

Development of a screening tool enabling identification of infants and toddlers at risk for family abuse and neglect: A feasibility study from three South European countries.

Post-print version

Ezpeleta, L., Pérez-Robles, R., Fanti, K., Karveli, V., Katsimicha, E., Nikolaidis, G., Hadjicharalambous, M.Z., & Hatzinikolaou, K. (2017). Development of a screening tool enabling identification of infants and toddlers at risk for family abuse and neglect: A feasibility study from three South European countries. *Child: Care, Health and Development*, 43, 75-80. doi: 10.1111/cch.12416.

Abstract

Background: Child abuse is a health and social problem and few screening instruments are available for the detection of risk in primary health care. The main aim of the current study was to develop a screening instrument to be used by professionals in the public health care sector enabling the detection of infants and toddlers at risk for emotional and physical abuse and neglect. In addition, we aimed to provide evidence for the feasibility of the instrument in Cyprus, Greece and Spain. Method: A total of 61 health professionals from pediatric public health care centers from the three countries were involved in a three-step process for guiding the development of the screening tool and in its application. The screening tool was applied on a total of 219 anonymous families with children between 0 and 3 years-old attending public health centers from the three countries. A 9-item screening tool, consisting of items assessing relational emotional abuse, physical abuse and other risk factors, was developed. Results: Professionals in the different countries were able to identify risky situations when applying the screening tool. The mean number of risk items in the feasibility sample ranged from 0.95 in Spain to 2.22 in Cyprus. The most frequently reported risks were physical trauma or accidents that could be avoided with appropriate supervision (total sample, Spain and Cyprus), inconsistent story for explaining the accident (total sample and Cyprus), and any other risk factors (Greece and Spain). Significantly more risks were observed among older children with no significant gender differences. Conclusion: The utilization of an instrument to detect risk of abuse and neglect in the daily pediatric consultation may help to provide more comprehensive care protecting infants and toddlers from different forms of abuse.

KEYWORDS: Abuse; Infant; Neglect; Public health care; Screening; Toddler.

Introduction

Intra-familial child abuse “...encompasses any acts of commission or omission by a parent or other caregiver that result in harm, potential for harm, or threat of harm to a child, even if harm is not the intended result” (Leeb *et al.* 2008). Four forms of child maltreatment are widely recognized (World Health Organization and International Society for Prevention of Child Abuse and Neglect 2006): physical abuse, sexual abuse, emotional abuse, and neglect. Emotional neglect has been recognized more recently as a form of child abuse (Sroufe *et al.* 2005). Child abuse and neglect have been associated with wide range of symptoms throughout development. In infancy, abuse is frequently associated with injury, affect dysregulation, insecure/avoidant attachment, growth/developmental delay, and neurobiological impairment; in childhood, abuse co-occurs with anxiety and mood disorders, posttraumatic stress disorder, disruptive behaviour disorders, academic failure, and poor peer relations; in adolescence, abuse correlates with conduct disorder, alcohol abuse, drug abuse, risk-taking behaviours, and recurrent victimization; in adulthood, abuse is comorbid with personality disorders, relationship problems, maltreatment of one’s own offspring, and chronic diseases (Andrews *et al.* 2004; McCrory *et al.* 2012, Miller *et al.* 2011; Naughton *et al.* 2013, Norman *et al.* 2012). A screening tool enabling early identification is important for prevention efforts.

The World Health Organization has recognized child abuse and neglect as a major international health problem (2006). In the south of Europe, few epidemiological studies reporting the magnitude of this problem exist. In Cyprus, a recent epidemiological study reported that at least 1 in 10 children experience different forms of abuse (Fanti, Karayianni, Diakidou, Katsimicha, & Hadjicharalambous, in

preparation). In Greece, there is no data on the prevalence of maltreatment among children from 0 to 3 years old, or for minors from 0 to 18 years old. However, the BECAN study provided data on the prevalence of all forms of maltreatment for the ages of 11, 13 and 16; namely, more than almost 8 in 10 school-children at those ages in Greece reported having at least one experience of physical violence during their entire life (Ntinapogias *et al.* 2013). In Catalonia (the region where the Spanish sample was recruited) the prevalence of abuse in children up to 18 years is 18 per mil, similar to other regions in Spain (Inglès and Prats 2008). Of those children, 7.3% are up to 4 years-old (Inglès and Prats 2008). Even though, studies showed very discrepant rates on child maltreatment. Studies reveal that official statistics have seriously underestimated the occurrence of child abuse (MacMillan and Wathen 2014). For instance, in Spain it is estimated that only one in every seven cases of abuse was diagnosed under age 18 (Martín and Pedreira 1997). As a result, more and systematic efforts are necessary to detect the cases suffering abuse and neglect in childhood.

It is well known that infants and toddlers are the most affected by abusive behaviors by their caregivers with life-long consequences (Inglès and Prats 2008). Typically, abuse in children older than 3 years-old is easier to be detected in the educational context, when different social agents are in contact with the child. Before that age, most children do not attend day-care centers, and they remain at home with their parents or caregivers. Practically, the only social agents in contact with most infant and toddlers are the professionals of the public health system (nurses and pediatricians, mainly). This access to young children places professionals working on the public clinical health services in a privileged situation to detect risk of abuse and neglect in infants, toddlers and preschoolers. Based on this information, the current study aimed to provide professionals with adequate tools and training to enable early detection of infants and

toddlers at risk for abuse and neglect. Early detection will enable the diagnoses of abuse and neglect previously unnoticed (MacMillan and Wathen 2014). From a community perspective, this concept is in line with the need of a more comprehensive health care provision to the family as a unit advocated by health professionals, such as family health nurses (Martin *et al.* 2013). Among the activities included in this concept are the provision of a population needs assessment, and this fits in the purposes of this work.

Few cases of physical abuse are detected in primary care services. A study developed in Catalonia (Spain) (Almirall *et al.* 2004) showed that while 61.2% of severe cases of physical abuse in children up to 4 years-old were referenced by the hospital, only 2.4% were identified by the primary care services. The existence of specific protocols for child abuse (mainly physical and sexual) in emergency departments (ED) may explain some of these differences. In Northern European countries, such as the UK, specific screening tools (e.g., the Scale of Bengier; Bengier and Pearce 2002) are regularly used for the detection of child abuse in Emergency Departments (EDs). The Bengier scale contains four items that evaluates if the injury or harm of the child generated in the professional a suspicion of physical abuse or not. Similarly, at the EDs in the Netherlands they used the Escape instrument (Louwers *et al.* 2012; Louwers *et al.* 2013), which is quite similar to the Scale of Bengier but it has 6 questions with binary answer that register if there is or not a suspicion of child physical abuse. These screening instruments have been developed to be used in EDs. Although more studies are required to validly evaluate the accuracy and effectiveness of those tools (Woodman *et al.* 2008), it is possible to affirm that the screening for child abuse at EDs has increased the detection rate of potential physical child abuse and that they are useful (Gilbert *et al.* 2012; Sittig *et al.* 2013).

However, in the south of Europe we do not have a screening instrument to detect child abuse and neglect at the public primary care centers. The availability of an accurate instrument at primary health services to identify not only the risk of physical abuse but also the risk of relational emotional abuse and families at risk of abuse and neglect problems would help to fill this gap. On this basis, the objective of the current study was to develop a comprehensive screening instrument to detect risk of emotional and physical abuse and neglect in infants and toddlers to be used by professionals in public health centers, mainly in primary care. A cross-cultural perspective, testing the feasibility of the screening tool in three Southern European countries, Cyprus, Greece, and Spain, was followed. The screening protocol offered by the current study might enable the identification of children at risk for abuse and neglect early in life, enhancing prevention efforts.

Method

Participants

The data are part of a Consortium (INTOVIAN) from a European Commission project with a focus on protecting infant and toddlers from domestic violence through the development of a screening instrument for infant/toddler abuse and neglect and its implementation to public health system (JUST/2011-2012/DAP/AG/3283) in which six countries participated. For the purpose of this work the data of three countries of the South of Europe (Cyprus, Greece and Spain) were used.

A convenience sample of professionals working with children and families in pediatric public centers were invited to participate in the three-step design for the development and application of the screening instrument. A total of 61 professionals participated in the main procedures of the study (Table 1). They had been working with

infants and toddlers a mean of 13.2 years, 73% of them had experience with direct observation of caregiver-infant/toddler interactions (mean 10.7 years of experience), and 32.4% had experience in diagnostic evaluation of the quality of parent/infant relationships. In Cyprus, 22 professionals initially attended the first training day. Professionals who participated in the study were working in public hospitals as nurses, psychologists, child psychiatrists and occupational therapists. Of these professionals, 16 (72.7%) remained for the assessment and application of the screening tool (2nd and 3rd phases) and provided reports for 119 cases. The team included 5 general nurses, 9 mental health nurses, 1 child psychiatrist and 1 occupational therapist. All professionals had been working with infant and toddlers for 5 years on average, 37.5% of them had experience with direct observation, and 31.3% had experience in diagnostic evaluation of the quality of parent/infant relationships. In Greece, 26 eligible professionals participated in the first phase of the study, 20 at the 2nd and 15 at the 3rd stage of the study. The second version of the tool was applied for 61 caregiver-infant/toddler pairs, by 15 (75%) professionals who remained at this 3-step pilot study, including 1 pediatrician, 4 social workers, 1 nurse and 9 health visitors, who were working at health care and mental health care services. They had been working with infant and toddlers a mean of 8.5 years, 9 of them (64.3%) had experience with direct observation of parent – infant/toddler interaction (mean 4.6 years), and 5 of them (35.7%) had experience in diagnostic evaluation of the quality of parent-infant relationships (mean 5.6 years).

In Spain, an initial sample of 28 professionals working in public health services for children in the city of Barcelona who attend a neighborhood of mean and low socioeconomic status, including pediatricians, nurses, social workers, psychologists, and social educators participated in the first phase of the study (presentation meeting). Of these, 19 (67.9%) remained for the assessment and application of the screening tool, 2nd

and 3rd phases, and reported about 60 and 99 cases respectively. The professional team was formed by 5 pediatricians, 5 nurses, 4 social workers, and 5 psychologists. They had been working with infant and toddlers a mean of 16.2 years, 84.2% of them had experience with direct observation (mean 14.8 years of experience), and 31.6% had experience in diagnostic evaluation of the quality of parent/infant relationships.

Table 1 presents the characteristics of the sample of children that were evaluated by the professionals at the third phase of the study. In 81.8% of the cases the child was accompanied by the mother and in 35.4% by the father. The questionnaires were recorded through 2014.

Instruments

After a revision of available screening tools for the detection of abuse in childhood, we chose the Dutch Escape instrument (Louwers *et al.* 2013) as a point of reference for the development of our screening tool. The Escape instrument consists by six yes-no items for the detection of physical abuse of children under 18 year-old in the emergency room. Following the format of this tool and according to the range of age of interest (0 to 3 years) and the characteristics of abuse and the risk of abuse in this period, a 8-item yes-no first draft was proposed to the professionals in the first step, and a 9-items yes-no questionnaire formed the final form of the screening tool (see Table 2). The items of the final version include several forms of abuse expected to occur in very young children with an emphasis in relational emotional abuse, which is very frequently undetected at all ages. Finally the INTOVIAN screening questionnaire included: 4 items related to physical abuse (trauma unexplained, lack of supervision, rough handling and doubts about physical safety), 4 items concerning relational emotional abuse (anger/hostility, coldness/detachment, tension/anxiety, and doubts about emotional

safety) and one item on the existence of other risk factors with an open ended question. The INTOVIAN questionnaire is accompanied by a manual of guidelines that defines the items and shows examples of situations that must be coded as yes and no (<http://www.intovian.eu/>). A *yes* response to any of the items of the questionnaire means that that specific area should be investigated in order to confirm or dismiss if the child is suffering abuse or neglect.

Procedure

All the countries followed a similar procedure for the assessment and application of the screening tool. A three-step procedure was followed. In the first step the professionals were sensitized about early signs of child abuse and neglect and abusive relationships and the first draft of the screening tool was presented item per item. The first draft was given to the professionals to apply it to 2 to 4 families that they would choose at their discretion. For each risk item the professionals have to mark its presence-absence. Professionals were also asked to rate if the item should be included in the final draft of the screening tool, if it should be rephrased, and to which extent it was useful for the clinical evaluation on the family. During the second step of the creation of the screening tool, the applied screening tools were collected, the results were recorded and the professionals provided feedback on the application of the tool. There was an agreement between 100% and 94.6% (rough handling) concerning the items that should be included in the screening tool between the participating countries. A 17.9% of the professionals considered that the first draft's item referring to "other comments" had to be rephrased, while for the remaining items the need of rephrasing ranged between 3.6% (avoiding physical trauma, coldness-detachment) to 7.3% (tension-anxiety). On a scale of 1 (not at all) to 7 (very much), between 89.3% and 100% of the professionals

from the three countries rated that the items were quite useful or very useful. Based on professionals' feedback, the new version of the screening tool was designed (see Table 2). During the third step, the modifications of the instrument were described to the professionals and new instructions were provided in order for them to apply the revised screening tool to 10 more families.

The project was approved by the ethical committees of the institutions participating in each country (Cyprus National Bioethics Committee, Ethics Committee of the Institute of Child Health, Comissió d'Ètica en l'Experimentació Animal i Humana of the Universitat Autònoma de Barcelona, and l'Institut Universitari d'Investigació en Atenció Primària). The professionals participated voluntarily and the families maintained their anonymity.

Statistical Analysis

Statistical analysis was carried out with SPSS19 for Windows. Chi-square test was used for the comparison of the distribution of the responses to the items of the questionnaire between countries and by sex. Kruskal-Wallis test was used to compare the distribution of the mean number of risk items among the countries given the skewed distributions. T-test was applied to compare the mean age of children identified at-risk and non-at-risk and an ANOVA was carried out to compare the means between countries. The internal consistency of the items was calculated with Cronbach's alpha.

Results

Distribution of the responses to the screening tool by country

Table 3 shows the frequency of risk responses for each item of the screening tool by country and in the total sample. The most frequently reported risks were the physical trauma or accident that could be avoided with appropriate supervision (total sample, Spain and Cyprus), inconsistent story for explaining the accident (total and Cyprus), and any other risk factors (Greece and Spain). The least reported were anger/hostility interaction (total, Cyprus, and Greece) and rough handling (Spain).

There were significant differences by country. Accident avoidance, interaction of tension/anxiety, rough handling, and doubts about physical safety were more frequent in Cyprus, followed by Greece (except accident avoidance that was more frequent in Spain). An inconsistent story in front of a physical trauma/accident was most frequent in Greece, followed by Cyprus and then Spain.

In the total sample, the frequency of children with any risk item was 49.8% and the mean number of risk items was 1.37. There were significant differences between the countries, with Cyprus and Greece presenting the highest frequency of children with any risk item (around 60%). Cyprus was the country with the highest mean number of symptoms, followed by Greece and then Spain.

Reliability of the screening tool

The Internal consistency of the items of the questionnaire calculated through Cronbach's alpha was .79 for the total sample, .80 for Cyprus, .68 for Greece and .81 for Spain.

Age differences in the items of the screening tool

Table 4 shows the mean age distribution of at risk and not-at-risk responses by country. For the total sample there were significant differences by age in all the items

except for inconsistency of the explanation of the accident and any other risk factor: the mean age of children at risk (a yes answer or a no answer for item 1a) was higher than the mean age of children not-at-risk. When there were significant differences by age this pattern was constant through the countries and higher risk was identified in older children. In Greece, however, only one item differed by age (tension/anxiety interaction). In Cyprus and Spain older children were identified to be at higher risk for anger/hostility, coldness/detachment interaction and doubts about emotional safety; in Cyprus there were also age differences in rough handling, doubts about physical safety, and other risk factors; in Spain children with a tension/anxiety interaction were older. The between country comparison in risk response (right column of Table 4) gave significant differences for doubts about emotional safety, any other risk factor and any risk item.

Sex differences in the items of the screening tool

There were not sex differences in the frequency of response of the items in any country, in the total sample nor between countries (Table 5).

Discussion

In this pilot study, we developed a screening instrument to detect risk of emotional and physical abuse and neglect in infants and toddlers to be used by professionals in public health centers, mainly in primary care, and we demonstrated its feasibility for the application in Cyprus, Greece and Spain. The development of such an instrument was necessary in these countries of the South of Europe to provide comprehensive care to children and families attending pediatric primary care centers. The instrument has several unique characteristics, since it is: a) short; b) easy to answer;

c) designed for a population with limited access to social agents that could detect abuse; 0-3 children are not in school and, usually, only nurses and pediatricians are in contact with them and with the family; d) focuses in different types of abuse, including relational emotional abuse which is difficult to detect; and e) originally designed for nurses, pediatricians, and other health professionals that come into direct contact with infants, toddlers, and their families.

Several professionals from the different countries participating in the study were able to identify a 49.8 percent of children attending to consultation at risk of abuse and/or neglect. We found significant differences between countries and in Cyprus and Greece the proportion of identified children at risk was higher (near to 60%) compared to Spain. Although the questionnaire does not detect “real” abuse, and further investigation is required to confirm it, the high proportion of risks in all three countries points to the need of preventive educational policies and other preventive measures to decrease exposure to maltreatment. The three participating countries have been affected in the last years by the hard economic crisis that Europe faces, which has resulted in increased stress for average and low socioeconomic status families. This stress affects the whole family and how children are raised. Along this line, among the relational emotional abuse items the most frequent risk factor identified among the participating countries was an interaction characterized by tension/anxiety (Cyprus showing the highest proportion and then Greece), and doubts about the emotional safety of the child, which had a similar distribution among countries, and demonstrated higher frequency than doubts about physical safety. Also, the item about other risk factors was positive for about one third and one fourth of the samples, which means that this proportion of families are exposed to different conditions known to contribute to child abuse. Considering the mean number of risk items, Cyprus showed highest mean of risk items,

followed by Greece. While in no way should these results be interpreted in terms of prevalence, because a representative sample of the countries was not selected, they indicate that the instrument is able to detect situations of risk. Finally, the reliability of the instrument was high for the total sample concerning Cyprus and Spain, and of moderate range for Greece. Thus, it may be stated that the responses to the items comprising the screening instrument that intends to assess risk of abuse and/or neglect are consistent, and associated.

No gender differences were observed in risk distribution: boys and girls in each country were equally likely to experience abuse and/or neglect. However, we observed significant age differences indicating that older children were at greater risk for abuse and neglect. This is a very interesting finding that justifies the development of a screening questionnaire for very young children. The departing point of the European Commission project was to focus in the youngest children (0 to 3 years-old) because of the difficulties for evaluating this age range. The higher risks observed in older children may have several explanations. On one hand, the risk could actually be more frequent in older children because younger children are less at risk since their physical and psychological development prevents them from having a behavior that puts them in at-risk situations. On the other hand, it could be that differences in risk identification by age aroused because of difficulties in identifying risk in younger children. For instance, during the initial phase of the design of the questionnaire, the most difficult items to code were the relational emotional abuse items. It was necessary to extent the examples about hostility, coldness/detachment or tension, because of professionals' difficulties to detect such interactions, especially for younger children. These results suggest the need to provide continuous education on identifying child abuse and neglect that includes

emotional relational abuse to professionals working with children in the first line of care provision. The differences in each individual country may be indicating different needs.

This was a pilot study and the results should be interpreted accordingly, bearing in mind that one of the main purposes was to inform on the feasibility of the screening instrument. Because of the contexts in which the study took place (public health centers) the cases recruited were anonymous and it was not possible to register additional demographic information apart from gender and age, which limited the results. However, the number of participating countries, their geographic characteristics and their currently similar socio-economic situation, strengthen the study's results. Despite these similarities, cross-cultural differences were identified, suggesting differential risk for child abuse and/or neglect in the three countries. Regardless of the different health and social systems of each country, it was possible to come into a consensus leading to a screening instrument for the detection of risk of abuse and/or neglect in infants and toddlers. Future research must report about the discriminative capacity of the instrument.

Key Messages

- There is now available a feasible screening instrument to detect risk of emotional and physical abuse and neglect in infants and toddlers to be used by professionals in public health centers, mainly in primary care. No previous screening instruments include assessment of emotional abuse.
- The use of a screening tool in pediatric primary care can help to provide comprehensive care to children and families attending to these services.

- The application of the questionnaire identified situations that put 0-3 year-old children at risk of being victims of maltreatment, such as lack of age-appropriate supervision or relational emotional abusive behaviors (anxiety/tension, coldness, anger, hostility). These results suggest the need to provide continuous education on identifying child abuse and neglect that includes emotional relational abuse to professionals working with children in the first line of care provision.

References

- Almirall, N., Forns, M., Torné, R. & Curt Del Prado, G. (2004) *Maltractaments físics greus a nadons i menors de quatre anys [Severe physical maltreatment to babies and infants under age 4]*. Generalitat de Catalunya. Departament de Benestar Social., Barcelona.
- Andrews, G., Corry, J., Slade, T., Issakidis, C. & Swanston, H. (2004) Comparative quantification of health risks: Global and regional burden of disease attributable to selected major risk factors In: *Child sexual abuse* (eds. Ezzati, M., Lopez, A. D., Rodgers, A. & Murray, C. J. L.), pp. 1851–1940. World Health Organization, City.
- Benger, J. R. & Pearce, V. (2002) Simple intervention to improve detection of child abuse in emergency departments. *BMJ pediatrics*, **324**, 780.
- Fanti, K.A., Karayianni, E., Diakidou, I.A. Katsimicha, E., & Hadjicharambous, M. (in preparation). Child abuse: The Cyprus reality.
- Gilbert, R., Fluke, J., O'donnell, M., Gonzalez-Izquierdo, A., Brownell, M., Gulliver, P., Janson, S. & Sidebotham, P. (2012) Child maltreatment: variation in trends and policies in six developed countries. *Lancet* **379** 758-772.
- Inglès, A. & Prats, A. (2008) *El Maltractament d'infants a Catalunya. Quants. Com. Per què? [Infant maltreatment in Catalonia. How many? How? Why?]*, Centre d'estudis Jurídics. Generalitat de Catalunya., Barcelona.
- Leeb, R. T., Paulozzi, L., Melanson, C., Simon, T. & Arias, I. (2008) *Child maltreatment surveillance. Uniform definitions for public health and recommended data elements*, Centers for Disease Control and Prevention., Atlanta.

- Louwers, E. C., Korfage, I. J., Affourtit, M. J., De Koning, H. J. & Moll, H. A. (2012) Facilitators and barriers to screening for child abuse in the emergency department. *BMC Pediatrics*, **12**, 167-172
- Louwers, E. C., Korfage, I. J., Affourtit, M. J., Ruige, M., Van Den Elzen, A. P., De Koning, H. J. & Moll, H. A. (2013) Accuracy of a screening instrument to identify potential child abuse in emergency departments. *Child Abuse and Neglect*, **38**, 1275-1281.
- Macmillan, H. L. & Wathen, C. N. (2014) *Research Brief: Interventions to Prevent Child Maltreatment*. , PreVAiL: Preventing Violence Across the Lifespan Research Network, London, ON.
- Martín, L. & Pedreira, J. L. (1997) El pediatra ante maltrato de infancia: De la denuncia al tratamiento. *Anales Españoles de Pediatría*, **47**, 231-233.
- Martin, P., Duffy, T., Johnston, B., Banks, P., Harkess-Murphy, E. & Martin, C. R. (2013) Family health nursing: A response to the global health challenges. *Journal of Family Nursing*, **19**, 99–118.
- Mccrory, E., De Brito, S. A. & Viding, E. (2012) The link between child abuse and psychopathology: a review of neurobiological and genetic research *Journal of Royal Society of Medicine*, **105**, 151-156.
- Miller, G. E., Chen, E. & Parker, K. J. (2011) Psychological stress in childhood and susceptibility to the chronic diseases of aging: moving toward a model of behavioral and biological mechanisms. *Psychological Bulletin*, **137**, 959-997.
- Naughton, A. M., Maguire, S. A., Mann, M. K., Lumb, R. C., Tempest, V., Gracias, S. & Kemp, A. M. (2013) Emotional, behavioral, and developmental features indicative of neglect or emotional abuse in preschool children: A systematic review *JAMA Pediatrics*, **167**, 769-775.

- Norman, R. E., Byambaa, M., De R, B., A., Scott, J. & Vos, T. (2012) The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLOS Medicine*, **9**, e1001349.
- Ntinapogias, A., Tsirigoti, A. & Nikolaidis, G. (2013) Child abuse and neglect: Why monitoring is necessary? . Available at: http://www.aahd.org.tr/wp-content/uploads/2015/03/WP6_ENG_2.pdf (April 15 2015)
- Sittig, J. S., Post, E. D., Russel, I. M., Van Dijk, I. A., Nieuwenhuis, E. E. & Van De Putte, E. M. (2013) Evaluation of suspected child abuse at the ED; implementation of American Academy of Pediatrics guidelines in the Netherlands. . *American Journal of Emergency Medicine*, **32**, 64-66.
- Sroufe, L. A., Egeland, B., Carlson, E. & Collins, W. A. (2005) *The development of the person: The Minnesota study of risk and adaptation from birth to adulthood.*, Guilford, New York.
- Woodman, J., Pitt, M., Wentz, R., Taylor, B., Hodes, D. & Gilbert, R. E. (2008) Performance of screening tests for child physical abuse in accident and emergency departments. *Health Technology Assessment Reports*, **12**.
- World Health Organization and International Society for Prevention of Child Abuse and Neglect (2006) *Preventing child maltreatment: A guide to taking action and generating evidence*, World Health Organization, Geneva.

Table 1.

Description of the sample

		Cyprus	Greece	Spain	Total
<i>Professionals</i>		<i>N</i> = 16	<i>N</i> = 15	<i>N</i> = 19	<i>N</i> = 61
Sex <i>N</i> (%)	Female	12 (75)	15 (100)	17 (89.5)	37 (94.9)
	Male	4 (25)	0	2 (10.5)	2 (5.1)
Mean years working with infant/toddlers		5	8.5	16.2	13.2
Experience with direct observation (%)		37.5	64.3	84.2	73.0
Mean years of experience		5	4.6	14.8	10.7
Previous experience with diagnostic evaluation		31.3	35.7	31.6	32.4
<i>Children</i>		<i>N</i> = 59	<i>N</i> = 61	<i>N</i> = 99	<i>N</i> = 219
Girls <i>N</i> (%)		22 (37.9)	35 (58.3)	41 (41.4)	98 (45.2)
Boys <i>N</i> (%)		36 (62.1)	25 (41.7)	58 (58.6)	119 (54.8)
Age (months)	Mean (SD)	22.2 (11.8)	16.9 (12.1)	20.46 (11.0)	19.9 (11.6)
	Range	1.5-36.5	1.5-36.6	1-44.5	1-44.5
<i>Caretaker accompanying the child (%)</i>					
Mother/stepmother		82.0	83.3	80.0	81.8
Grandmother		12.0	18.3	12.1	13.9
Other female relative		-	8.3	-	2.4
Father/stepfather		54.0	31.7	28.3	35.4
Grandfather		4.0	1.7	2.0	2.4
Other male relative		-	1.7	1.0	0.5

Table 2

The INTOVIAN screening instrument for identifying risk of emotional and physical abuse and neglect in infants and toddlers

Question	Yes	No	Not Applicable
1. In the case of noticing a physical trauma/mark or being informed about an accident:			
a. is the caregiver's story consistent?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. could the accident/physical trauma have been avoided or prevented with age-appropriate supervision?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Is the caregiver-infant/toddler <u>interaction</u> characterized by (a, b and c are NOT mutually exclusive):			
a. anger and/or hostility?	<input type="radio"/>	<input type="radio"/>	
b. coldness and/or detachment?	<input type="radio"/>	<input type="radio"/>	
c. tension and/or excessive anxiety?	<input type="radio"/>	<input type="radio"/>	
3. Does the caregiver handle the infant/toddler in a physically rough and/or harming way?	<input type="radio"/>	<input type="radio"/>	
4. Are there any <u>other</u> signals that make you doubt:			
a. the physical safety of the infant/toddler?	<input type="radio"/>	<input type="radio"/>	
b. the emotional safety of the infant/toddler?	<input type="radio"/>	<input type="radio"/>	
5. Is there <u>any other risk factor</u> that makes you doubt the safety and/or the appropriateness of care for this infant/toddler?	<input type="radio"/>	<input type="radio"/>	
<i>If yes, please specify:</i>			

Table 3.

Risk Response (YES) frequencies to the items of INTOVIAN Screening tool and comparison by country.

	Cyprus	Greece	Spain	Total	p
Item N (%)	N = 59	N = 61	N = 99	N = 219	
1a. physical trauma/accident: story consistent? (risk answer is NO)	12 (41.4)	8 (88.9)	4 (16.7)	24 (38.7)	.001
1b. physical trauma/accident: could be avoided?	21 (80.8)	0	11 (55.0)	32 (57.1)	<.001
2a. Interaction: anger/hostility?	7 (14.9)	3 (5.5)	4 (4.5)	14 (7.4)	.073
2b. Interaction: coldness/detachment?	9 (18.0)	4 (7.4)	9 (9.7)	22 (11.2)	.189
2c. Interaction: tension/anxiety?	18 (32.7)	17 (28.8)	12 (13.0)	47 (22.8)	.010
3. Rough handling	9 (18.0)	4 (6.8)	3 (3.2)	16 (7.9)	.007
4a. Doubts about physical safety?	13 (24.1)	8 (13.3)	9 (9.3)	30 (14.2)	.043
4b. Doubts about emotional safety?	17 (30.9)	17 (27.9)	18 (18.4)	52 (24.3)	.165
5. Any other risk factor?	19 (33.9)	20 (32.8)	24 (24.5)	63 (29.3)	.362
Mean number of risk items	2.12	1.33	0.95	1.37	.001 ^a
Number of cases with any risk item	37 (62.7)	37 (60.7)	35 (35.4)	109 (49.8)	.001

Note. ^a Kruskal-Wallis significance. Not applicable values were excluded.

Table 4

Age differences in at risk and not-at-risk responses by country

Item	Cyprus (<i>N</i> = 59)			Greece (<i>N</i> = 61)			Spain (<i>N</i> = 99)			Total (<i>N</i> = 219)			Between Countries in risk responses <i>p</i>
	Mean age			Mean age			Mean age			Mean age			
	Yes	No	<i>p</i>	Yes	No	<i>p</i>	Yes	No	<i>p</i>	Yes	No	<i>p</i>	
1a. physical trauma/accident: story consistent?	28.4	22.8	.222	26.5	9.3	-	20.3	34.3	.020	24.1	20.2	.258	.006
1b. physical trauma/accident: could be avoided?	27.2	25.6	.764	-	11.2	-	22.5	24.4	.723	25.6	19.1	.048	.245
2a. Interaction: anger/hostility?	28.9	19.2	.048	27.5	16.9	.102	35.7	18.7	<.001	30.6	18.3	<.001	.487
2b. Interaction: coldness/detachment?	28.9	19.7	.035	11.8	17.3	.389	27.3	19.3	.036	25.1	18.8	.016	.064
2c. Interaction: tension/anxiety?	24.6	20.2	.206	23.0	14.6	.015	26.9	18.5	.011	24.6	17.9	<.001	.655
3. Rough handling	31.3	19.9	.001	23.0	16.5	.311	31.5	19.6	.063	29.3	18.8	.001	.352
4a. Doubts about physical safety?	29.5	18.9	.004	21.0	16.6	.338	26.4	19.8	.076	26.3	18.7	.001	.285
4b. Doubts about emotional safety?	27.6	19.2	.015	18.4	16.3	.546	27.3	19.1	.003	24.5	18.4	.001	.046
5. Any other risk factor?	26.9	19.3	.022	15.7	17.5	.573	23.5	19.3	.101	22.0	18.8	.088	.019
Any RISK item	26.0	15.8	.001	16.8	17.0	.950	24.3	18.3	.009	22.3	17.6	.002	.002

In bold significant difference. Not applicable values were excluded.

Table 5

Sex distribution of at risk and not-at-risk responses by country

Item	Cyprus (<i>N</i> = 59)			Greece (<i>N</i> = 61)			Spain (<i>N</i> = 99)			Total (<i>N</i> = 219)			Between Countries <i>p</i>
	Child's sex			Child's sex			Child's sex			Child's sex			
	<i>N</i> (%)			<i>N</i> (%)			<i>N</i> (%)			<i>N</i> (%)			
	Girl	Boy	<i>p</i>	Girl	Boy	<i>p</i>	Girl	Boy	<i>p</i>	Girl	Boy	<i>p</i>	
1a. physical trauma: story consistent? (Response NO)	1 (14.3)	11 52.4	.184	5 100	3 75.0	.444	1 (11.1)	3 (20.0)	1	17 (33.3)	17 (42.5)	.486	.723
1b. physical trauma: could be avoided?	6 (75.0)	14 82.4	.668	0	0	-	3 (42.9)	8 (61.5)	.642	9 (45.0)	22 (62.9)	.199	-
2a. Interaction: anger/hostility?	2 (10.0)	5 18.5	.682	1 3.2	2 8.3	.575	1 (2.8)	3 (5.8)	.642	4 (4.5)	10 (9.6)	.179	.971
2b. Interaction: coldness/detachment?	4 (20.0)	5 17.2	1	2 6.5	2 8.7	1	4 (10.5)	5 (9.1)	1	10 (11.1)	12 (11.1)	.996	.980
2c. Interaction: tension/anxiety?	6 (30.0)	12 35.3	.690	9 27.3	7 28.0	.951	5 (13.5)	7 (12.7)	.913	20 (22.0)	26 (22.8)	.921	.400
3. Rough handling	3 (17.9)	5 15.6	1	1 2.9	3 12.0	.302	2 (5.3)	1 (1.8)	.563	6 (6.7)	9 (8.0)	.742	.526
4a. Doubts about physical safety?	3 (15.8)	10 29.4	.334	3 8.8	5 20.0	.265	3 (7.5)	6 (10.5)	.732	9 (9.7)	21 (18.1)	.084	.756
4b. Doubts about emotional safety?	6 (31.6)	11 31.4	.991	12 34.3	5 20.0	.226	8 (19.5)	10 (17.5)	.804	26 (27.4)	26 (22.2)	.386	.102
5. Any other risk factor?	5 (25.0)	14 40.0	.260	11 31.4	8 32.0	.963	8 (19.5)	16 (28.1)	.331	24 (25.0)	38 32.5	.232	.107
Any RISK item	11 (50.0)	25 69.4	.139	20 57.1	16 64.0	.593	15 (36.6)	20 (34.5)	.829	46 (46.9)	61 51.3	.526	.101