THE BIOPSYCHOSOCIAL VULNERABILITY OF THE HYPERACTIVE CHILD: A CASE STUDY OF A TREATMENT APPROACH

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ABSTRACT

The classical medical model of illness fails adequately to account for many of the features of children described as hyperactive. The concept of biopsychosocial vulnerability, its assessment and coordinated management by a multidisciplinary team is illustrated by a case history. The important role of family dynamics is highlighted in this study to emphasize its often neglected value in the total treatment regimen.

Introduction

Over the past fifteen years an increasing amount of scientific and popular literature (4, 10, 12, 13, 15, 18, 21) has been written on the evaluation and treatment of the hyperactive child. Almost all of this literature stresses the importance of a multidisciplinary approach with concern not only for the child, but also for his family, school and social environments.

It has become clear that the classical medical model of illness fails to account adequately for many of the features of the child who is described as hyperactive. A recent paper by Weiss and Hechtman (17) concisely summarizes this position, "the hyperactive child syndrome can only be understood in all its complexity when viewed from social, psychological and biological standpoints." Although this concept of hyperactivity has gained wide theoretical acceptance, case examples illustrating this broader approach to the assessment and management of hyperactivity are lacking in the literature. This paper addresses that omission.

For more than twenty years the Child Study Unit in the Department of Pediatrics, University of California, San Francisco, has been evaluating and treating thousands of children who have been referred because of developmental, learning and behavioral disorders. Evaluations are coordinated by behavioral pediatricians with special training in child development and family dynamics. Pediatric psychologists, language specialists,

a psychiatrist, neurologist, nurse practitioner, and special education teachers form the rest of the Unit.

Although many parents and teachers present complaints about childrens' hyperactivity and poor attention span,* our comprehensive evaluations have shown that fewer than 5% of these children require medication as part of our treatment approach. The following description of our involvement with Jon and his family is an example of one of the more difficult to manage hyperactive children we have seen. Our emphasis on family issues is not accidental, as we have learned that family dynamics are frequently the most crucial yet often missed aspect of an evaluation. Indeed, ignoring family interactions may have seriously adverse consequences in the treatment of the hyperactive child.

Case Report

Past History

When Jon was six and a half years old his mother, Karen, sought our help because his constant disruptive behavior, inability to accept limits and difficulty in learning could no longer be tolerated by his family or his school.

Karen's pregnancy and Jon's delivery and infancy were normal. Jon became a problem at about two years of age. In contrast to his easy-going brother, Harry, one year older, Jon refused to accept limits and was constantly restless, irritable and easily frustrated. Attempts at discipline created intense conflicts at home and especially in public. He refused to stay

*These complaints are mentioned in 70% of our referrals

in bed at night. His early morning activities created chaos at home and resulted in predawn calls from the police who found him wandering in nearby streets. His uncontrollable behavior made him and his family unwelcome guests everywhere; babysitters refused to care for him; he could not play outside with neighborhood children. The family became social recluses trapped at home with Jon.

Jon was three when Karen sought help from her pediatrician who stated that Jon could not be evaluated at such an early age and asked her to return when he was five. His behavior continued to worsen. In addition to continuously destructive behavior, his sleep problem became worse. He refused to sit through meals, eating became a struggle and he began loud vigorous swearing when frustrated. His mother's multiple and varied efforts at discipline were fruitless. She became increasingly desperate. On several occasions she lost control, choking him and hurling him across the room. In fear of injuring him, she relegated his discipline to his father, Carlos, who soon experienced the same loss of self-control. Jon's older brother, Harry, was frequently called upon to try to manage or appease Jon, often without success.

At age five, Jon's pediatrician decided Jon was hyperactive and prescribed pemoline (Cylert). In addition, dietary manipulations were attempted. The parents saw little improvement. However, when it was requested by us two weeks prior to the evaluation that the medication be discontinued, a marked deterioration in Jon's behavior was noted by his parents.

The Evaluation

Jon was six and a third when he was seen as an outpatient for a comprehensive multidisciplined four day evaluation. During this period he literally bounced himself off walls and over and under furniture, touched and handled everything in sight, exclaimed in a loud voice about every detail and failed to respond to usual limit setting attempts. In short, he was out of control and at the mercy of his many impulses. He reacted to stress during the evaluation with increase in activity, temper tantrums and destructiveness (toys, test materials, etc.). He showed little response to praise.

His general physical examination revealed his height and weight to be at the fourth percentile for his age but was otherwise normal. His extended neurological examination showed evidence of lags in neuromaturational development: poor tandem gait with dystonic posturing, rostral dominance on dual simultaneous stimulation, and almost total inability to distinguish right from left.

During the family diagnostic interview conducted by the pediatrician (H.G.) with Karen, Carlos and Harry, Jon's lack of inner control and his parents' inability to set limits were quite evident. Karen and Carlos appeared exhausted and hopeless. Karen felt blamed by Carlos for Jon's behavior and expressed much resentment for Carlos' lack of help. Carlos' response was to escape the chaos by watching television or going bowling. Karen admitted she, too, had had serious thoughts of

escaping the family by walking out. They had not been out together without the children in over three years.

In talking about their own childhoods, they related their own lack of effective parent models. Karen was orphaned at age eight and was raised by an unsympathetic aunt. After his parents' divorce at age five, Carlos came with his Spanish-speaking mother from Guatemala to live in the United States. Carlos had continued to have some difficulty with English despite speaking without an accent. (Indeed, that Carlos had had difficulties with language development in his original language, Spanish, was suspected but could not be proven.) Harry was very resentful of his role in the family as Jon's caretaker older brother. He was constantly made to accede to Jon's demands and wishes in order to relieve his parents from dealing with Jon's outbursts and resistance to discipline. Thus the family's main style appeared to be one of mutual blaming, defending and focusing on their failures.

Jon's behavior made developmental assessment difficult, but a tentative profile of his relative strengths and weaknesses began to emerge. All examiners -- the behavioral pediatrician, psychologist, educational specialist, speech and language consultant -- observed that Jon had great problems in attending, was easily distractible with increased motor activity, and showed delayed oral language acquisition and poor visual motor integration. All agreed to the recommendation of a trial of medication, a special school program and family

counselling. We summarized our findings in a session with the family and discussed our specific recommendations. We sympathized with the parents, particularly Karen, about the difficult situation they were in and the hard work they had done with little positive feedback. This validation had a marked emotional and touching effect on the parents who up until then had heard few understanding statements from professionals or friends.

Initial Treatment Regimen

Stimulant medication was reinitiated. Methylphenidate (Ritalin) was substituted for pemoline as the former was believed to be easier to titrate. He was started on 5 mg. b.i.d. and slowly increased by 2-1/2 mg. increments eventually to 15 mg. t.i.d. (last dose at four in the afternoon). Karen reported to us daily by phone the first week. In bimonthly sessions with the family, improvement of limit setting and creating a consistent structure at home for Jon were emphasized. Jon's parents and teacher completed our evaluation forms prior to and after the institution of the medication (20). The medication appeared to be of benefit both at home and in school. Side effects such as disturbances of appetite and growth were minimal. One month after the evaluation a meeting was held between Jon's school personnel and the Child Study Unit staff. All present agreed to the need for Jon's placement in a special class for educationally handicapped children, but no opening

was available for him in the middle of the school year. The school hoped the medication would help Jon cope and learn in his regular classroom setting, but he made little improvement in academic skills during the three months he remained in that classroom.

In initial counselling efforts, the parents were asked to choose a specific behavior of Jon's they would like to have changed to make family life more pleasant. They, of course, wanted everything to change but finally decided that being able to sit through a meal without struggling to keep Jon in his seat would be a good start. With help, the parents instituted a program using a system of balancing responsibilities with privileges, expecting only small incremental changes in Jon's behavior. He did make progress. At the end of the week he was able to sit in his chair for fifteen minutes. However, at the next session with the family, that success was ignored by Karen, who felt that nothing had changed. She felt as frustrated and hopeless as ever. Although it had been stressed that medication was only one part of Jon's total treatment program and that changes at home and at school were even more important, Karen admitted that she had hoped the medication would miraculously change Jon's behavior to that of a normal child. Despite some improvement, she and Carlos were realizing how much work lay ahead and were feeling challenged and depressed. Nevertheless, with bimonthly counselling over the first four months after the evaluation, the family was able to

make some progress in getting Jon to sit through meals, decrease his swearing and go to bed at an earlier hour. There were, however, frequent relapses and recurring crises. Things would work for awhile but inexplicably to the parents the problems would recur after a few weeks. It became clear to the therapists (H.G. and L.D.) that despite the family's best efforts to follow the recommendations, the parents were also undermining each other's efforts at consistent discipline. There was inconsistent limit setting on both parents' parts. The children would force up the privileges for following the rules and the parents would accede. With the start of summer vacation, Jon's behavior worsened. He stole from his parents on three occasions and urinated intentionally on the rugs and down the heating vents of his house. Karen responded by restricting Jon to the house, thus making his punishment increasingly unbearable for both of them.

Focusing on the Family System

Five months after the family's initial meeting with the C.S.U. it was apparent the bimonthly counselling sessions on parenting techniques (esentially behavior modification) and giving emotional support were inadequate. A change in the focus to more underlying issues of the family's interactions was indicated and weekly counselling was initiated with the pediatricians over the next six months, as well as the whole family meeting together. Occasionally, each child and parental couple

were seen separately which avoided some of the chaos and interfering distractions present when the family was seen as a group.

At first, in individual play therapy, Jon played with board games, learning how to win and lose according to rules. When Jon was introduced to the sand tray, a more open-ended play technique using a sand box and a large choice of miniature figures, animals and landscape features, his play was chaotic and he completely filled the sand tray with objects. Yet slowly he became increasingly organized and constructive. Harry's play themes included a need for boundaries and feelings of loneliness.

Working with the parents as a couple, it was clear that there was little shared enjoyment. They rarely went out together. Conversation between them focused on the children. Karen had always controlled the relationship and now ran the household including the discipline as best she could. Over the course of therapy as Karen became more competent as a mother, she gained confidence in general. Carlos looked to his wife for leadership and approval which began to irritate Karen.

In subsequent sessions Karen's unhappiness about their relationship became more pronounced. Carlos avoided disagreeing and arguing with her even at his own expense. Whether out of frustration or sadness at his situation, he would undermine her efforts at parenting and spend longer periods working away from the home. In an individual session with Carlos, he began

to realize that he could stand up to his wife and that she would still love him and not leave him. The therapists looked for opportunities for Carlos to show his strengths to his family and gave him compliments whenever possible for taking more responsibility in the family. Karen became more attractive as Carlos began to assert himself and pay more attention to her.

As mentioned, the family was seen as a group at regular intervals. On one occasion the family was asked to draw together on the same large piece of paper, each using their own colored crayon. No other instructions were given for this family drawing (1, pg. 124-131). Jon's inability to control himself and his parents' lack of limit setting resulted in Jon literally invading Karen's and Harry's spaces and drawing over their pictures.

In a dramatic moment, Harry burst into tears and his parents realized they had done nothing to support Harry against Jon's invasions of his space, literally and metaphorically, a situation that occurred repeatedly at home. Karen was most affected and acted on her new understanding of the need for clearer boundaries. She began separating and setting limits for Jon more effectively. Carlos' effective disciplining lagged behind, although he too improved in this respect.

Jon was transferred at the beginning of the new school year to a classroom with children of normal intelligence but with specific learning or emotional disabilities. The teacher

student ratio was 1:4. His overall behavior greatly improved at school using fairly classic behavioral modification techniques and the stimulant medication. A multisensory approach to reading and writing was employed with apparent success. After six months in the class, fourteen months since his first testing at the C.S.U., he was retested. Most pertinent and striking were the differences noted in Jon's behavior. He was able to sit in his chair for an entire two hour session. He was delighted with success and praise. He still required firm clear limits but did respond. He scored within the normal range of intelligence on testing. There remained evidence of difficulties with language, visual perception and visual motor integration, but he was compensating fairly well. His language evaluation indicated a significant disparity between his oral language and non-oral language abilities. Specific language development remediation was instituted at school. Jon did excellently over the next eighteen months and he began to spend part of the day in a regular room setting with success.

Interestingly, as Jon's behavior continued to improve, Harry's behavior became symptomatic. Harry continued to get less attention from his parents and was still giving in to Jon's demands and intrusions. On one occasion at home, Harry put his fist through a glass window in a fit of rage. Fortunately, he received only minor injuries. It appeared that Harry's behavior almost symmetrically deteriorated as Jon's improved. Harry did poorly in school, he was frequently

teased and considered a "cry baby". Concomitantly as Jon became less of a problem, the parents' concerns shifted to Harry. They were worried because Harry preferred to play with little girls and was acting effeminately. It was suggested that Carlos spend more time with the boys, particularly Harry. He began taking them bowling and Harry was allowed special privileges because of his age. On occasion, supervised fighting between the boys, wrestling and using foam bats, was allowed and Harry was given the opportunity to hold his own, which he did quite easily. Harry's behavior improved at home and at school.

For the past six months the family has been seen on a monthly basis. After nearly two years, they and Jon have made much progress. His mother has begun working, Jon is able to be at home alone in the afternoon after school. He is responsible for a dog. The parents are able to go out alone and leave the boys with a babysitter. Jon continues on the same dose of methylphenidate and he has been growing. Nevertheless, Jon and his family remain vulnerable. Jon's short attention span, impulsiveness, and learning handicaps present a challenge to his academic pursuits. Karen and Carlos, though enjoying one another much more, remain susceptible to distractions from their sons. Lastly, they face adolescence which is often a particularly stormy period for children like Jon and his family. Thus, we maintain our relationship with the family and are available for more intensive involvement as the need arises in their family's growth and development.

Discussion

Because every person is unique, we use extreme caution in applying diagnoses and labels. We prefer to describe a child in terms of his/her strengths and weaknesses. Nevertheless, we feel this case well illustrates many of the features in the evaluation and management of a child who is given the label of hyperactive child syndrome.

We would like to review certain aspects of the history, evaluation and management of this child in terms of his bio-psychosocial vulnerabilities. These vulnerabilities include those presented by the child as well as his family, neighborhood and school environments. We have schematically outlined our evaluation and interventions in figure 1. (Figure 1 near here.)

Jon's history is not atypical. Hyperactivity as a complaint often presents at age two or three as non-compliance to parental authority (6). The lack of response of Jon's pediatrician to Karen's concerns about her son at age three was unfortunate. With understanding and assistance when such primary symptoms are first presented, the pediatrician could do much to prevent later problems of loss of self-esteem, depression and poor academic performance that are so common for these children as they grow older (5). The understanding physician could perhaps also save the child from further family attribution and from an increasingly rigid and inflexible family response to his behavior.

Although Jon displayed no physical or gross neurological abnormality, he was physically small and showed evidence of neurodevelopmental lags. He demonstrated a short attention span, high activity level, strong intensity of response and impulsivity. He had overall normal intelligence, yet he had specific difficulties with language acquisition, visual motor and perceptual skills. The importance of deficits in language should not be underestimated in generating behavioral disturbances in children. This child, without many inner controls and without easy verbal modes of expression, was sad, angry and had quite low self-esteem.

The earlier ineffectiveness of the Cylert at age five underscores the dangers of prescribing medication without a complete evaluation and management program (3), particularly with regards to family interactions. Medication without counselling might indeed mask serious family dysfunction. Though we use stimulants in less than 5% of the children who are labeled as hyperactive by parents or outside agencies, Jon was considered a candidate for a trial of medication. It was the judgment of the C.S.U. consultants that the child's deficits in attention and increased motor activity precluded useful functioning even in well-structured, tightly-controlled environments unless he also received medication. Methylphenidate was attempted with close monitoring by parents and teachers and pediatrician. The medication was tried only as an adjunct to other therapeutic modalities and initially was used to allow

the other therapies (counselling and special education) a chance to be effective.

A child's educational and neighborhood environments are also areas that bear close scrutiny. Inappropriate class placement and expectations can result in years of frustration and failure for the temperamentally or developmentally vulnerable child (11). Neighborhood interactions may require close support and structure in order for the child to mature in a socially positive manner. It is beyond the scope of this paper to review the techniques of special education with regard to hyperactivity and learning disabilities (8). A face-to-face meeting between consultants, parents and school personnel often makes the crucial difference as to whether recommendations are implemented and services provided (14). Close individualized attention, often in coordination with a behavioral regimen and medication, is essential. Special efforts at remediation of learning difficulties including deficits of language acquisition are important as are opportunities for these children to participate in regular class activities when feasible.

Our final comments are reserved for family dynamics and counselling. Wender (19) and Barkley (2) consider family turmoil a consistent concomitant of the hyperactive child syndrome. The temperamentally difficult or developmentally disabled child is a severe stress to any family, particularly in the areas of parental self-esteem and the marital relationship. This family was especially vulnerable because both

parents had relatively impoverished emotional backgrounds and a poor communication style, including language difficulties, which added to the woes of raising this formidable child. The stress certainly took its toll on Harry also. He felt neglected and was forced to give in to Jon, leaving him with a feeling of weakness, impotence and helpless rage.

Each family calls for different amounts of support, education or counselling. The primary care physician may be able to provide much of this support. In our case, supportive counselling on parenting techniques was insufficient and family therapy aimed at understanding and changing the family system (the patterns of the family members' behavior, structure and hierarchy (7, pg. 100-128)) was initiated. When basic parenting education, including behavior modification techniques fail in a family, one must suspect more important factors are operating, usually covertly or unconsciously, within the family system to keep things, bad as they may seem, the way they are (11, pg. 21-34, 16, pg. 13-28). This concept of family homeostasis (9) is especially useful in understanding all families, including this family. Jon's problems served to focus the parents' attentions and energies away from their marital difficulties which were far more threatening to the couple and to the family unity. The parents' covert disagreements in managing their children in part kept them from being effective as parents. Their involvement in managing and maintaining their sons' difficulties filled their otherwise meager marital relationship.

Our hypotheses were confirmed many times. A family's process (1, pg. 21-27) (the way they interact), will display itself in any number of situations. The frequent relapses and crises in the first six months were initially puzzling; sensible advice was inexplicably ignored. Then strikingly, as Jon slowly improved, Harry's behavior deteriorated (5), for a variety of reasons, of course. In viewing the family as a system, each child's problems served to deflect their parents' attention away from the couple's own unhappy, empty relationship. It was only after we helped the parents to deal with and improve their marital relationship that both boys became less of a problem to their parents, schools and themselves.

The family system as displayed by Jon's family calls for the skills of competent developmentally oriented family therapists. The other biopsychosocial aspects of the hyperactive child syndrome may also require an appropriate specialist and treatment, the psychologist, special education teacher and language specialist. It behooves the physician, as coordinator of the child's health care, to recognize the biopsychosocial vulnerabilities of the hyperactive child and to help the family find appropriate professional assistance. The value of a well-coordinated multidisciplinary approach should not be underestimated.

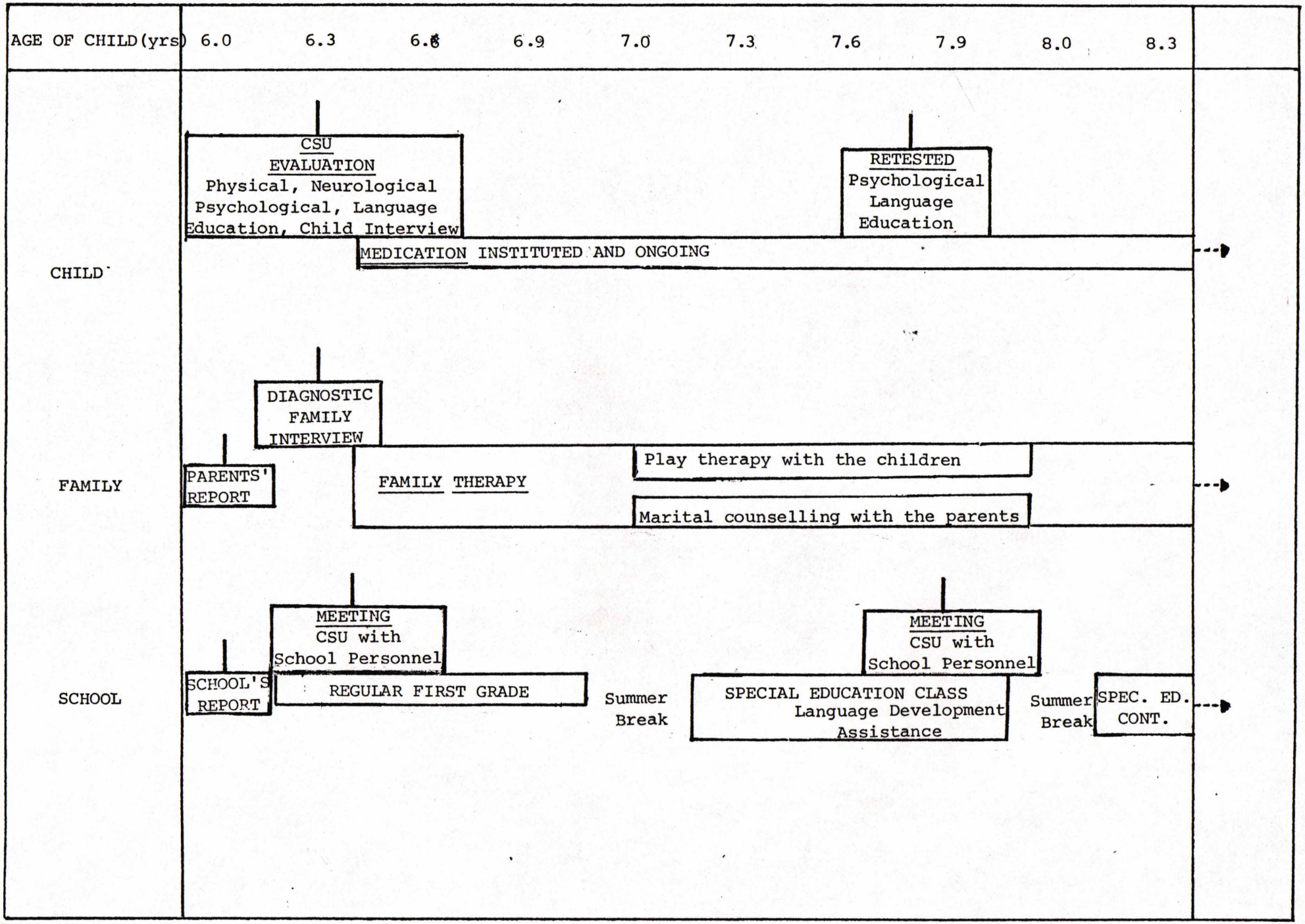

Figure 1. A schematic representation of the Child Study Unit (C.S.U.) evaluation and interventions.

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