

PEER REVIEW

From Prof. Dr. Emil Vlaykov Vodenicharov, MD, PhD

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Member of the Scientific Jury, according to Order with № P-109-193/28.04.2022 of

The Rector of Medical University "Prof. Dr Paraskev Stoyanov "- Varna,

considering the Protocol № 1/04.05.2022 and decision of the Faculty Council of the Faculty of Public Health under protocol № 184/20.04.2021.

Subject: Dissertation and abstract on the topic

"Early Childhood Development: Features and Prevention of Disorders"

Presented for public defence before a scientific jury for the award of scientific and educational degree "Ph Doctor" in the field of higher education "7. Healthcare and sports ", professional field" 7.1. Medicine", in the scientific speciality Hygiene (including occupational, communal, school, radiation, etc.).

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The documents and materials on electronic and paper media, attached by Assistant Professor Dr Ekaterina Ivanova Valtcheva, are in compliance with the requirements of the Law for the development of the academic staff in the Republic of Bulgaria, the Regulations for its application and the Regulations for the development of the academic staff in MU "Prof. Dr Paraskev Stoyanov "-Varna.

Biographical data and career development of author:

Dr Valtcheva graduated with a Gold Medal for excellent success and honoured her secondary education in V Language High School, Varna - advanced language training in English with a one-year pedagogical course for working with children. In 1990 she was accepted as a student of "Medicine" at the First Moscow Medical Institute "I. M. Sechenov", Moscow, Russia. She completed the first year of her education and continued and graduated from the Medical University - Varna in 1996. She worked as an intern at the Mother and Child Medical and Social Care Home, Varna, 1997-1998. In 2002, she completed her four-year specialization in the Department of Pediatrics at the University Hospital "St. Marina" in Varna and acquired a degree in Pediatrics. Works as a medical representative for the Eastern region of the Department of Child Nutrition - Nestle Bulgaria. During the period 2003-2011, she worked as a pediatrician in

the Neonatology Department and public relations of Specialized Hospital in Obstetrics and Gynecology for active treatment "Prof. Dr D. Stamatov" Varna and Clinic of Pediatric Oncohematology at University Hospital "St. Marina", Varna. From 2004 to 2006, she was a part-time doctoral student in health management Moscow, Russia, which was terminated after passing exams, enrollment and doctoral minimum. From 2011 to 2016, she was a part-time lecturer in the Department of Hygiene, Disaster Medicine and Epidemiology, and Department of Preclinical and Clinical Sciences - Medical University, Varna. She won a competition and started working as an assistant in 2017 at the Department of Hygiene and Epidemiology of the Medical University "Prof. Dr Paraskev Stoyanov" - Varna. In 2021 she acquired a specialist in "Hygiene of Children and Adolescents". Dr Valtcheva constantly improves her skills by annually attending conferences and training courses. She has participated in many national and international scientific forums and acquired additional qualifications in hygiene and paediatrics. Presents evidence to cover the required publications related to the dissertation. Her professional interests are in the field of Hygiene of children and adolescents.

Relevance and significance of the topic:

Medical prevention of adverse health effects in early school age is increasingly important in public health with the growing body of evidence for the interplay of biological, social and environmental factors. Among them is the ever-increasing number of scientific data on the need for a multidisciplinary approach to studying processes and their influence on early childhood development.

Providing a stimulating, secure, and adequate environment for early childhood development is a prospect for ensuring the nation's sustainable development. Prevention in connection with a holistic assessment of parents' needs for modern knowledge, practices, competencies, and opportunities for prevention of violations would provide an opportunity for informed choices. It would contribute to a better quality of life.

The simultaneous qualitative and quantitative study of the actual parental competencies for early childhood development and family relationships with specialists in the dissertation of Dr Ekaterina Valtcheva current, promising and practical, proves its scientific place in the Hygiene of children and adolescents in Bulgaria.

Statement on the structure and content of dissertations:

The scientific work presented for review is structured according to the modern standards adopted in our country and the requirements of the Medical University "Prof. Dr Paraskev Stoyanov" - Varna on a dissertation for the degree of "Doctor" in Medicine. The dissertation is written on 232 pages. It is well balanced and includes a literature review (38 pages), goals and objectives, material and methods, results (99 pages), discussion (15 pages), conclusions and contributions. The work is richly illustrated with six tables, 91 figures and 11 appendices. The bibliography includes 281 sources - 98 in Cyrillic and 183 in Latin.

The literature review (16.4% of the dissertation) is comprehensively and systematically interdisciplinary, including various scientific points of view - medical, psychological, sociological, philosophical, anthropological, and historical complexity of the child development process. The child is placed at the center of social science, social theory and practice, and the family-oriented approach to the family (nuclear and extended) are adopted. Systematic concepts for early childhood development are analyzed in a brief historical overview of cultural and historical data and archaeological artefacts from antiquity through the most important scientific works of international and leading Bulgarian university professors such as Gencho Piriyov and Manova-Tomova to global and national documents and government policies. The possibilities for creating a complex model of parental competence as a social phenomenon are systematized, determined by the set of integrative qualities of the parent's personality, aimed at their child and necessary for the quality realization of all environmental influences. Particular emphasis is placed on parental competence's cognitive, value-motivational, behavioural and emotional components. The author's style shows a good knowledge of the problem and emphasizes the possibilities for medical prevention through a five-component holistic framework of parental care for early childhood development. The PhD student knows the state of the problem thoroughly and whether he evaluates the literary material creatively.

The purpose of the dissertation is precisely and clearly stated. The dissertation sets itself six specific and practical tasks based on the hypothesis of underestimated opportunities for effective prevention of developmental disorders by increasing knowledge, practices, and competencies for early childhood development of the parent community in Bulgaria.

The qualitative survey "Participant Observation" and the quantitative sociological national online survey were conducted.

To establish the internal motivation of people through their activities, the researcher monitors the social group "from the inside" in the period 2020 - 2021 for 14 months, two days a week for 4 hours, in the community of "The Green Sea Yard of Varna" - space for early socialization and prevention of children from 0 to 3 years. The scientific thesis was achieved with the help of implemented and adapted tools (Empathy map; AEIOU framework) for hypothesis testing. The qualitative sociological research carried out this way becomes a reasonable basis for creating a toolkit (questionnaire) for quantitative analysis. Parental practice, knowledge and relationships with early childhood development specialists were analyzed for one month in early 2022 among 891 parents of children from 0 to 3 years and 11 months.

Opinion on the results and discussion:

As significant problems for the analysis of parental competencies for child development up to 3 years and 11 months, the qualitative research and the literary analysis of the dissertation form:

- Literacy for child development;
- Seeking help from a specialist - experience and attitudes;
- Quality of life of the child;

The PhD student finds that communication between parents and children develops parents' sensitivity to the needs of early childhood, learns how to accept and welcome their child, and creates and builds relationships between generations.

The described qualitative observations make it possible to differentiate in detail by age subgroups the five vital elements of the AEIOU framework - activities, environments, interactions, objects, users, and people.

Based on her own results, Dr Valtcheva establishes patterns that create an original Empathy Map with six adapted to the goal areas - to establish the importance of child development in the parental community. By placing the parent at the centre of the adapted instrument, the study is deepened on each individual arm with its own original branches.

As a result of the interpretive analysis, the following conclusions and summaries are reached, which are the basis for the preparation of a toolkit (questionnaire) for quantitative research:

- Parental awareness and competencies for child development directly determine parental behaviour and decisions for the child during this period.
- The parents' literacy is directly related to the decisions related to the child's physical, mental health, and social well-being and the measures they take to ensure them.
- For parents to know the peculiarities of child development, the source of information and its reliability is essential, as well as building criticism of false conceptions of information about children's health.
- Different cultural values and experiences imprint the child's adoption in the family, informing the parents and taking and distributing responsibilities for early child development in the family.

The results of Dr Valtcheva regarding the parents who filled in the survey, who have unspecified doubts about the normal development of their child, show that they are mainly mothers of 24 women (100%) with mostly higher education 21 (87.5%) and Bulgarian ethnicity 23 (95.8%), with the principal residence in a regional town - 17 (70.8%), with a high income over BGN 3001 - 15 children (65.2%). The children whose parents have suspected developmental disorders are from three-member households, 17 (70.8%) with only one child, 18 (75% $\chi^2 = 15,547$ $p < 0.05$) and raised by two parents, 23 (95.8%) without the participation of the extended family in child care 17 (70.8%).

Regarding prevalence, the most applied parental competence is stimulating care with a score of 4.55, followed by protection - 4.55, health care - 4.26, complete nutrition - 4.14. According to all responding Bulgarian parents, the least represented is early education - 4, 04.

The emphasis of the analysis of the level of parental literacy Dr Valtcheva puts on its positive correlations with each of the areas of parental competence in the child development as, although weak, the highest values are for health care (0.149 $p < 0.01$) and the most low for stimulating care (0.09 $p < 0.01$).

Suppose the father participates equally or more than the mother in the child's early education. In that case, this is associated with a threefold increase in the chances of exceeding the partner's expectations (OR 3,531 (95% CI 2,308-5,403)) of more than half of their partners - 214 (64.3%).

The leading specialist that most parents would seek as a source of help in case of an established problem falls on a paediatrician or general practitioner (probably 723 or 81.14% and an average score of 4.78 out of 5), followed by a specialist (speech therapist, psychologist, etc.) (686 or 76.99% and 4.72), after which the respondents put mother, mother-in-law or grandmother (231 or 25.93% with an average score of 3.49). Lastly, the religious community is indicated as entirely safe by 12 parents or 1.35% and an average score of 1.35. The statistics of those responsible for dealing without external assistance are similar - 12 parents or 1.35% and an average score of 1.29.

A higher level of education correlates with the probability of seeking help from friends (Spearman coefficient = 0.073 $p < 0.05$), Highly educated parents more often seek help from their circle of friends - 415 people or 53.8% compared to other people - 44 or 40.4%, ($\chi^2 = 7.312$ $p < 0.05$).

The dissertation proves that Bulgarian parents most often use a pediatrician as a source of information about ECD - 526 or 59.03 (score 3.41), followed by a general practitioner - 358 or 40.18% (score 2.88), a doctor with a narrow speciality - 299 or 33.56% (score 2.86) and friends - 136 or 15.26% (score 2.58). The rarest respondents are informed by unconventional (alternative specialists) - 691 or 77.55% (score 1.37), the media (television, radio, newspapers) - 549 or 61.62% with a score of 1.51 and websites/blogs of famous people - 567 (63.64% and a score of 1.56).

The level of literacy shows statistically significant positive correlations with respect to sources of information and, although weak in strength, their highest values are for general practitioners (Spearman's ratio = 0.118 $p < 0.001$), psychologist (Spearman's ratio = 0.117 $p < 0.001$), speech therapist (Spearman's ratio = 0.115 $p < 0.001$), narrow medical specialist (Spearman's ratio = 0.106 $p < 0.001$), homeopath (Spearman's ratio = 0.104 $p < 0.05$), but also for unconventional (alternative) practices (Spearman coefficient = 0.101 $p < 0.05$). Pediatricians as an information channel have the lowest correlation coefficient with literacy (Spearman's ratio =

0.076 $p < 0.05$), after pharmacists (Spearman's ratio = 0.082 $p < 0.05$) and popular science and popular science publications. (Spearman's ratio = 0.085 $p < 0.05$).

In Dr Valtcheva's study, the scores of the top three specialists used by Bulgarian parents are ranked first by pediatricians, followed by almost the same score by a narrow specialist and a general practitioner.

Based on the registered survey results, it is described that the specialist's attitude to the child and family has a substantial impact on the development of parental competence and literacy and timely action with both preventive and diagnostic and therapeutic goals regarding ECD.

A negative trend identified by Dr Valtcheva is that parents of children with unspecified suspicions of special needs show significantly lower scores on each aspect of expert health care compared to parents of children with and compared to parents of children without special needs. The lowest values of the parents of children with unspecified developmental status give the ability of experts to listen and empower the family. According to them, the most common characteristics of professional attitude are respecting the child and family and flexibility in providing care for the child.

As proof of the unconscious importance of the prevention of opportunities for more effective parent-specialist communication, Dr Valtcheva's study presents alarming results for the lowest trust score (4.21 ± 0.12) declared by parents of children with doubts about special needs compared to the parents of children with (4.33 ± 0.024) and children without health problems (4.53 ± 0.133).

In the dissertation presented for review, Dr Valtcheva found that the most important for Bulgarian parents to receive clear and objective information (average score of 8.62), the specialist to show respect for the child and family (score of 8.5) and to be flexible in the provision of childcare (8.4). Last, parents place the empowerment of the family (7.65).

According to the survey data, to gain the trust of the Bulgarian parent, the ECD specialist should show an individual approach (8.64) and have extensive practical experience (8.20). The importance of the child's trust in the child's sympathy for the specialist is high (7.87). Confidence and qualifications have the most negligible impact on the specialist's trust (7.23) and the application of the latest methods, tools and medicines (7.27).

In the analysis of the characteristics of the quality of life, the parents rate the panel "Emotional development of the child" with an average score of 4.48, followed by "Physical development" with a score of 4.01 and the lowest "Social development of children" with a score of 3.93 on the five-point scale.

The majority of the surveyed parents rate their child's overall health - 91.92%, and in 38.50% of all, it is rated the highest.

In the current study, the ultimate goal - the development of Bulgarian methodology (to identify, assess and prevent risk factors for ECD and well-being throughout life) and the development of a standardized tool is based on a response from highly educated respondents - 90.8% with higher and semi-higher education degree.

The results are under discussion which deserve high praise. The discussion explains the results and their coincidences and differences with the published literature. Dr Valtcheva discusses the established parental attitudes about the importance of the early child developmental period through the prism of information and competencies in the context of the specific cultural model.

The discussion focuses on negative trends. Of the five parenting competencies proposed in the questionnaire, in line with WHO, UNICEF and Harvard Child Development Center documents and recommendations, the most common among the Bulgarian community is stimulating care, and the weakest is early learning. In the nine-point scale for assessing the importance of care in the early child developmental stage, the respondent parents put the child's early learning last.

Anxiously interpreted against the background of international scientific evidence and the results that parents are better prepared for practices that have long been discussed in public as opposed to those for which there are well-established global recommendations and documents.

Interesting debatable emphasis is also shown by the data showing that women expect men to participate less in child care against the background of all modern dynamic processes in our society. The passivity of men in child health is well accepted.

The heterogeneity of the sources for information and help of the parents is also discussed and is supported by the qualitative research "Participant Observation" in the space of "The Green Sea Yard of Varna". However, heterogeneity needs to be examined to be considered a starting point

in developing public health strategies to promote health and promote certain parenting practices. It is essential through specific national policies to establish basic awareness in our society about the importance of early child development, which predetermines significant parenting attitudes and upgrades parenting practices.

The conclusions made are correctly formulated, and they correspond to the set goals and objectives and logically follow the results and statistical analysis.

I support the presented conclusions and recommendations for health promotion and prevention in early childhood and increasing parental competence with a practical focus on parents/nuclear family; extended family; future parents; specialists, and non-specialists engaged in the cause of early child development; for society at the population level. All of them are factually justified and entirely feasible at the indicated levels.

I approve **the contributions**, which are a total of 17 and mainly of an original nature. I believe that the main merits of the dissertation are the following:

1. The author's questionnaire, created for the purposes of research on ECD, is intended for the development of Bulgarian methodology (for identification, assessment and prevention of risk factors for ECD and lifelong well-being) and for the preparation of a standardized tool.
2. Recommendations are formulated for health promotion and prevention during child development and increasing parental competence, following current processes and changes in Bulgarian society.
3. Through the creation and implementation of a "Questionnaire for measuring the importance of ECD in the parental community" for the purposes of this research, many parent-specific behaviors for ECD are evaluated simultaneously, which allows them to be conceptualized for ECD research and filling gaps in national parent-child-specialist policies.
4. A systematic approach is applied, expressed in the unification and development of ideas and results of the trinity - dissertation, research project and activities in space for early socialization and prevention of children from 0 months to 3 years - with the common goal of creating and building a unified preventive environment in the period of ECD in Bulgarian society.

5. A voice is given to a hitherto unexplored community - the parent community - to express its vision and perspective on the parent-child-specialist relationship

The dissertation is written in good language and is precise in terminology. Technically, the dissertation is designed according to the requirements, and the bibliography presented by 281 sources is comprehensive.

The abstract faithfully reproduces the content of the dissertation. It has been prepared in a volume of 87 standard pages and consists of the obligatory components in 10 parts, which present precisely the structure and the content, the contributions and the publications on the dissertation.

In connection with the dissertation, the PhD student presents three original publications that meet the criteria set out in the Regulations for the development of the academic staff of MU-Varna. The articles were published after a conference, participation in a project and a Bulgarian journal. I believe that these publications and the additional four participations present the achievements of the PhD student and contribute to their promotion in the scientific community.

The scientific work presented by Dr Valtcheva gives me a reason to confidently state that she is a precise researcher with an interest in the Hygiene of children and adolescents. I believe that her dissertation is a step in establishing the place of hygienic prevention and awareness of the fundamental role of the multidisciplinary and holistic approach to early childhood development.

In conclusion, the dissertation meets the requirements of the Law for the Development of the Academic Staff of the Republic of Bulgaria. The work is presented in a finished and well-formed form.

The dissertation of Dr Ekaterina Ivanova Valtcheva presents her own experience from the study of a significant problem in modern society. The comprehensive and consistent analysis provides opportunities to develop recommendations to all stakeholders, including national, regional, institutional, governmental and non-governmental levels, supporting early childhood development policies. Current algorithms for developing a Bulgarian methodology for identifying, assessing and preventing risk factors for health and well-being throughout life and creating a standardized tool for parental assessment of general child development at an early age.

I find the topic developed by the doctoral student extraordinarily relevant and timely. The content of the dissertation is legitimate and thoroughly developed, well-illustrated and presented in good professional language.

All this gives me a reason to positively evaluate the dissertation "Early Childhood Development: Features and Prevention of Disorders" and share my **positive** vote for the award of Assistant Dr Ekaterina Ivanova Valtcheva's educational and scientific degree "Ph Doctor" in Medicine.

20.05.2022

Sofia

Scientific jury member:



(Prof. Dr Emil Vodenicharov, MD)