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Screening for potential child maltreatment in parents of a newborn baby: The predictive validity of an Instrument for early identification of Parents At Risk for child Abuse and Neglect (IPARAN)

Claudia E. van der Put[a,*], Merian B.R. Bouwmeester-Landweer[b,1], Eleonore A. Landsmeer-Beker[b,2], Jan M. Wit[b], Friedo W. Dekker[c], N. Pieter J. Kousemaker[d], Herman E.M. Baartman[e]

[a] Research Institute of Child Development and Education, University of Amsterdam, The Netherlands
[b] Department of Pediatrics, Leiden University Medical Center, Leiden, The Netherlands
[c] Department of Clinical Epidemiology, Leiden University Medical Center, Leiden, The Netherlands
[d] Leiden University, Leiden, The Netherlands
[e] Department of Orthopedagogics, Free University, Amsterdam, The Netherlands

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ABSTRACT

For preventive purposes it is important to be able to identify families with a high risk of child maltreatment at an early stage. Therefore we developed an actuarial instrument for screening families with a newborn baby, the Instrument for identification of Parents At Risk for child Abuse and Neglect (IPARAN). The aim of this study was to assess the predictive validity of the IPARAN and to examine whether combining actuarial and clinical methods leads to an improvement of the predictive validity. We examined the predictive validity by calculating several performance indicators (i.e., sensitivity, specificity and the Area Under the receiver operating characteristic Curve [AUC]) in a sample of 4692 Dutch families with newborns. The outcome measure was a report of child maltreatment at Child Protection Services during a follow-up of 3 years. For 17 children (.4%) a report of maltreatment was registered. The predictive validity of the IPARAN was significantly better than chance (AUC = .700, 95% CI [.567–.832]), in contrast to a low value for clinical judgement of nurses of the Youth Health Care Centers (AUC = .591, 95% CI [.422–.759]). The combination of the IPARAN and clinical judgement resulted in the highest predictive validity (AUC = .720, 95% CI [.593–.847]), however, the difference between the methods did not reach statistical significance. The good predictive validity of the IPARAN in combination with clinical judgment of the nurse enables professionals to assess risks at an early stage and to make referrals to early intervention programs.

Child maltreatment is a serious problem, both internationally and in The Netherlands. In The Netherlands, the annual prevalence rate is estimated at 9.9% based on self-reports (Alink et al., 2011), which is comparable to the prevalence rate in the United States

* Corresponding author at: University of Amsterdam, Research Institute of Child Development and Education, P.O. Box 94208, 1090 GE Amsterdam, The Netherlands.
E-mail address: C.E.vanderPut@uva.nl (C.E. van der Put).
[1] Present affiliation: Public Health Service (GGD) Gouda, The Netherlands.
[2] Present affiliation: Psychotrauma Centre for Children and Youth, GGZ Rivierduinen, Leiden, The Netherlands.

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(Finkelhor, Turner, Ormrod, & Hamby, 2009). Young children have the highest rate of victimization, and child maltreatment at an early age has major negative consequences on the child's socio-emotional development, attachment security, physical growth and development, and quality of life (Eigsti & Cicchetti, 2004; English, Thompson, Graham, & Briggs, 2005; Scarborough & McRae, 2008; Straus & Smith, 1993). Research suggests that early intervention programs can be effective in preventing child maltreatment (Dombrowski, Timmer, Blacker, & Urquiza, 2005; Gershater-Molko, Lutzker, & Wesch, 2003; Reynolds, Mathieson, & Topitzes, 2009; Saunders & O'Brien, 1997). In order to be able to prevent child maltreatment it is necessary to screen for potential maltreatment in the general population, for example during youth health care visits up to the age of four years or even before birth (prenatally). The availability of reliable and valid screening instruments would enable professionals to assess risks and to make referrals to early intervention programs. However, the development and validation of screening instruments for child maltreatment in the general population is still in its infancy (Nygren, Nelson & Klein, 2004). Only a few instruments are available worldwide and most of them have only been validated to a limited extent.

There are two major approaches to risk assessment in child protection: actuarial and clinical judgment. In actuarial approaches, conclusions are based solely on empirically established relations between data and the outcome of interest, whereas in clinical approaches, conclusions are based on the judgment of a professional who interprets, combines and weighs information in a subjective manner (Dawes, Faust, & Meehl, 1989). Clinical instruments can be further classified into (a) unaided decision-making based on experience, knowledge and intuition (unstructured clinical judgment), (b) tools based on the opinions of experts, but often without an empirical basis (consensus-based instruments), and (c) empirically based tools that leave the final decision-making process to the professional (structured clinical judgment; SCJ).

Worldwide, clinical approaches are more common in child protection practices than actuarial instruments. This is remarkable because international validation studies indicate that the performance of most clinical methods is questionable (Arad-Davidson & Benbenishty, 2008; Baird & Wagner, 2000; Barlow et al., 2010; Camasso & Jagannathan, 2000; D'Andrade, Benton, & Austin, 2005; DePanfilis & Girvin, 2005; Dorsey, Mustillo, Farmer, & Elbogen, 2008; Knoke & Trocmé, 2005; Lyons, Doueck, & Wodarski, 1996; Munro, 1999; Pfister & Böhm, 2008; Wald & Woolverton, 1990). Validation studies have even shown that some widely used clinical instruments perform no better than chance, meaning that in many cases an incorrect judgement is made (Baird & Wagner, 2000; Barber, Shlonsky, Black, Goodman, & Trocmé, 2008; Van der Put, Assink, & Stams, 2016). Moreover, studies comparing different methods have consistently shown that actuarial approaches outperform clinical approaches at estimating risks within different domains such as child welfare, criminal justice, forensic mental health, and clinical psychology (Baird & Wagner, 2000; D'Andrade et al., 2005; Dawes et al., 1989; Grove & Meehl, 1996; Leschied, Chiodo, Whitehead, Hurley, & Marshall, 2003). One of the explanations for the superior predictive performance of actuarial methods is that the reliability of actuarial instruments is higher, because the scoring and combining of risk factors occurs according to a fixed algorithm, meaning that professionals use the same scoring rules, whereas in clinical methods the scoring and combining of risk factors is done in a subjective fashion (e.g., Dawes et al., 1989; Gambrill & Shlonsky, 2000) (Fig. 1).

At the time that this study was started, no screening instruments were available in The Netherlands for assessing the risk of child maltreatment in the general population. Only instruments for assessing the risk of recurrence of child maltreatment were used, namely the Light Instrument Appraisal Child Maltreatment (LIRIK; Ten Berge & Eijgenraam, 2009), the Child Abuse Risk Evaluation-Netherlands (CARE-NL; De Ruiter & De Jong, 2005) and the Delta Safety List (Heinrich & Braak, 2007), which are all clinical instruments. In addition, an actuarial instrument, the California Family Risk Assessment (CFRA), was used in a regional pilot of The Netherlands to assess the risk of child maltreatment in families who were referred to specialized family support because of parenting and/or child developmental problems (Van der Put, Hermanns, Van Rijn-Van Gelderen, & Sondeijker, 2016). The CFRA is an actuarial risk assessment instrument originally designed for assessing the risk of child maltreatment subsequent to receipt of an initial maltreatment report (Johnson, 2011).

The difference between screening (assessing potential for child maltreatment before it occurs) and assessing risk of recurrence of child maltreatment is crucial since the populations assessed and their risk of child maltreatment differ, as do relevant predictive factors (Cash, 2001). Screening aims to assess the risk of child maltreatment in the general population where the risk of child maltreatment is relatively small, whereas risk assessment aims to assess the risk of (repeated) child maltreatment in high-risk groups such as families under the guidance of child protection services. In scientific literature, there is particular emphasis on instruments assessing the risk of recurrence of child maltreatment and much less on screening instruments for assessing the risk of child maltreatment in the general population. This is because assessing the risk of recurrence of child maltreatment is the most commonly employed prognostic process in child welfare services involved in maltreatment.

Because no screening instruments were available, we developed a new actuarial instrument for parents with newborns, the Instrument for Identification of Parents At Risk for child Abuse and Neglect (IPARAN; Bouwmeester-Landweer, 2006; see instruments section). The development of the IPARAN was part of a large Dutch research and intervention project in collaboration with the Dutch Youth Health Care Centers (YHCs). The aim of the project was to provide parents at increased risk of child maltreatment with a preventive intervention by means of home-visits during the first 18 months of life of their newborn baby (Supportive Parenting Intervention). In The Netherlands, YHCs monitor and promote the health and development of children aged 0–4 years, and are the first portal to Child Health Care in The Netherlands. They are comparable to Well Baby Clinics, with the exception that they continue to monitor the child until the age of four years (since 2015 even until the age of 18 years). The nurses and doctors working at these YHCs regularly examine nearly all infants and young children in The Netherlands (95–98% of all infants aged 0–1 years; Burgmeijer, Van Geenhuizen, Filedt kok-Weimar, & De Jager, 1997; Dunnink, 2010). They have a primary function in screening for risk factors regarding the child's physical, intellectual, social and psychological development, including problematic child-rearing situations and the first signs of child maltreatment. The importance of the role of nurses in the assessment of the risk or actual presence of