some studies reported that appropriate training improves the ability to match faces [104].

Another challenging aspect in facial recognition, particularly pertaining to children, are the temporal changes of the face. Considering that victims of trafficking have been found to be exploited for labour or sex for two to seven years before discovery [50,74], the appearance of the victims, and in particular children may change during such time span, sometimes considerably, for example when the time interval includes pubertal changes [105]. Nevertheless, a photograph is a record of appearance, even if this appearance changes either artificially or due to natural growth and development, certain features may remain and be comparable over time. Although the methodology of facial recognition is not yet developed to the same extent as other identification methods based on morphological assessments, such as fingerprint comparisons, it has increasingly been addressed by forensic scientists, psychologists, computer scientists and software developers [100].

In the recent years, facial recognition software have become widely available and automated facial recognition technologies are used at border points across the world. Notably, the majority of these biometric tools were developed and tested on adult subjects. Although adult faces change with age, such changes are considered to be less dramatic compared with those occurring in a growing

child. Better understanding and development of validated automated and manual methods for facial recognition of children, particularly on age-different images may be particularly useful for the search for missing children and identification of child victims of trafficking.

When viewing image material, anthropologists in particular may provide useful information about the country of origin of the victims (or perpetrators) by analyzing the image with respect to cultural practices and ethnic characteristics. Such information may then be used to focus the investigative efforts and provide clues for identity of either the victims or the perpetrators, considering that victims of trafficking and traffickers usually belong to the same or similar ethnic group [12,20,39].

More research is also needed on the applicability and accuracy of using comparisons of areas of the human body other than face, which may display individualizing features, with particular attention to features, such as tattoos, moles and scars. For instance, a recent study has shown that the position of moles may be considered an age-stable feature during growth, meaning that it can help identifying a child on age-different images [99].

Considering the legal requirements for personal identification, anthropological methods may provide clues about the identity of the victims, but the results may need to be confirmed by other methods, including DNA and fingerprint analyses, for which the biological information from the victim may be compared with physical traces secured at crime scenes associated with trafficking, for instance during raids of brothels. In addition, in case of migrant victims fingerprints may be compared with the Eurodac database, in which fingerprints are stored for a period of 10 years. National police forces and Europol are allowed to compare fingerprints linked to criminal investigations with those contained in Eurodac under strictly controlled circumstances, only for the purpose of the prevention, detection and investigation of serious crimes and terrorism. Hits obtained from Eurodac need to be verified by a trained fingerprint expert in order to ensure the identification of the criminal suspect or victim of crime [71,72].

2.1.3. Prosecution

Although the investigation and prosecution of human trafficking cases have received increased attention in the EU, the total number of prosecutions and convictions remains low, especially considering the increasing number of identified victims [12,19,20]. Lack of sufficient evidence has been cited as one of the main reasons why a relatively small proportion of child trafficking cases has been prosecuted and even smaller proportion of traffickers have been convicted [12,20].

A number of reports have emphasized that apart from the challenges of detecting human trafficking, the prosecution of these cases is often extremely difficult, including problems with securing evidence and the need for specific training, particularly considering the high evidentiary thresholds applied by the courts [43,94]. These difficulties often lead to prosecution of cases that may have qualified as trafficking in human beings as other crimes, for example procuring instead of trafficking for the purpose of sexual exploitation, or breach of labour laws instead of trafficking for the purpose of labour exploitation [22].

It has been observed that when collecting evidence to prosecute human traffickers, many investigations still largely depend on victims' testimonies, which puts excessive burden on the victims, particularly child victims [43,94]. Gathering intelligence about financial trails has been promoted by the EU Anti-Trafficking Directive [3] as one of possible innovative sources of evidence, which may help alleviating the burden placed on victims. Similarly, digital images and videos depicting victims and perpetrators, which would for example link child pornography or forced begging and criminal activity by victims to traffickers may also represent a

Table 1

Summary of skills and expertise of forensic pathologists and anthropologists that may contribute to the identification of child victims of trafficking and the counter-trafficking efforts in general.

Key areas of counter-trafficking action	Skills and expertise of forensic anthropologists and pathologists
Prevention	<p>Research on topics related child trafficking, including trauma patterns, migrant health, and child abuse</p> <p>Advisors on the type of data that may be relevant for personal identification (in documentation and databases used as prevention tools)</p> <p>Screening for and profiling children at risk (regular contact with victims of abuse, migrant children)</p> <p>Providers of assistance and information to children at risk (asylum seekers, victims of abuse)</p> <p>Thorough documentation, for example of injuries, may be used as evidence</p>
Protection: identification of victims	<p>Identification of unknown persons, living or dead, also on images</p> <p>Age estimation, also on images (for example, child pornography)</p> <p>Expert knowledge of human variability (particularly forensic anthropologists)</p> <p>Awareness of culturally-specific issues (particularly forensic anthropologists)</p> <p>Assessment of sexual violence/abuse</p> <p>Assessment of trauma and signs of violence</p> <p>Experience in examining traumatized victims</p> <p>Experience in assessment of asylum seekers/migrants, including unaccompanied minors</p> <p>Knowledge of legal requirements; reporting suitable for legal purposes</p> <p>Training providers on personal identification and appropriate documentation</p>
Prosecution	<p>Documentation suitable for legal proceedings</p> <p>Gathering of evidence (detailed forensic assessments)</p> <p>Expert testimony (for example, age assessment, assessment of trauma, assessment of images/videos)</p>

useful approach in intelligence-driven investigations. The results of forensic assessments (as outlined in the previous section) may be used as evidence for prosecution in cases of suspected child trafficking.

Overall, forensic practitioners have experience with examining and assisting victims of crime, abuse and violence and understand the importance of documentation and collection of evidence for legal proceedings. A detailed forensic assessment either of the victims or of the evidence related to presumed trafficking cases, such as surveillance images may help substantiating the testimonies of victims or witnesses.

To sum up, the skills and expertise of forensic practitioners (forensic pathologists and anthropologists) relevant to the three key areas of counter-trafficking action – prevention, protection, and prosecution are outlined in [Table 1](#).

2.2. Forensic practitioners and the fourth “P”: Partnership

Partnerships among governmental, nongovernmental and other civil society organisations, among academia, politics, and industry, and among professionals from different fields of expertise are vital for comprehensive counter-trafficking efforts. For example, the European Commission formally cooperates with the United Nations, the Council of Europe, the International Organization for Migration, the Organization for Security and Cooperation in Europe, the World Health Organization and the International Labour Organization and facilitates the cooperation of approximately 100 civil society organisations within the EU Civil Society Platform against trafficking in human beings [20,32]. So far, there is little evidence that forensic practitioners have been involved in these networks, but their contribution may add another dimension to the existing partnerships. Forensic practitioners are often involved in local, national and international academic and professional networks, concerning issues such as sexual abuse, torture and age estimation, the expertise of which may prove beneficial for counter-trafficking efforts. From routine criminal and civil law cases, forensic practitioners have links in place with law enforcement, judiciary, social workers, and other medical professionals, who are all recognized actors in the fight against child trafficking. Thus, forensic practitioners, being familiar with the roles and services of other actors, may benefit from this

knowledge and even act as a link between the presumed child victims of trafficking and the other organizations. In addition, forensic practitioners with their knowledge and experience working with victims of violence, torture and abuse, who often come from different countries, and more recently also their experience of working with asylum seekers regarding both age estimation and torture assessment may be shared in training sessions and discussions with professionals from different organizations involved in counter-trafficking efforts.

3. Conclusion

So far, forensic practitioners have been rarely identified as actors in the fight against child trafficking, but this paper shows that they have the skills, experience and expertise to contribute to various aspects of the counter-trafficking action, particularly concerning the identification of victims (and perpetrators). Even though this paper concentrate on the topic of child trafficking, most of the suggestions presented apply also to adult victims of trafficking. Similarly, while the discourse about the role of forensic practitioners in the counter-trafficking efforts largely nestled in the context of the current socio-political situation in Europe shaped to a great extent by the migration crisis, the notions regarding the contribution of forensic sciences to the fight against child trafficking may be adapted to other geographical and socio-political contexts.

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