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INFANCY IN 21ST CENTURY HUNGARY - A PROJECT INTRODUCTION

Policy, Theoretical and Methodological Framework and Objectives of the First National Representative Parent Survey on Infant and Early Childhood Mental Health**

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Objectives: *Infancy in 21st Century Hungary* is the first Hungarian national representative parent survey to examine early childhood mental health problems and important individual, family and broader environmental risk and protective factors associated with them.

Methods: In the study, families raising children aged 3-36 months were included. The sample was nationally representative according to the children's age and gender, and the type of residence. Data were collected in the winter of 2019-2020 from 980 mothers and 122 fathers. The parents were interviewed using a CAPI (computer-assisted personal interview) instrument at first, and then they filled out a self-administered questionnaire (SAQ). The measurement package was planned by an interdisciplinary research network coordinated by the Institute of Mental Health at Semmelweis University, while the sampling and the data collection were conducted by the TÁRKI Research Institute.

Results: Based on the parental reports, we will examine the prevalence of infant and early childhood mental health problems perceived by the parents, and the relationships between the background variables measured in several ecological levels. Due to the representative sample's socio-demographic diversity, we can map the generalizable variability of each examined construct and identify risk and protective factors behind the perceived developmental and mental health difficulties.

Conclusions: In this article, the policy, theoretical and methodological framework, the justification and objectives of the research, and the measurement package are presented.

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In the introduction of policy and theoretical framework, the first author relied on her previous works in Hungarian (DANIS 2015; DANIS & KALMÁR 2011).

Keywords: infant and early childhood mental health (IECMH); parenting; representative survey; methodology; measurements

1. Introduction

1.1. Policy background of the research

1.1.1. Investments in early childhood development

Compared to school-age intervention programs, the financial and human resources invested in early childhood care, education, and mental health deliver proven returns at the global socio-economic level (GENNETIAN et al. 2016; HECKMAN 2011; DOYLE et al. 2009; HECKMAN & MASTEROV 2007; GRUNEWALD & ROLNICK 2007). The earlier we identify children and families with developmental risks resulting from disadvantaged biological or social conditions and transfer them to appropriate services and programs, the more successfully we can lower subsequent costs of special education and care and create economic and social benefits.

When a child is showing physical, mental or relational symptoms in development, the planned interventions should not only focus on the child himself, but also on the parents and the family caring for him, and on the institutional background and the professional teams that will help the family (see 'team around the child' / 'team around the family' perspectives; Institute of Public Care 2012; LIMBRICK 2007). According to the ecological model of human development (BRONFENBRENNER 1979; 1986; BRONFENBRENNER & CECI 1994; BRONFENBRENNER & EWANS 2000), the life of an infant or a toddler and his parents is impacted by many proximal and distal influences. Childbearing and childrearing values, goals and decisions of parents are influenced by a variety of factors. These include family structure, family functioning, social and institutional networks and the broader society and culture. All these environmental factors impact the parents' everyday parenting practices and interactions, and thus the development of the child (*Figure 1*). Besides the most important and influential microsystem around the child (his family and the most important inter-related proximal relationships), the members and agents of the mesosystem in Bronfenbrenner's model (especially helping professionals, services and teams around the child and the family) will become more and more important in the 21st century. The fate of children and families faced with biological (SHONKOFF & MEISELS 2000) or social (SHONKOFF & PHILLIPS 2000) disadvantage, and of relational, psychosocial or mental health problems (ZEANAH 2018) depends on the quality of organized help and support, the quality and availability of services (health care, education, social welfare, and family policy), and the services' adaptability to children's and families' real needs. The aim is, therefore, to create all the necessary material and personal conditions for all young children, regardless of their physical, mental and relational characteristics, starting at birth or even earlier, during pregnancy, to help them develop their skills and authentic personality to the fullest extent.

1.1.2. Infant and early childhood mental health (IECMH)

The development of early childhood intervention areas in Hungary. In Hungary, *early intervention for disabled or atypically developing children* is part of the special care system for decades. This approach was recently renamed as is now known as 'family-centred early childhood intervention' (CZEIZEL & KEMÉNY 2015). In recent years, much effort has been directed at reforming the national early intervention system through EU co-funded projects (KERÉKI 2020). Since the mid-2000s, also through EU co-funded projects, remarkable intervention programs have been implemented specifically targeting *young children and families in socially disadvantaged settlements* (e.g., Biztos Kezdet program [Hungarian Sure Start Program]; Gyerekesély programok [Child Opportunities Programs]; HUSZ 2016). In addition to these two areas of intervention, the promotion and support of *infant and early childhood mental health* are also very important. However, it has yet to receive central support in Hungary. As child poverty and developmental and mental health problems of young children increase, families and the professionals who help them will need even more effective and targeted support so that disadvantaged children can receive the resources and services they need as early as possible.

Since these three intervention areas and target groups often overlap (KLAWETTER & FRANKEL 2018; WEATHERSTON & BROWNE 2016), we argue that the promotion and support of infant and early childhood mental health and the early parent-child relationship should be the priorities in every universal and targeted intervention programs and service networks in Hungary, just as they are in elsewhere in the international field (WEATHERSTON & FITZGERALD 2019; ZEANAHA & ZEANAHA 2018). The main goals of integrated health, social and educational services include supporting competent parenting, parental mental health, a positive parent-child relationship and the optimal overall and mental health development of infants and young children.

In the international tradition, infant and early childhood mental health (IECMH) is an interdisciplinary field in which theory and research, clinical practice and services, and training and policy issues are integrated (FITZGERALD et al. 2011; NELSON & MANN 2011).

1.1.3. Training, services, and policies on IECMH in Hungary

- Achievements so far and future aims

Professional education and training. In the international field, professionals (Infant Mental Health Specialists) are trained on several levels (HINSHAW-FUSELIER et al. 2018; ZEANAHA et al. 2005a). There are also training programs that provide basic qualifications (BAs/MAs), but generally, specialists who intend to work in this field acquire complex theoretical, methodological and practical knowledge and skills in specialized postgraduate courses. We can find several trends and traditions in training with different focus points. The Anglo-Saxon approach is interdisciplinary: in addition to specific social assistance, emotional support, parent education on child

development and needs (developmental guidance), early relationship assessment and support, advocacy, and parent-infant consultation or psychotherapy (depending on the degree of clinical education and skills) are parts of a specialist's repertoire (e.g., WEATHERSTON et al. 2009; WEATHERSTON 2002).

Although some professional teams began work in the '90s in Hungary (NÉMETH et al. 2015), IECMH as an interdisciplinary discipline and practical approach is just beginning to become a hot issue in our country. Until 2010, only a few professionals were dealing with infants' and young children's mental health problems. They were generally trained in psychoanalytic psychotherapy, a discipline for which there is no university-level training in Hungary. Specialized postgraduate university training programs have been available for interested professionals only since 2010. Currently, there are three universities, including the Institute of Mental Health at Semmelweis University where students can study methods of parent-infant consultation. These are practice-oriented, specialized, 4-semester-long programs offering lectures for practitioners trained in different disciplines of helping professions. However, at present, there are no BA/BSc or MA/MSc training programs on IECMH in Hungary.

Semmelweis University Institute of Mental Health is planning to launch a new MA/MSc program and a professional centre for IECMH in the near future. The purpose is to establish a 4-semester-long interdisciplinary program on infant and early childhood development and mental health, where evidence-based knowledge on theoretical, clinical and policy issues would be shared with students. According to our plan, this MA/MSc program would provide a strong theoretical basis for students. Following graduation, students could choose clinical specializations (post-graduate training programs for consultants or therapists) or continue in a scientific direction to the PhD level.

Besides the integration of experiences in international training traditions, the empirical results of the first national, representative research on IEMCH in our country (21. századi babaszoba [Infancy in 21st Century Hungary]) can strengthen the need for introducing a new subspecialty of helping professions and the justification for establishing a new training program.

Services. Supporting parental well-being and infant and early childhood mental health (IECMH) has been a well-established interdisciplinary, cross-sectoral task in Western European countries and overseas for decades (OSOFSKY 2016). The tasks are performed in sectoral placements (primary care, early education, home visiting, etc.), in cross-sectoral integrated institutions or stand-alone networks of interdisciplinary teams (Infant Mental Health Services) (GLEASON 2018; TRIGG & KEYES 2018; ZEANA & KORFMACHER 2018). Many evidence-based and protocolled intervention programs are also available (ZEANA et al. 2005b; STEELE & STEELE 2018).

In Hungary, some important initiatives were implemented. Therapeutic teams began work to support early mental health and parent-child relationships in the '90s, which later unfolded in the 2000s. However, these services remain scattered (NÉMETH et al. 2015; 2016). The evidence-based, interdisciplinary and systemic approach of IECMH are not yet widespread in our country. A future challenge is the acquisition of unified professional knowledge and competencies, as well as networking across

Hungary. It requires the collection and integration of both international and national experiences and the dissemination of a unified but diversity-sensitive approach. There is also a big challenge of broadening the existing services nationally.

Policies. Intensive policy work is also done in many countries (ZERO TO THREE 2016b; NELSON & MANN 2011). A series of guidelines and protocols¹ have been published on the key competencies expected of early childhood mental health professionals and the principles for designing effective services. Coordinating policy guidelines for professionals on uniformly expected competencies (knowledge, attitudes, practical skills), effective design of services and networks, and the availability of training, are such important requirements without which a society cannot strike a role in early childhood mental health (ZEANAH et al. 2005a).

IECMH policy is still completely missing in Hungary. There are some guidelines and protocols on subareas, but we have no general frameworks for competencies of specialists working in the IECMH field or guidelines for establishing new services.

National representative research can provide data on topics that can support the process of problem screening, identification and treatment, mapping specific needs of children and families, planning and organizing effective services.

1.1.4. Research on IECMH in Hungary - Achievements so far and future aims

Despite the international interest in IECMH problems for decades (see many edited or summarized works: ZEANAH 2018; BRANDT et al. 2014; PAPOUSEK et al. 2008; LUBY 2006; GREENSPAN & WIEDER 2005; OSOFSKY & FITZERALD 2000), detailed scientific presentation of the subject is still very incomplete in Hungary. Although several research teams have been dealing with early childhood development, specific research on early childhood mental health issues has only recently begun.

The *For Healthy Offspring* (Egészséges Utódokért) project was the first large sample study (n = 1164) in Hungary (conducted in the Heim Pal Children's Hospital in 2010-2011) examining the prevalence of early childhood regulation problems and measuring the complex bio-psycho-social background factors behind them. Although the *For Healthy Offspring* project (SCHEURING et al. 2012²) was outstanding due to the large sample size, the complex assumptions, the extensive measurements and the controlled methodology, it was not a representative study.

In Hungary, a comprehensive, interdisciplinary cohort study began in 2018, which partly examines infant and early childhood mental health issues. The *Cohort' 18 - Growing up in Hungary*³ (Kohorsz '18 - Magyar Születési Kohorszvizsgálat;

¹ Two important examples are the summary published in 2017 by ZERO TO THREE in U.S. (*Infant and Early Childhood Mental Health Competencies: A Briefing Paper*, retrieved 18 Nov 2020 from <https://www.zerotothree.org/resources/2116-infant-and-early-childhood-mental-health-competencies-a-briefing-paper>), and a guideline published in the U.K. in 2019 (*Infant Mental Health Competencies Framework*, retrieved 18 Nov 2020 from <https://aimh.org.uk/infant-mental-health-competencies-framework/>).

² See publications: <http://heimpalkorhaz.hu/kutatasi-programok/>

³ <https://www.kohorsz18.hu/en/>

VEROSZTA et al. 2020; VEROSZTA 2019) was initiated by the Hungarian Demographic Research Institute (Népeségtudományi Kutatóintézet) of the Hungarian Central Statistical Office (Központi Statisztikai Hivatal). It tracks the growth of children born in 2018-2019 from fetal age. A sample of 10,000 children is followed during pregnancy and then 6 months, 1.5 and 3 years after birth. A long-term goal is to examine children's life course into adulthood. This Hungarian cohort study has been examining socio-demographic, health and development issues. The team consists of demographers, sociologists, health scientists, and psychologists. The team examines children's developmental indicators and conducts background research on the family and the broader influences. Currently, the study is collecting data from parents of 1.5-year-old children.

No previous representative national research specifically on parenting and mental health of young children has been conducted in Hungary. That is why little is known about the national prevalence and background of parenting issues and IECMH problems. In 2019-2020 within an EU co-funded project (EFOP 3.4.3⁴), a representative parent survey (n = 980, called *Infancy in 21st Century Hungary*) on IECMH issues was conducted examining several levels of ecosystems in the background. The research was designed, and the measurements were planned by an interdisciplinary research network⁵. The members of the network were researchers and practitioners from several university departments and services. The planning of the measurement package was coordinated by the first author at the Institute of Mental Health at Semmelweis University Budapest. Sampling and data collection was performed by TÁRKI Research Institute. The survey (see methodological details below) fills an important gap in national basic and applied research. Several disciplines and professions can utilize the results, as it included questions about aspects of family sociology, developmental and family psychology, clinical psychology, infant and early childhood mental health, and paediatrics. Given the large representative sample, the results of this project are expected to attract international attention, especially as current relevant IEMCH literature comes mostly from small-sample or non-representative large-sample studies. Besides, to date, data have hardly been published from Central Europe.

1.2. Theoretical and methodological background of the research

1.2.1 A general framework

The constructs to be examined are theoretically supported by Bronfenbrenner's human ecological model (BRONFENBRENNER 1979; 1986; BRONFENBRENNER & CECI 1994; BRONFENBRENNER & EWANS 2000), Sameroff's transactional model of development

⁴ EFOP-3.4.3-16-2016-00007 - 'Broadening the student base of Semmelweis University, through launching programs to support entry and attendance, and launching services at the new Balassagyarmat site'.

⁵ In the research network developmental researchers, sociologists, social workers, psychologists, mental health professionals, special education teachers, paediatricians, health visitors, parent-infant/young child consultants, IBCLC consultants etc. worked together.

(SAMEROFF 2009, 1975), the general systems theory (COWAN & COWAN 2006; BERTALANFFY 1968) and many other applied developmental theories (such as 'life-cycle' models: CARTER & MCGOLDRICK 1990; goodness-of-fit model: CHESSE & THOMAS 2012). The importance of multifactorial causation in developmental psychopathology (CICCHETTI & ROGOSCH 1996; BRYANT 1990), as well as the knowledge of resilience research about the impacts of risk and protective factors forming development (MARTEN & BARNES 2018; LUTHAR et al. 2015), are also considered.

Besides the innate intuitive component of parenting (PAPOUSEK & PAPOUSEK 2002), caregiving and parental competence have a conscious component, that can be learned, developed, and changed. It has three levels related to each other: (i) knowledge about the child's developmental needs, (ii) child-rearing attitudes, values and views, and the (iii) concrete parenting practices and habits (BREINER et al. 2016). Parents' knowledge on development, attitudes and thoughts toward children, parenting goals, values and caregiving behaviours are greatly affected by the broader cultural context, as well as strong individual (e.g., parents' physical and mental health; children's biological features and temperament), family and intergenerational (e.g., own childhood experience, couple relationship, family functioning, support of broader family) and generational effects (e.g., information and support from others). These factors influence the development and psychological well-being of children indirectly through the direct impact on parenting and parent-child interactions (CUMMINGS & VALENTINO 2015; HINSHAW 2008). *Figure 1* summarizes the theoretical model of direct and indirect transactional effects.

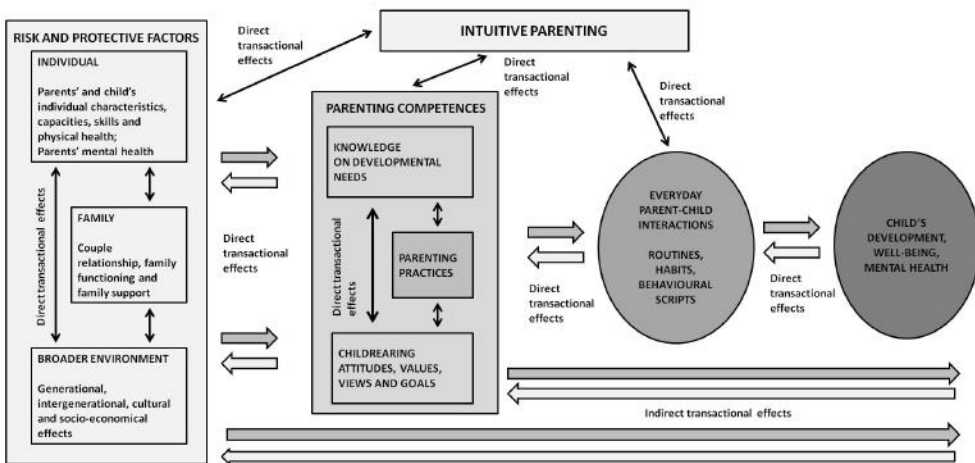


Figure 1

The theoretical model of direct and indirect transactional effects between individual, family and environmental risk and protective factors, parenting, parent-child interactions, and child development and mental health

According to international research, different mental health difficulties in infancy and early childhood are frequent, showing the incidence of symptoms approx. 5-20% in normal populations (ZEANAH 2018). In the aetiology of IECMH difficulties, problems or disorders (ZERO TO THREE 2016a; WOLRAICH et al. 1996), the most common process is when child, parental and environmental risk factors are simultaneously present. These risks can adversely affect parent-child communication and interactions and the emotional and behaviour co-regulation, which are the basic condition for mental health well-being in early childhood. In most cases, the cumulative combination⁶ of somatic, interactional and psychosocial factors leads to problematic behaviours (PAPOUSEK et al. 2008).

1.2.2. Measurements in international research

The diagnostic definition of infant and early childhood mental health disorders is not a simple issue, since the diagnostic systems used (also in Hungary), the ICD-10 (WHO 2010) and DSM-5 (American Psychiatric Association 2013), do not provide a proper guide for the psychological care in early years. Several supplemental systems already exist specifically targeting the early childhood period (see DC:0-5TM; ZERO TO THREE 2016a; DSM-PC; WOLRAICH 1996). Studies also vary in how the mental health difficulties, problems or disorders are defined, what clinical or scientific criteria and methods are used to highlight the risk groups. That is why interpreting and comparing the results is often a challenge. Many questionnaires in international research explore early childhood development or mental health (for summaries e.g. GODOY et al. 2018; SZANIECKI & BARNES 2016; DELCARMEN-WIGGINS & CARTER 2004), but there is no clear consensus on which ones should be generally used. It is also indicated in publications that instruments in use often do not have standards or appropriate psychometric indicators. A huge variety of national and international measurements on child characteristics, caregiving behaviour, the parent-child relationship and different family and environmental factors are already available (for summaries e.g. RAVITZ et al. 2010; VAN DEN BERGH & SIMONS 2009; ALDERFER et al. 2008; HOLMBECK et al. 2008; ZENTNER & BATES 2008; MORSBACH & PRINZ 2006). There are fewer questionnaires adapted in representative samples, in which cut-off points are also determined to signal dysfunctional processes.

⁶ Research generally examine somatic and psychosocial factors in the prenatal (maternal age, prenatal stress, psychological problems in pregnancy, anxiety, depression, substance abuse, partner relationship problems, social isolation, unexpected pregnancy etc.), in the perinatal (birth complications, gestational age, birth weight, early separation etc.) and in the postnatal period (health status, neuromotor and developmental problems, partner relationship problems, maternal physical and mental health, family conflicts, difficult early childhood experiences, social isolation, unresolved trauma, loss or grief, socioeconomic pressures, maternal role conflicts, child temperament etc.). The prevalence of these factors are generally significantly higher in clinical samples than in control groups or in representative samples (PAPOUSEK et al. 2008).

1.3. Justification of the research and objectives

As training, service practices and policies in IECMH need to be evidence-based, representative national research can provide significant input for professional education and building future strategies of planning health, social and educational interventions.

As we mentioned above, representative research at a national level, specifically researching parenting practices and parental and early childhood mental health, has not been carried out before in Hungary. Little is known about the national prevalence and background of IECMH difficulties. There is no empirical knowledge about everyday life, parenting attitudes and practices in Hungarian families living with babies and young children today, their emerging problems and the multi-directional relationships between the underlying biological, psychological and social factors.

The social impact of the research and its support for clinical work is non-negligible. Having an accurate picture of the basic phenomena and the context of possible background factors is necessary for planning evidence-based family policy, health, social and educational interventions. By understanding factors causing difficulties for parents nowadays, we can also encourage giving birth more effectively. This is important given that the childbirth rate is showing a decreasing tendency in Hungary (KAPITÁNY & SPÉDER 2018).

The psychological well-being of a young child is primarily dependent on the quality of regular, proximal everyday parent-child interactions (BRONFENBRENNER & CECI 1994). Therefore, early childhood resources should be provided primarily for supporting parenting. To plan appropriate interventions, child, parental, family and broader environmental risk and protective factors should be identified (SHONKOFF & PHILLIPS 2000). These environmental factors can threaten or protect the mental health and competence of the parents, the quality of interactions between parents and their children and the mental health of infants and young children (see *Figure 1*). Since untreated behavioural and emotional regulation difficulties and mental health problems in infancy and early childhood can lead to clinical disorders later (PAPOUSEK 2008), there is a need for standardization of new measurements for early detection and follow-ups.

It is important to compare Hungarian results to international ones to assess potential cultural similarities and differences. Cross-cultural comparisons can broaden our perspectives in understanding how culture can affect parenting and IECMH well-being and problems⁷.

1.4. General hypotheses

Based on the extensive scientific literature on developmental psychopathology (CICCHETTI 2016; LEWIS & RUDOLPH 2014), (1) we assume some risk and protective

⁷ In the case of interest to adapt the complex questionnaire package (with several measurements from the international literature) and planning joint projects for examining cross-cultural issues, please contact the first and correspondent author.

factors in the child and the parent as individuals, and in the family and the broader environment as systems, which can affect directly or indirectly everyday parenting practices, parent-child interactions, routines and habits. (2) It is also assumed that the variability of the children's usual daily routines and habits and the prevalence of emotional and behavioural regulation difficulties around the cut-off values of the clinical spectrum can also be associated with the variability of these individual and environmental background factors. (See also *Figure 1* and *2*).

2. Methods

2.1. Research design

In our research, we planned to conduct a large-sample questionnaire survey with mothers raising children under 3 years of age accompanied by a smaller subsample of fathers. It is a children-focused national sample representative for the children's age and sex, and the settlement types (see sampling methods and the characteristics of the final sample below). Although we had to omit direct observational and experimental methods, our large-sample questionnaire survey provides opportunities to study further specific questions and assumptions. Our cross-sectional design can only provide information about the interconnections between factors and variables. We cannot determine causal relationships; we can only formulate hypotheses about them. A longitudinal follow-up study may provide an opportunity for future mapping of causal relationships.

Our research questionnaire had two parts: a computer-assisted personal interview (CAPI) and a self-administered questionnaire (SAQ). We collected information on children's behaviour, habits, their parents' caregiving practices, and many individual and environmental factors likely influencing children's development and well-being. All constructs were examined through the parents' perception. Although this source of information is subjective in an applied developmental approach, it is significant, since most of the practitioners obtain information from parents first-hand. Recognition of problems is generally based on information received from parents, as longer and deeper observation is rarely possible during the screening phase. We aimed to edit and develop significant measurement tools to achieve useful empirical results, which could inspire both further research and practical work. In the future, we plan to complete the questionnaire methods with observations of the parent-child interactions and other in-depth investigations.

The research model (*Figure 1*) and the system of constructs (*Figure 2*) to be measured were planned, and the measurements to be used (*Table 1*) were chosen by the members of the research network. In the developmental phase of the research, we reviewed relevant international publications on early childhood development and mental health research, and large-sample birth cohort studies (for summary e.g. BLASKÓ 2009) to use these experiences in our design. Although similar large-sample early childhood mental health research has never been conducted in Hungary, we reviewed

the instruments and conclusions of the most important previous or ongoing large-sample child research and small-sample family studies conducted in our country.

The frame of the research model, the list of modules and constructs measured are shown in the following *Figure 1* and *2* and *Table 1*.

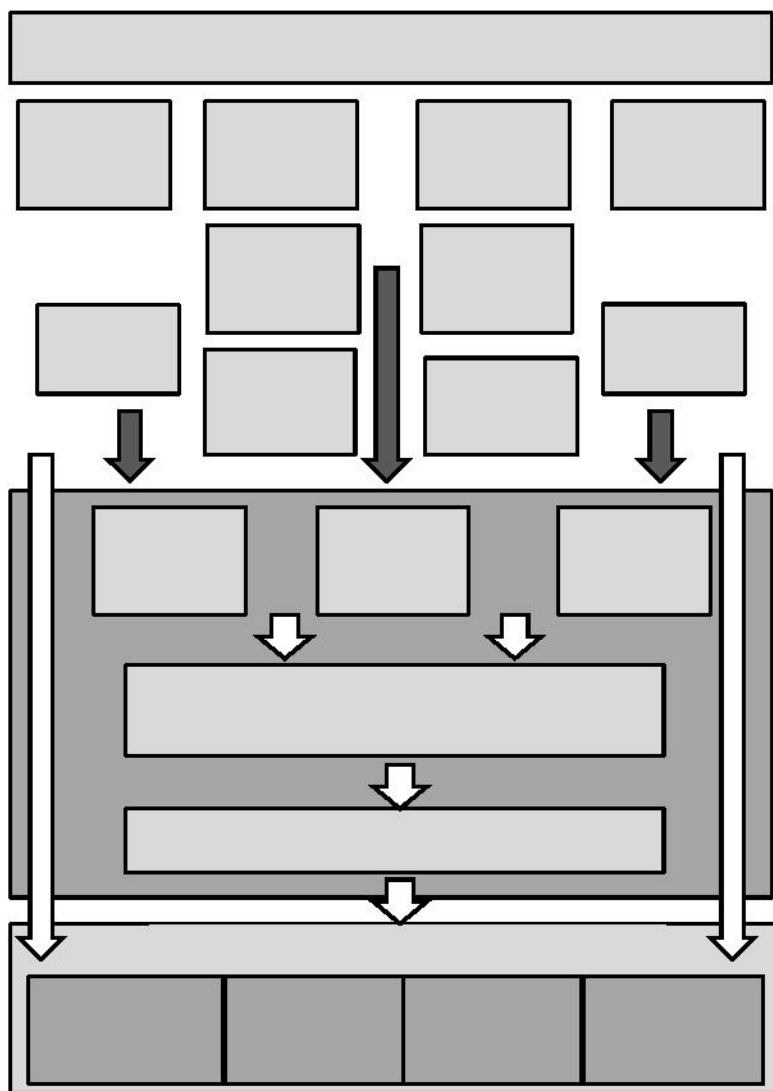


Figure 2

Individual, family and environmental factors in the background of infant and early childhood mental health - an outline of the examined topics in the survey

Table 1
Topics and constructs measured and used measurements in the survey

<i>Modules</i>	<i>Topics</i>	<i>Measurements</i>	<i>Type of data collection</i>
<i>Socio-demographical situation</i>	Demographic and socio-economic background of the parents: age, education, marital status, settlement type, mobility, employment status, housing situation, financial situation, children in the family, ethnicity, religion	Questions already used in previous Hungarian research (GERVAI et al. 1996; SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
<i>Parent's childhood history</i>	Childhood experiences in family or institution, divorce or death of parents, siblings, perceived quality of relationships in childhood	Original questions formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
	Painful life events and traumas in the past	Original questions formulated by the research network	Self-administered questionnaire (SAQ)
<i>Parents' health</i>	Parents' perceived general health, chronic illnesses, medications, health behaviour during pregnancy and present (smoking, alcohol, drug use)	Questions already used in previous Hungarian research (SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
	Vital exhaustion	<i>5-item short version of the Maastricht Questionnaire Vital Exhaustion Scale (MQVE)</i> ; APPELS et al. 1988; Hungarian version: KOPP et al. 1998; KOPP 2008; in Hungarostudy ⁸ 2002)	
<i>Support in child care</i>	Formal and informal support in child care: forms of daily care, support from family and others, support in domestic work	Questions already used in previous Hungarian research (GERVAI et al. 1996; SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
<i>Social support and stress</i>	Family relationships and emotional support, community relationships and support, stressful life events, perceived coping	Questions already used in previous Hungarian research (GERVAI et al. 1996; TÖTH & DANIS 2008; SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
	Perceived stress	<i>4-item short version of the Perceived Stress Scale (PSS)</i> ; COHEN et al. 1983; COHEN & WILLIAMSON 1988; Hungarian version: STAUDER & KONKOLY THEGE 2006)	Self-administered questionnaire (SAQ)
	Painful life events and traumas in the present	Original questions formulated by the research network	Self-administered questionnaire (SAQ)

⁸ <https://semmelweis.hu/magtud/kutatas/kutatasi-teruletek/hungarostudy-kutatocsoport/>.

<i>Modules</i>	<i>Topics</i>	<i>Measurements</i>	<i>Type of data collection</i>
<i>Parents' well-being and mood</i>	Inner control, happiness, leisure time individually and with the spouse, sense of safety in different life areas	Questions already used in previous Hungarian research (EVS 2008 ⁹ ; DÁVID et al. 2016) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
	Depressed mood	<i>Depression Scale (DS1K)</i> ; HALMAI et al. 2008)	Self-administered questionnaire (SAQ)
<i>Internet and media use</i>	Internet and media use by the parents and the children, reading books together	Original questions formulated by the research network; adapted some from Common Sense 2017	Computer-Assisted Personal Interviewing (CAPI)
<i>Fertility and conception</i>	First menstruation, first sexual intercourse, pregnancies, miscarriages, stillbirths, contraception, fertility problems and diseases	Original questions formulated by the research network	Self-administered questionnaire (SAQ)
<i>Pregnancy</i>	Family planning, medical issues during pregnancy, information sources during pregnancy, perceived mood during pregnancy	Questions already used in previous Hungarian research (GERVAI et al. 1996; SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
<i>Childbirth</i>	Circumstances of childbearing, complications/medical issues during the childbearing, personal experience of childbearing	Questions already used in previous Hungarian research (GERVAI et al. 1996; SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
<i>Early postnatal period</i>	Weight and length of the child at birth, complications or medical issues with the child or the mother after birth, perceived mood in the first 6 weeks after birth	Questions already used in previous Hungarian research (SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
<i>Breast-feeding</i>	Decisions about breastfeeding, exclusive breastfeeding, supplementary feeding, weaning, difficulties during breastfeeding, pacifier use	Questions already used in previous Hungarian research (SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
	Attitude towards breastfeeding	<i>8-item short version of the Iowa Infant Feeding Attitude Scale (IIFAS)</i> ; DE LA MORA et al. 1999; Hungarian translation: W. UNGVARY et al. 2019)	Self-administered questionnaire (SAQ)
<i>Child's health</i>	Chronic illnesses or developmental disorders of the child, formal support from helping professionals, hospitalization, other separations	Questions already used in previous Hungarian research (SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)
<i>Development of the child</i>	Present physical parameters of the child, care activities and playing, toilet training, autonomy, relationships with family members and others	Questions already used in previous Hungarian research (SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Personal Interviewing (CAPI)

⁹ European Values Study: <https://europeanvaluesstudy.eu/>

Modules	Topics	Measurements	Type of data collection
	Developmental milestones	<i>Short versions of parental scales on child developmental milestones</i> adapted questionnaire (SAQ) from the Hungarian national guideline for developmental screening in primary health care (ALTORJAI et al. 2014)	Self-administered (SAQ)
<i>Crying behaviour</i>	Crying in the first 3 months and present, excessive crying, the success of calming strategies	Questions already used in previous Hungarian research (SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Interviewing (CAPI)
	Attitude towards infant/toddler crying	<i>6-item short version of the Infant Crying Questionnaire (ICQ)</i> ; HALTIGAN et al. 2012; Hungarian translation: DANIS et al. 2019a)	Self-administered questionnaire (SAQ)
<i>Sleep behaviour</i>	Places of sleeping, sleep-wake rhythm, evening routines, sleep onset problems, night wakings, calming and self-calming strategies	Questions already used in previous Hungarian research (SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Interviewing (CAPI)
		<i>A shortened version of the Infant Sleep Questionnaire (ISQ)</i> ; MORRELL 1999) and the <i>Brief Infant Sleep Questionnaire (BISQ)</i> ; SADEH 2004); Hungarian adaptation: TÓTH & GERVAI 2010; TÓTH et al. 2019)	Computer-Assisted Interviewing (CAPI)
	The sleep of the parents (chronotype)	<i>Athens Insomnia Scale (AIS)</i> ; SOLDATOS et al. 2000; Hungarian translation: questionnaire (SAQ) NOVÁK et al. 2004)	Self-administered questionnaire (SAQ)
	The sleep of the child (chronotype)	<i>5-item short version of the Children's Chronotype Questionnaire (CCTQ)</i> ; WERNER et al. 2009; Hungarian adaptation: RIGÓ 2019)	Self-administered questionnaire (SAQ)
<i>Feeding and eating behaviour</i>	Ways of feeding and eating, types of food and drink intake, eating together, autonomous eating, food refusal	Questions already used in previous Hungarian research (SCHEURING et al. 2012; KURIMAY et al. 2017) and original ones formulated by the research network	Computer-Assisted Interviewing (CAPI)
	Feeding problems	<i>The Montreal Children's Hospital Feeding Scale (MCH-FS)</i> ; RAMSAY et al. 2011; Hungarian translation: DANIS et al. 2019e)	Self-administered questionnaire (SAQ)
<i>Infant and early childhood mental health problems</i>		<i>Early Childhood Screening Assessment (ECSA)</i> ; GLEASON et al. 2010; Hungarian translation: DANIS et al. 2019c)	Self-administered questionnaire (SAQ)
<i>Joy and general goals in parenting</i>		Original questions formulated by the research network	Computer-Assisted Interviewing (CAPI)

Modules	Topics	Measurements	Type of data collection
<i>Perceived child temperament and caregiving</i>	Perceived child temperament and care-giver confidence	<i>A 7-item shortened version of the global scale in Mother and Baby Scales (MABS); WOLKE & ST. JAMES-ROBERTS 1987; Hungarian translation: LAKATOS et al. 1996; 2019)</i>	Self-administered questionnaire (SAQ)
	Perceived warmth and invasion of the child	<i>The Hungarian version of the Mother Objects Relation Scale - Short Form (MORS-SF); OATES & GERVAI 2003; 2019)</i>	Self-administered questionnaire (SAQ)
<i>Partner relationship</i>	Attachment style in partner relationships	<i>12-item short version of the Experiences in Close Relationships - Revised version (ECR-R; FRALEY et al. 2000; Hungarian translation: GERVAI et al. 2018)</i>	Self-administered questionnaire (SAQ)
	Satisfaction with partner relationship and division of labour	Questions already used in previous Hungarian research (GÖDRI 2001; PONGRÁCZ & MURINKÓ 2009; PILINSZKI 2014) and original ones formulated by the research network	Self-administered questionnaire (SAQ)
	Dyadic coping	<i>6-item adapted version of Dyadisches Coping Inventar (Dyadic Coping Inventory; DCI; BODENMANN 2008; Hungarian adaptation: MARTOS et al. 2012, MARTOS & SALLAY 2019)</i>	Self-administered questionnaire (SAQ)
	Conflicts and disagreements, intention to divorce	Questions already used in previous Hungarian research (SPÉDER 2001; ANTAL & SZIGETI 2008; PILINSZKI 2013) and original ones formulated by the research network	Self-administered questionnaire (SAQ)
	<i>Parenting</i>	Parental resilience	<i>Parental resilience scale of Parents' Assessment of Protective Factors (PAPF; KIPLINGER & BROWNE 2014; Hungarian translation: CSAPÓNÉ FERENCZI et al. 2015)</i>
Co-parenting		<i>Daily Coparenting Scale (D-Cop; McDANIEL et al. 2017; Hungarian translation: DANIS et al. 2019d)</i>	Self-administered questionnaire (SAQ)
Childrearing attitudes sensitivity, discipline, daily activities		<i>Comprehensive Early Childhood Parenting Questionnaire (CECPAQ; HOEVEN et al. 2017; Hungarian translation: DANIS et al. 2019b)</i>	Self-administered questionnaire (SAQ)

2.2 Measurements

Commonly used instruments measuring emotional and behavioural regulation and mental health problems in early childhood and other background factors were selected. Permissions were asked for the adaptation of all the questionnaires not previously

used in our country. The instruments are not diagnostic measurements but appropriate for screening and identifying problematic constellations. For examining some specific topics, new, original questions were developed by the research network. Four types of devices were used in the package (*Table 1*):

- *Questions and scales without any changes*: questions and psychometrically appropriate scales that have already been used successfully in other Hungarian research. These questions or instruments were developed or translated and adapted by Hungarian researchers previously. Based on the representative results, these scales can be used with tested standards in the future.
- *Shortened scales* that were developed with the help of principal component analyses run on data of efficient but long scales previously used in Hungarian research. During data reduction, the strongest items explaining the original constructs well were selected. Then the internal consistency of the shortened scales was tested. Shortened scales only with good and coherent structure and adequate internal consistency were used in the representative research.
- *New adaptations of international scales*. After permissions for Hungarian adaptation, instruments in English effectively used in international research were translated into Hungarian and back. In the summer of 2019, online pilot studies were conducted to test the newly adapted instruments' validity and reliability. For the representative research, we only selected scales with appropriate psychometric parameters.
- *Original questions formulated by the research network*. We formulated some specific questions if some theoretical constructs lack adequate tools.

In the planning phase, a face-to-face pilot testing and discussion with parents ($n = 10$) took place to examine the data collecting situation and the time needed to complete the questionnaire (CAPI & SAQ) package. Parents were also interviewed on the topics questioned and the wording. Parents' opinions and suggestions were used for finalizing the package, so the research material was developed in a participatory way with the target group. Our final goal was to develop a maximum 90-minute-long questionnaire package. It had the above mentioned two parts: (1) a computer-assisted personal interview (CAPI), and (2) a self-administered questionnaire (SAQ) containing the sensitive questions and psychological scales. After finalizing the questionnaire package and the protocol of the data collection, a detailed manual was prepared for the interviewers.

2.3. Data collection

2.3.1 Pretests

The TÁRKI Research Institute (2020) performed the sampling and representative data collection. At first, the finalized questionnaire package was uploaded to an online interface (CAPI).

In 'Pretest 1' fieldwork, pilot interviews were conducted with women and men (20 people) with different demographic characteristics (urban/rural, low- and high-educated). During the pilot survey conducted in the fall of 2019, the structure of the questionnaire (wording, logical coherence), the survey time frame (length of data collection) and the functioning of the CAPI program were tested.

The length of the questionnaire greatly exceeded the upper time limit of a methodologically efficient questionnaire, so we had to shorten the questionnaire by about 30% by extracting or merging questions. Also, other minor changes to the questionnaire were required: several problems of interpretation and wording surfaced from the respondents' and the interviewers' feedback. Colleagues also suggested some rewording to help interpret and clarify the questionnaires. Additional interviewer instructions were included in the CAPI questionnaire, and a detailed interviewer manual was compiled on content and technical issues. Some CAPI programming changes were also made.

'Pretest 2', during which interviewers tested the improved questionnaire and CAPI program with 5 mothers, ended with satisfactory results.

2.3.2. Sampling

For sampling, TÁRKI (2020) used a multi-stage, stratified probabilistic sampling procedure. The latest available tables of the Hungarian Central Statistical Office containing live births by county and settlement type were used for this. The general requirement for the sample was to accurately represent the population of children aged 3-36 months and to reflect its social and territorial differentiation. Thus, the results and conclusions drawn from the data can be generalized to the total population within the statistical sample error rate.

When determining the number of addresses for the initial list, researchers took into account that the rate of non-response is higher in larger settlements. Therefore, the initial sample automatically contained addresses from the capital and all the county seats. As a general rule, at least one additional town and one village from each county were included. Overall the addresses covered 89 settlements and all the districts (23) in Budapest.

Addresses were requested from the Ministry of Interior in two waves (3022 then 3021 addresses; since at the beginning of the data collection, the non-response rate was too high in some Central Transdanubian counties). The entire sample list eventually consisted of 6043 addresses.

The research also included interviews with 122 fathers. To ensure the representativeness of the father's subsample, we used similar methods as for the mothers. In all settlement types of each county, fathers were included in the sample in the same proportion compared to the proportion of the children population at the target age. One to four father interviews from each settlement type from each county were taken.

2.3.3. Final data collection

Before the data collection process, the regional instructors received training on the purpose of the research and the structure of the questionnaire package, and the operation of the CAPI program. Then they received specific instructions regarding the fieldwork.

During the fieldwork, the interviewers visited pre-defined households according to the sampling process (see above), where they conducted the two-part data collection (CAPI and SAQ; see above) with the mothers of the selected children (and, if possible, those fathers who met the conditions of the quota for fathers). Due to the sensitivity of the topics, especially the mothers' life (pregnancy, childbirth, breastfeeding etc.) and childrearing, only female interviewers participated in the data collection.

In summary, the data collection was conducted between 2019 November and 2020 January. In the final sample, we collected data from 980 mothers (see data collection history below; *Table 2*) of infants and toddlers in a nationally representative sample. Also, dyadic data were collected for 122 families, where fathers were also interviewed. During the fieldwork, the selection of fathers took place in such a way that where it was possible to interview the father (he was at home and willing to answer), the interview took place. In the majority of cases (88.5%), interviews were conducted in one meeting, one after the other, and the remainder were queried on two separate occasions.

2.3.4. Ethical considerations and data protection

The research was approved by the Research Ethics Committee of Semmelweis University Budapest Hungary (Regionális, Intézményi Tudományos és Kutatásetikai Bizottság, Semmelweis Egyetem). The license number of the online pilot study is RKEB 143/219. The license number of the national survey is RKEB 240/219.

During the data collection, TÁRKI worked according to their general procedure. Respondents were informed of the following before starting the questionnaire: (1) responses are voluntary and information is kept confidential, (2) during the interview, the answers are recorded anonymously on the computer (CAPI), and the self-administered questionnaire (SAQ) is sent to the data entry staff in a sealed envelope, (3) the respondent's address and name are stored strictly separate from the information provided during the interview, (4) data are analyzed without any identifying information for research purposes, without each researcher knowing the identity of the respondents. The results of the research are presented in an anonymous form only, (5) if the respondent does not want to answer any of the questions, he/she can indicate this at any time and can withdraw his/her consent at any time in the future.

Only those parents participated in the research who gave their active written consent to the data collection. In the consent statement, we also asked for consent on two other topics: whether they would like to know about the results or related events, and whether we could visit the family (without any prior commitments) in a subsequent wave of data collection (after 3 years).

All documents (consent statement, address card) in which the name and contact details of the child/parent can be identified together with the serial number of the questionnaire are kept by TÁRKI, and data from them (e.g. concerning the willingness of participating in the subsequent wave of the research) are provided to the research leader upon request.

The members of the research network received only an anonymous, coded database for analysis.

2.4. Database

2.4.1. Checking process

TÁRKI (2020) monitored the work of interviewers in several ways. At least 15% of the respondents were called back by phone to check that they were actually interviewed and that the questioning was conducted properly (personal questioning, self-completion questionnaire, topics covered, etc.). As a result, 25 interviews proved to be questionable and were discarded.

The research institute implemented administrative controls to ensure data quality. The inconsistencies found during the data cleaning and the administrative systemization of the documents were clarified, mainly through telephone inspections and consultations with the instructors. They excluded cases, where there was a lack of consent (15 cases) or the questionnaires were largely incomplete or resulted in inadequate data quality (8 cases).

24 interviews were conducted with parents of children aged 37-39 months, so the research team decided to exclude these cases as well.

After the checking process, our final sample size is $N = 980$ for mothers and $N = 122$ for fathers. *Table 2* shows the total number of interview trials, the discarded interviews and the final sample size.

Table 2
From the total number of interview trials to the final sample size of the study

<i>Interviews and final sample</i>	<i>N</i>
<i>Final sample size (mothers)</i>	980
<i>Excluded interviews due to age group difference</i>	24
<i>Discarded after checking questionable interviews</i>	48
<i>Successful interview</i>	1052
<i>Got in touch but no interview was conducted</i>	44
<i>The respondent refused to answer</i>	489
<i>Couldn't contact anyone</i>	177
<i>Wrong address (uninhabited, demolished or public building)</i>	72
<i>Wrong address (no child of the given name or age lives there)</i>	1847
<hr/>	
<i>The total number of interview trials</i>	

2.4.2. Weighting

Representative distributions of given age groups were particularly important for the research and data analyses. Distortions due to refusals to respond and other reasons were corrected by weighting. Weights were based on actual Hungarian demographics (*Table A.1.* in the Appendix) of children aged 3-36 months (sex, age, type of settlement). *Table A.2.* (in the Appendix) shows the weights used in the final database. Among the youngest age group (3-6 months) both boys and girls in Budapest and the villages are underrepresented. These infants' families were the most difficult to reach.

2.5. Sample

Table 3 shows the socio-demographic characteristics of the 980 children whose mothers and, in certain cases, fathers were questioned. In *Table 3* we included both the weighted and unweighted values. As expected from the weighting, the biggest difference concerns the distribution of the youngest age group: in the weighted sample it is almost twice as much as in the unweighted one. In the weighted sample, children's age groups are equally distributed; the average age of the children is 19.6 (SD = 9.6) months. The rate of boys is a bit higher than that of the girls (51.5 versus 48.5 %). One-third of the families live in Central Hungary, of which about half (15.4 % in total) live in the capital, Budapest. Out of the 980 children, only 5 are non-blood children of the families in the sample.

Table 3
Descriptive background characteristics of the children - both weighted and unweighted values
(N = 980)

		<i>Weighted</i>		<i>Unweighted</i>	
		<i>N</i>	<i>valid %</i>	<i>N</i>	<i>valid %</i>
<i>Age</i>	3-6 months	120	12.2	68	6.9
	7-12 months	160	16.4	154	15.7
	13-18 months	179	18.3	187	19.1
	19-24 months	166	17.0	192	19.6
	25-30 months	183	18.7	200	20.4
	31-36 months	171	17.4	179	18.3
<i>Gender</i>	boy	504	51.5	524	53.5
	girl	476	48.5	456	46.5

		<i>Weighted</i>		<i>Unweighted</i>	
		<i>N</i>	<i>valid %</i>	<i>N</i>	<i>valid %</i>
Region	Central Hungary	302	30.8	314	32.0
	Central Transdanubia	113	11.6	107	10.9
	Western Transdanubia	75	7.7	74	7.6
	Southern Transdanubia	85	8.7	84	8.6
	Northern Hungary	132	13.5	131	13.4
	Northern Great Plain	152	15.5	153	15.6
	Southern Great Plain	120	12.3	117	11.9
Settlement type	Capital (Budapest)	151	15.4	171	17.4
	County seats	205	20.9	202	20.6
	Other towns	298	30.4	290	29.6
	Villages	326	33.3	317	32.3
The legal status of the child	Child by blood	975	99.5	975	99.5
	Adopted child	2	0.2	2	0.2
	Fostered child	2	0.2	2	0.2
	Other	1	0.1	1	0.1

Table 4 shows the socio-demographical indices of the parents. In the case of the mothers, we included both the weighted and unweighted values. Unlike in the children's sample, there is no meaningful difference in the case of the mothers. Every second mother is 30 years old or younger, the average age is 30.3 (SD = 5.3) years. 72% are married, and another 22 % has a live-in partner. The rate of single mothers is 3.6 %. The majority of the mothers with children under 3 years have secondary education, one-tenth has a very low level of education (elementary) and on the other hand, almost one fifth has a university degree.

Table 4
Descriptive background characteristics of the parents
- for mothers both weighted and unweighted values

		<i>Mothers (N=980)</i>				<i>Fathers (N=122)</i>	
		<i>weighted</i>		<i>unweighted</i>		<i>unweighted</i>	
		<i>N</i>	<i>valid %</i>	<i>N</i>	<i>valid %</i>	<i>N</i>	<i>valid %</i>
<i>Age</i>	18-30 years	530	54.1	533	54.4	52	42.6
	31-40 years	420	42.8	416	42.4	57	46.7
	41-52 years	30	3.1	31	3.2	13	10.7
<i>Marital status*</i>	Married	701	71.8	706	72.2	80	65.6
	Cohabited	216	22.1	212	21.7	41	33.6
	Single	36	3.7	35	3.6		
	Divorced	25	2.5	25	2.5	1	0.8
<i>Education*</i>	Elementary or less	113	17.8	111	11.3	10	8.2
	Vocational	220	22.5	224	22.9	45	37.2
	Secondary	469	47.9	464	47.4	51	42.1
	Degree	176	18.0	179	18.3	15	12.4
<i>Employment status *</i>	Inactive	862	88.0	850	86.8	1	0.8
	Employed (36 hours/ week)	74	7.6	82	8.4	117	95.9
	Employed (less than 36 hrs/week)	43	4.4	47	4.8	4	3.3
<i>Total number of children by blood</i>	None	4	0.4	4	0.4		
	1 child	617	62.9	622	63.5	81	66.4
	2 children	236	24.1	231	23.6	27	22.1
	3 children	86	8.7	84	8.6	8	6.6
	3+ children (4-10)	38	3.8	39	4.0	6	4.9
<i>Ethnicity *</i>	Hungarian	930	95.1	930	95.1	117	95.9
	Roma	44	4.5	45	4.6	5	4.1
	Other	4	0.4	3	0.3		
<i>Religion*</i>	No religion	577	60.3	571	59.8	70	58.3
	Catholic	295	27.6	282	29.5	39	32.5
	Other Christians	101	10.6	100	10.5	10	8.3
	Other	2	0.2	2	0.2	1	0.8

* In case of missing data, valid percents (i.e. frequency of respondents) is indicated

Almost 10 % of mothers are employed and work full time. The rate of large families is 12.5 %, the rate of those who identify themselves Roma is about 5 %, and almost two-thirds of the mothers are not religious.

The average age of the fathers is 32.7 ($SD = 6.0$), the vast majority of them (97.5%) work full time. The proportion of fathers with secondary education (mainly vocational school) is higher than that of women.

2.6. Objectives and expected outcomes

As a comprehensive hypothesis of the research, we suggest that parent-infant/toddler interactions during everyday care are primarily affected by the parents' capacity to be intuitively and/or consciously sensitive and their ability to recognize and meet the needs of the child, especially at different expected developmental milestones. Parents having additional challenges (see socioeconomic, individual, relational, familial or children's biological features, difficult temperament, etc.), can negatively affect the caregiving behaviour and parent-child interactions, such as the evolving parent-child relationship and mental health of young children (see also *Figure 1*).

Quantitative statistical analyses and publications on the following topics are planned:

- We can do detailed psychometric work on the validation and standardization of several measurements in our representative database. The new standardized measurements will become available for further research and clinical work supporting screening, early detection and diagnostics.
- The descriptive statistics of different constructs can help us examine the natural variability, diversity in specific issues of parenting, early childhood development and mental health in Hungary.
- We will also be able to define the representative cut-off values of the used instruments so that we can separate the groups of children in clinical ranges from the natural variance. Thus we obtain data on the incidence of significant infant and early childhood mental health difficulties and other problems according to the background factors.
- We will have the opportunity to draw a picture of the relationships between complex environmental effects in the background of early childhood mental health problems. Given the cross-sectional nature of the research, we will have the possibility of exploring correlations and some (assumed causal) relationships over time using retrospective questions. Our goals are finding direct and indirect, mediator and moderator explanatory effects based on correlations and the analysis of hypothetical longitudinal reasoning based on retrospective interviews. Assumptions of causal relationships can be tested later in a longitudinal follow-up design.

The database will be inspiring not only for researchers interested in the main focus (IECMH) but for those who examine many other interdisciplinary (health, sociology, psychology, education, special education, etc.) questions in child and family

issues. Our data can be compared to international results, so Hungarian researchers will be able to join the international discourse of early childhood mental health disciplines.

3. Future plans

3.1. Examining special groups

We intend to visit and collect data from other samples, from parents of more specific groups of children, as early childhood mental health problems can be secondary symptoms if the parent-child relationship is difficult because of different (biological or social) reasons. As the proportion of specific groups (excluding social disadvantage) is expected to be very low in our representative community sample, it is necessary to collect data from extra samples. Thus we are planning to identify new samples from the following target groups:

- Socio-economically disadvantaged parents (e.g., low level of education, poverty, ethnicity)
- Psychologically disadvantaged parents (e.g., anxiety, depression, alcohol, drugs)
- Parents of biologically disadvantaged children (e.g., premature children, chronically ill children, sensory impaired children, and children with the injured central nervous system or showing atypical development)
- Adolescent parents, adoptive and foster parents

In these special groups' daily interactions, child-rearing practices and family functioning can be different from the general patterns, but the representative sample would be insufficient for the detection of these processes since most of the special groups will have a small sub-sample size in the representative sample.

3.2. Cross-cultural comparisons

Our empirical results can be compared with international ones already published. We also seek interested researchers from other countries who would like to include our questionnaire package or a part of it in a study examining a representative sample of young children and their parents in their own country. We have adapted many measurements from English without any changes, while some instruments have been shortened according to psychometric analyses. In a possible collaboration, these aspects should be kept in mind, however, we still consider the data obtained in our sample to be worth comparing. Joint analyses of related national representative data can map the cultural characteristics of the frequency and background mechanisms of early childhood mental health problems.

3.3. Longitudinal research

We plan to continue our research longitudinally in 2022-2023 with parents of children aged 3-6 years (preschoolers) including families who agreed to be approached in a later wave of the research. A longitudinal sample would be able to map real causal relationships and explanatory mechanisms behind the development of early childhood mental health problems.

4. Strengths and limitations

The main strength of the research is that it is the first representative national parent survey to examine the mental health of children under 3 years of age in Hungary. Besides a large sample of mothers ($n = 980$), we have also a dyadic subsample ($n = 122$). The questionnaire package was developed by an interdisciplinary team, which included 31 researchers and practitioners representing several disciplines and clinical fields. Thus, our research is not only suitable for mapping basic issues, but it is also translational research, which creates a bridge between theory and practice. When developing the questionnaires, we asked the target group (i.e., parents) about their opinions, so the development of the package was partly a participatory process.

There are some limitations to the research. One of them is possible fatigue and refusal to answer due to the long questionnaire. Additionally, we asked several retrospective questions and thus memory biases may play a role. Due to financial constraints, the number of fathers is only approx. 12% of mothers. Furthermore, there is some selection bias in the way fathers were selected. These fathers are all present in the child's life - that is, divorced couples were not included in the sample. Mostly those fathers were interviewed who were at home when the maternal interview was taken. Thus, the sampling of fathers, although stratified, is less random.

Due to the Hungarian data protection regulations, which prohibits the release of data for infants younger than 3 months, the first few months of the children's lives were not included in the study.¹⁰

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APPENDIX

Table A.1

Distribution of the population aged 3-36 months in January 2020, based on data from the Ministry of the Interior (TÁRKI 2020)

	Male			Female		Total	
	Budapest	Town	Village	Town	Budapest		Village
3-6 months	2623	8514	5590	2431	8045	5306	32509
7-12 months	3575	11446	7346	3314	10815	6973	43469
13-18 months	3857	12770	8381	3575	12067	7957	48607
19-24 months	3649	11912	7641	3381	11257	7254	45094
25-30 months	3945	13053	8528	3657	12335	8096	49614
31-36 months	3610	12325	7835	3346	11646	7439	46201
Total	21260	70020	45321	19703	66165	43025	265494

Table A.2

Weights' value for each cell used for sample weighting based on the data provided by the Ministry of Interior

	Male			Female		
	Budapest	Town	Village	Budapest	Town	Village
3-6 months	2.42	1.16	2.29	2.24	1.86	2.45
7-12 months	0.82	0.94	0.80	0.87	1.25	1.98
13-18 months	0.62	0.94	0.86	0.94	1.44	0.89
19-24 months	0.96	0.85	1.04	0.78	0.85	0.79
25-30 months	0.91	0.79	0.93	0.71	1.11	1.03
31-36 months	1.03	1.20	1.16	0.69	0.86	0.78