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Review

# Pediatric psychology in managing fragility of the child and adolescent in pediatric condition

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## Abstract

This paper seeks to provide guidance for a reference framework to aid in the foundation of the section "Pediatric Psychology and Related Issues" of the *Journal of Pediatric and Neonatal Individualized Medicine* (*JPNIM*). The section represents the opportunity to raise awareness on developmental psychology at "developmental-clinical" level rather than at "clinical-developmental" level. In the former expression, we focus on the object of the study and intervention during the developmental process, highlighting specifically the method, approach and implications in patient management when referring to "clinical". In the "clinical-developmental" approach, greater focus is given to the clinical implications and to the psychopathological case identified by the clinic.

This paper focuses on the way in which know-how and expertise in pediatric psychology draw on a vast body of evidence and literature produced by the scientific community. This paper has dedicated a

great deal of space to background notions as a demonstration of the "fundamentals" which illustrate the significant difference between pediatric psychology and the mere application of psychology in pediatrics. This paper guides the reader towards an analysis of the condition of fragility which often characterizes the pediatric condition, subsequently addressing constructs and methods. It concludes with the identification of several areas of research and intervention within the fields of mother-child well-being and pediatrics.

### Keywords

Section opening, developmental psychology, developmental-clinical level, fragility, pediatric condition, complexity in medicine.

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### Foreword

The creation of the section "Pediatric Psychology and Related Issues" of the *Journal of Pediatric and Neonatal Individualized Medicine* (*JPNIM*) represents an opportunity to raise awareness on developmental psychology at "developmental-clinical" level and not at "clinical-developmental" level. In the former expression, we focus on the object of the study and intervention during the developmental process, highlighting specifically the method, approach and implications in patient management when referring to "clinical". In the "clinical-developmental" approach, greater focus is given to the clinical implications and to the psychopathological case identified by the clinic.

The section also offers, however, the possibility to co-develop, through a multidisciplinary dialogue, a model for the management of the child and the bio-psychosocial complexity this entails.

### Background

Pediatric psychology [1-7], like developmental psychology on a developmental-clinical level, focuses on the management of typical or atypical developmental trends [2, 5, 8-15] in minors during a chronic or acute pathological disorder, or syndrome, and relative treatments.

It is usual to pose questions regarding the psychological implications of treating newborns, children, and adolescents in these disciplines, much more so than when managing adults. However, such awareness does not always embrace those conditions which are not immediately identifiable in a nosographic psychological frame, but which are identified as conditions of general fragility [16-21]. It is these conditions, however, which clearly seem to demonstrate the importance and the very need for pediatric psychology, rather than the use of psychology in pediatrics. This is due to the object of study, which, as we have seen, characterizes the know-how and expertise, and requires specific perspectives. These perspectives [22] include the safeguard and promotion of the health and well-being [23] of the child's developmental trajectory [2, 5, 10-14] together with the strengthening [24, 25] of her/his resources, which can function as variable internal moderators of stress [26] induced by the pathology. We might also mention the epigenetic perspective [27-29], especially when the minor is a young infant or in the prenatal phase. In these developmental periods, management of the child's development, together with the safeguard of its well-being, is promoted through the management of the mother's relationship with this developmental process. It is a management process that will influence any trauma from serious malformation found in the fetus during imaging, for example, or on prenatal attachment [30].

Finally, we include here the perspective of positive development [31], with the valorization of an experiential self that seeks to guide the child towards the integration of the illness into his/her own life story and reality [32]. These are all perspectives of pediatric psychology, which also include projections of the pediatric condition regarding the development of the child [33], and which shape and trace the clinical nature of management in terms of transformation.

In this sense, the role of the pediatric psychologist is clearly defined [34] as a co-manager of the condition of fragility. The contextualization of pediatric psychology as defined here, together with the intervention of the pediatric psychologist, must lie within a "multi-professional dialogue" [35,

36], involving pediatrics and related specializations, and child and adolescent neuropsychiatry. Therefore, we can imagine this multi-professional management as a response to the complexity of the child's needs that characterizes fragility (from the prenatal stage to adolescence), both needs induced by the developmental "moment" and those which are determined by the pathology.

This very compresence of conflictual needs [5] confirms the necessity for a psychological intervention designed to manage developmental conflict, involving cognitive processes (representations, models, scripts, the concept of the self, self-esteem), emotional processes (the management of primary emotions, for example, fear induced by the unknown, negative anticipation of events [37] a sense of guilt [38], and attachment [39]), and their transformation in terms of disorganization [40-43]. This complexity of needs, based on developmental process disorders, can become a developmental blackout which seems to characterize fragility in the mental functioning of child/adolescent (C/A) affected by pathologies, in the perioperative phase [44] and/or during treatment.

This is very much a dynamic state of complexity that is dysfunctional on a psychological level and often subject to a reductionist approach by health workers. Although this state is recognized as a difficult and/or critical state, it is evaluated as a condition of general risk, without considering the multidimensional aspect of the state and without predicting future outcomes. These may also include outcomes that can be considered as predictors of traumatic developmental disorders [45, 46]. It is also important to note that the impact of premature trauma has significant consequences on the health and the management of illness in children [47]. Reductionism often leads to simplification in patient management, which, in practice, fails to acknowledge the complexity in medicine [48, 49]. The dynamic state of dysfunctional complexity thus turns into a condition of fragility, with factors of hyperactivity (relative to specific conditions) [50-53], an incapacity for creative adaptation [54-56] and precarious inner protection mechanisms [57-60]. Factors also include the transformation of cellular memory [61, 62], for example, the mentalization of a relationship experience with parents, in terms of trust and security [39, 63], or the internalization of an impotent parent regarding an invasive treatment which causes physical pain and psychic suffering; a sort of catastrophic event [64] on a mental level (cognitive, emotional).

We might also mention here, as a factor of fragility, dysregulation in terms of identity, emotional and relational domains [65-67] and, obviously, the cerebral structures delegated to these functions through interconnections. Factors also concern changes in those very inner operative models [49, 63, 68, 69]; models with which the child, for example, interprets the relationship with the illness event, throwing his/her interpretation of the world and reality up to now into crisis.

These fragility factors also include a toxic response to stress [70, 71] developed precisely by an investment of resources; it is resilience applied with total participation, which attempts to negate the effects of the stressful event. The process involves transformation of the hypothalamus structures, pituitary gland, and adrenal glands as a chemical response to stress, with an increase in the production of cytokine, neuropeptides, cortisol, etc., and strengthening of the neurotransmitters. These alternations affect the development of anxiety and emotions of fear, anger, and sadness [72-74]. It is important to note that fragility often pertains to children or patients who are in a situation of pervasive languishing [75] and, therefore, in a state of disorder, feeling a sense of emptiness and disorientation, not attributable to a psychopathological medical case but rather requiring guidance towards a state of flourishing [75]. Fragility can be present at the same time as trauma [76, 77] and, nearly always, if it develops over a protracted length of time, can lead to a state of fatigue [78, 79]. It is clear from the above that fragility can be understood in terms of a relationship between resources and disorders, based on how the child has mentalized her/his experiences of the pathology, of the different relationships governing the pediatric condition and of the image of the self, etc. [5, 6].

The frame described above clarifies the need to involve pediatric psychology to support the therapeutic event managed by the pediatrician.

It is an intervention that also includes the child's reference systems – the family system, the care system, etc. – with a clear idea of how the context is not a variable of health but an actual epiphenomenon [80] in as much as it involves a complex combination of elements (behavior, roles, relationships). Although this phenomenon has its own distinct category, it is characterized by collateral effects that coexist in parallel (health/context/culture) and that would not be the same under other conditions of health. The context, therefore, co-builds the profile

of a condition of well-being, together with specific functional processes involved.

The need to manage the context has a double function in the sense that not only does the context(s) become a reference for the co-building of a condition of health, such as well-being, but it also guides relationships between the child and his/her reference systems, creating a relationship "field" which defines "pediatric relationships" in pediatric psychology. This then becomes one of the fundamental constructs of the discipline [4, 5], as described later.

It is important here to mention the specific role of the pediatric psychologist during pregnancy, including high-risk pregnancy, assisted reproduction, antenatal classes, preterm birth parental support, support to women and couples in the 4th trimester of pregnancy, support to migrant parents and child neglect.

Referring the reader to specific studies for a greater understanding of the application of pediatric psychology in these areas, we would like to underline here the importance of directing patient management to the field of the unborn, to the relationship which the mother and/or parental couple establishes with the development of the child, regarding representation, recognition and parenting competence in terms of scaffolding [81, 82], coping, [6, 83-85], and caregiving [86].

## The theory's constructs

Innovation brought about by pediatric psychology in the management of the development trend in minors affected by a pathology (which is a different direction from that taken not only by clinical psychology but also by the psychology of health) has created a strong impetus in the international scientific community of the American Psychological Association (APA) for research and the professional practice of psychologists involved in the caretaking process of minors affected by chronic or acute pathologies, in emergency, or those with syndromes, disabilities, etc. These contributions have fostered the growth of the special division (54th APA) and have led to the promotion of a body of knowledge and skills in the field, which has been continually under development since the 1960s, sparking interest across the whole of Europe [87]. Particular interest has been shown by Italy, which, in addition to research promoted by a number of universities (e.g., Padova, Palermo), also created a scientific society specifically for the discipline (Italian Society of Pediatric Psychology, *Società Italiana di Psicologia Pediatrica* – S.I.P.Ped.).

At the same time, a heuristic approach was also developed through the identification of specific outcomes. These constitute functional markers that provide pediatric psychology with the tools of developmental psychology on a developmental-clinical level, with a focus also on psychotherapy. Pediatric psychology and mother-child psychotherapy are postulated in terms of prevention of traumatic developmental disorders [88], which, through a cumulative process of traumatic events, can lead to distress. This distress can be identified in specific indicators attributable to a nosological framework [88] and often expressed with psychosomatic symptoms. The logic behind prevention also pertains to adaptation disorders [89]. Psychotherapeutic interventions are based upon the understanding of a healthy personality profile, characterized by adaptive and organized personalities. The objectivization of distress is viewed as a lack of adaptation, through the dys-function of developmental processes, ultimately leading to neurotic and/or psychotic medical cases.

Outcome markers must include those indicated above in the "Background" paragraph, starting from consideration of the C/A as a pediatric condition or a relational field between the C/A and the reference system. The C/A (an ontogeny of this field) participates in relationships with his/her fragility, with the state of his/her developmental trend and, therefore, with the result of the relationship between the developmental state of the various dimensions and their relative directions (e.g., the dimension of cognitive development and the direction of functioning of the executive functions), and evolution, viewed as a synthesis of mentalizations [90] relating to experiences (e.g., the interiorization of an experience of maltreatment, or that of an invasive treatment). This outcome changes the nature of patient management as it entails understanding the function of the child and involves the identification of resources and disorders in the here and now of developmental processes. Here we refer to processes that are mobilized, developed, and applied within these relationships. In the same way, the management of the reference systems should be viewed in relation to the development of these processes. It is an approach to management that leads to the transformation of emotional resonances, fears, parental anger, and parenting competence adequacy.

Pediatric psychology considers the identification of resources as a primary target, not only as a tool

for assessment [91] but also from a strategic point of view [92, 93]. These resources are activated by the pediatric psychologist (in the sense of an active, energetic, and proactive and injunctive intervention) and are aimed at engaging the child, providing her/him with the appreciation that we are talking her/his language, that we feel what she/he is feeling and, thus, promoting a sense of being understood and adherence to her/his life path [94]; ultimately leading to a decrease in resistance.

In these terms, the search for resources becomes a strategy also for the child, who views these resources as a "tool". Working with resources fosters an "appealing" relationship atmosphere as it promotes this adherence in the child. The search for resources passes through specific fields (**Tab. 1**), which belong to those domains indicated above, more specifically, the domains of identity, relationships, and emotions. In this sense, therefore, we seek those resources which are transversal to these domains.

Pediatric psychology know-how markers, however, must include reference to developmental crisis [95, 96] as an emotional, cognitive, and relational state. This state becomes a dominant element of the inner space [97] of the functioning of the C/A when the pathology, treatment, surgical intervention or emergency (as a critical event) causes the child's knowledge, abilities and skills to appear inadequate. Up to that moment, these seemed sufficient to the C/A when seeking to relate to himself/herself and to the world, but now the child feels a sense of turmoil [5, 6, 98] caused by this inadequacy, also posing transformation developmental tasks.

Work on trauma, which in pediatric emergencies is often an aggregate (such as the dynamic relationship between the psychic and the organic) [99], creates a holistic, dysfunctional nucleus, still sensitive, however, to adjustments in a reparative and dissipative sense [100, 101]. In this way, the pediatric psychologist seeks to guide the intervention from fragmentation of developmental resources to reconfiguration, which goes beyond reinstatement of the former condition [102].

## Methods

The choice of methods and methodologies, which characterize the expertise of pediatric psychology, is crucial and should be determined at developmental-clinical level. Methods include the clinical method, through creative techniques [103] and thus through the promotion (in the child's thinking) of an "inner script" of his/her emotional world in a transformative sense. This will occur through the production of symbolic images (and non), used to represent this world [104-106] and social referencing techniques [107], leading to the recovery of familiar relationships. Other techniques include detecting [108] and debating, involving a discussion in which the pediatric psychologist puts forward his/her point of view and discusses it with the C/A. These are techniques that are contextualized in combined counseling, as defined in absolute adherence to the constructs of pediatric psychology [5].

Here we refer to techniques, methodologies and strategies that guide change in needs in the here and now, through the search for user resources and the use of a clinical process of complex problem-solving [109]. These interventions are aimed at building and developing (various skills, representation and mentalization) alternatives that are functional to the resolution of the crisis [98] in the pediatric condition. It is a model which employs a view of the reaction of help from an integrated perspective using:

- Carkhuff's phenomenological model [110, 111], which describes the process approach to manage the message, its elaboration and cognitive and emotional restructuring, including active listening;
- the cognitive-relational model [112], with a focus on cognitive-emotional problem-

**Table 1.** World of resources to explore.

| Motivation area | Problem-solving area | Perspective-taking area | Thought area | Divergent thought area | Symbolic thought area | Executive functions area |
|---|---|---|---|---|---|---|
| Intrinsic motivation | Vision of the problem | Consideration of other people's thoughts | Fantastic/ imaginary thought | Fluidity | Metaphorize reality | Attention |
| Motivational profile | Search for solutions | Linking | Focused thought | Flexibility | - | Self-regulation |
| - | - | - | Creation of links | Originality | - | Metacognitive awareness or motivation |
| - | - | - | Intimate relationships | Elaboration | - | - |

solving [113, 114]. This model concentrates on understanding sense construction processes and representations activated by the patient, who then begins to play a prominent role in his/her life condition. The patient then is able to recover those adaptive resources to be used in the development of adaptive functioning;

- Kelly's constructivist model [115, 116], directed towards a change in thinking from a constellatory form (which often characterizes a condition of fragility and distress) in terms of thinking which views reality as stereotypical, from a thought based on prelative constructs which refer to the singularity of a reference characteristic, to a propositional thought, which includes a variety of characteristics.

This model of counseling develops through a phase of exploration and, therefore, of reception of the message, of consideration of resources and activation of problem-solving. It is followed by a phase of understanding, from self-representation to stabilization of the relationship, through the promotion of self-realization, and finally by an action phase, intended as a revisitation of relationship experiences through forms of mentalizations. These mentalizations take resonances into consideration and transform them.

It is a model that is operationalized in a specific procedure (**Tab. 2**) and which obviously requires a defined setting [5].

Together with the use of the clinical method, relative techniques, and counseling, we should add the observation method [117], the psychometric method [118] and all the experiential methods [119].

## Concluding remarks

Pediatric psychology is needed to protect developmental processes, to foster continuity in development, even when managing a certain discontinuity that the pediatric condition creates. It is needed to guide the child through the risks posed by this condition and, at the same time, support reinvestment in the child's life project and re-establish vital energy.

In this sense, several functions of pediatric psychology need to be recognized. These cannot

**Table 2.** The procedure for the counseling in pediatric psychology.

| An insight into the phenomenological model of listening… (Phase 1) | Problem-solving… (Phase 2) | Reorganization (Phase 3) | The new profile (Outcomes) |
|---|---|---|---|
| • Reception of the message (intentionality, exploration, searching).<br>• Elaboration of the message.<br>• The content of the message *versus* the 1st profile (through an analysis of the emotional and cognitive characteristics…), intercepting resources and criticalities (the problem of the C/A and the family in the pediatric condition).<br>• Activation of problem-solving (cognitivist approach). | • Assessing the problem *versus* the 2nd profile (the C/A and his/her representation of the problems of the pediatric condition).<br>• Assessing the resources intercepted previously.<br>• Assessing the outcomes relative to the type of thought and type of emotion: thought based on constellatory, prelative and propositional constructs (constructivist approach).<br>• Promoting analysis of the cognitive processes which precede, accompany and follow problem behavior, promoting inner dialogue and guiding the child towards emotional aims and behaviors the child would like to achieve on a self-representation, affection and expression level.<br>• *Versus* the 3rd profile (an attempt to redefine the relationship the C/A has with him/herself and with the illness in the pediatric condition). | • Alternative phenomenological reconstruction of senses, meanings and emotions (through the promotion of propositional constructs of the thought). | |

C/A: child/adolescent.

be reduced purely to providing care and treatment but, in a more wide-reaching way, must be identified in the search and discovery of resources, in facilitation, in social support, orientation, accompaniment, coaching and in the creation of contacts and ties.

Prevention must also be recognized as a major function, providing direction for the many contextualizations of pediatric psychology in schools, social centers, gyms, etc., towards the development of life skills [120]. According to the indications of the scientific community, prevention should be incorporated in the prenatal pathway and in home visiting, which starts in the 4th trimester of the pregnancy. Reference to prevention should also be made concerning support and orientation during assisted reproduction, where the promotion of parenting, representation and parenting competences become an antidote to the exasperation of the need to reproduce.

## Declaration of interest

The Author declares that there is no conflict of interest.

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