

Developmentally Focused and Home-Based Early Intervention Program: A Case Report

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Abstract

Early intervention refers to a multidisciplinary approach to developmental support services developed for children aged 0-3 who are considered to be in the risk group and tend to develop differently from their peers' development level. In this study, home-centered early intervention was applied to a 17-month-old toddler within the framework of a developmentally focused early intervention program, and the effects of these practices were evaluated respectively. Denver-II Developmental Screening Inventory and Portage Developmental Scale were applied to the child before and after the program. As a result of developmentally focused and home-based early intervention, there has been an increase in the social, cognitive, self-care, and especially psychomotor developmental domains of the child. We revealed that the toddler started to perform applications such as waving hands, transferring an object to another place, communicating by making eye contact, reacting to his name being called, being able to pay attention to the object shown, and layering the puzzles. In addition, in the preliminary evaluations, we observed that the parents who were insufficient about how to play games with their children and what their children could do during the developmental stages were found to be participatory and self-confident after the early intervention applications.

Key Words: *Early intervention, developmentally focused intervention, home visiting, parental support.*

Gelişim Odaklı ve Ev Tabanlı Erken Müdahale Programı: Bir Olgu Sunumu

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Öz

Erken müdahale; yaşlılarının gelişim düzeyinden farklı gelişim gösteren, risk grubunda olarak değerlendirilen, 0-3 yaş çocuk ve ailelerine yönelik geliştirilen, multidisipliner bir yaklaşımla gelişimsel destek uygulamalarını kapsayan hizmetlerdir. Bu çalışmada; gelişimsel odaklı erken müdahale programı çerçevesinde 17 aylık bir bebeğe ev merkezli erken müdahale uygulamaları yapılmıştır ve bu uygulamaların etkisi değerlendirilmiştir. Bu çalışmada her hafta aileye çocuğun yetersiz olduğu becerilere yönelik hedefler verilmiş; ailenin evde çocukla uygulama yapmaları desteklenmiş ve her hafta aileyle birlikte programın süreci değerlendirilmiştir. Uygulamalara başlamadan önce ve sonra çocuğa Denver II Gelişim Tarama Envanteri ile Portage Gelişim Ölçeği uygulanmıştır. Gelişimsel odaklı ev merkezli erken müdahale sonucunda; çocukta sosyal, bilişsel, özbakım ve özellikle psikomotor gelişim alanlarında artış olmuştur. Erken müdahale sonunda bebeğin el sallama, bir nesneyi bir başka yere aktarabilme, göz kontağı kurarak iletişim kurma, ismine tepki verme, dikkatini gösterilen nesneye verebilme, büyük parçalı yapbozları dizme gibi uygulamaları yapmaya başladığı belirlenmiştir. Ayrıca ön değerlendirmelerde çocuğuyla nasıl oyun oynayacağını ve çocuğunun gelişimsel dönemlerde neler yapabileceği konusunda yetersiz olan anne babanın, erken müdahale uygulamaları sonunda katılımcı ve özgüvenli oldukları gözlenmiştir.

Anahtar Kelimeler: *Erken müdahale, gelişimsel odaklı müdahale, ev ziyaretleri, ebeveyn desteği.*

Introduction

In early childhood, factors such as family, caregivers, environment, school, services and policies for the child can have an impact on a child's development (Aytekin, Taştekin and Özkızıklı, 2018). For this reason, family-based programs for children with developmental disabilities are of great importance for both providing a comprehensive approach and offering sustainable and effective services (Sperry, Sperry and Miller, 2019).

Early intervention services are the practices that support infants and toddlers, disabled children, or those who experience a developmental delay from birth to school, and their families (Canavera, Johnson and Harman, 2018). Such a practice enables special education, therapy, counseling, service planning, coordination, assistance and support. It also includes training sessions for parents and developmental support practices in the home environment (Olusanya, Vries and Olusanya, 2018).

Provided to children aged 0-3 who have a developmental delay or biological and environmental risks that may hinder their development, early intervention services are the ways to support the child's development by helping their parents as well (Fixsen, Blase, Naoom and Wallace, 2009; Olusanya et al, 2018). Early intervention studies consist of application, evaluation, diagnosis, informing or providing guidance, individualized family service plan preparation, organization of service, evaluation of the 6-month period, annual evaluation, and transition process (Aytekin, Taştekin and Özkızıklı, 2018).

The application phase is the first step of early intervention. In the evaluation phase; All developmental areas of the child are evaluated in detail, and whether there is a problem or not is diagnosed. During the informing phase, the family is informed and directed to the necessary institutions. Individualized Family Service Plan; by holding meetings, both the family and the experts create a program prepared for the child. After 6 months of implementation, the early intervention plan is evaluated; Corrections and additions are made and re-evaluated at the end of 1 year. In order for the child to receive education with normally developing children, the "transition period" is started (Sawyer and Campbell, 2012).

Developmentally focused early intervention process includes strategies designed to help children to maintain their social, emotional, cognitive, language, physical and psychomotor development in a healthily and especially support the active participation of parents (Case-Smith, 2013). Numerous studies today prove that many obstacles and disabilities can be eliminated even before they start to harm, thanks to early detection of developmental deficiencies in children as well as the early intervention (Aytekin and Bayhan, 2016, Diken et al, 2012; Epley, Summers and Turnbull, 2011; Poon, LaRosa and Pai, 2010; Sawyer and Campbell, 2012).

Home visiting in early intervention practices offers an opportunity to personalize the child and family to meet their essential needs. Providing early intervention services in the home environment gives the family the chance to utilize natural learning activities to support their children (Poon, LaRosa and Pai, 2010). On-site observation of the child and family during home visits strengthens early intervention efforts. It provides the opportunity to evaluate the child with its biopsychosocial dimensions. Home visits should be made by professional team members such as child developers, social workers, psychologists, audiologists, and occupational therapists when necessary. These professionals must be competent in evaluating the environment in which the child grows up.

Developmental identification and early intervention are two different components that complement each other. The timely detection of children with developmental disabilities is essential for early intervention, which strengthening child's developmental process, helps children acquire new skills and behaviors to reinforce and consolidate learning (Smythe, Adelson and Polack, 2020). In addition, creating support for the child and family within the scope of early intervention helps children to build their own knowledge, confidence, and coping strategies, which positively affects their cognitive development. However, data on developmental diagnosis and developmentally focused early intervention studies around the world appear to be insufficient, and there are not sufficient practices available to guide policymakers and donors (Duttine, Smythe and Calheiro, 2019).

In the early intervention practices carried out so far, the child's disability is eliminated under the supervision of a specialist, not with the

family. Services for children with special needs or developmental disabilities at an early age have tended to focus mainly on the child's disability (Xu and Filler, 2005). As a result of this approach, working with families was often overlooked, and the family was perceived solely as a complement to child-oriented interventions (Epley, Summers and Turnbull, 2011). However, family-centered practices are intensely considered as the basis of early intervention practices today (Aytekin and Bayhan, 2016).

The basic developmental needs of children with normal development and those with developmental disabilities tend to be parallel to each other. Zuna et al. (2009) conducted a study in which the Family Quality of Life Scale, which was developed to be used in families with disabled children, was actually used with the families of non-disabled children.

Parent-oriented interventions, where parents are trained to teach children various skills from early childhood are feasible and cost-effective (Case-Smith, 2013; Diken et al, 2012; Guralnick, 2001; Sawyer and Campbell, 2012). The short- and long-term effects of parental involvement in early intervention practices may emerge as different processes. Long-term gains are reported in programs that combine children's cognitive enhancement with parental involvement and support (Swanson, Raab and Dunst, 2011). However, programs that provide family services targeting parents without direct access to children are usually parent-focused or home-based and include activities different from child-focused programs (Guralnick, 2001).

A family-based early intervention program intends to maximize the developmental potential of children. It reduces chronic diseases and other disabilities detected in the child (Epley, Summers and Turnbull, 2011). Active family involvement in early intervention practices that strengthen and improve the adaptation of children with developmental disabilities to live in society also increases such an effect. Early intervention helps to reduce the social exclusion case of children with developmental disabilities as well (Case-Smith, 2013).

If the family has a child with special needs, parents are supposed to take an active role in ensuring the regular participation of the child in support programs and encouraging the development of the child (Law et al., 2005). Parental training does not need to be limited to home visits, and

a child-centered early intervention approach or direct provision of a learning experience to children can be integrated into a parents-focused program. Therefore, the combination of child and parents-focused approaches enhance the developmental areas of a child (Dunst et al., 2001; Keilty, 2008).

A structure where the families of children in Turkey are continuously supported is not yet available. It has become increasingly important to establish a family-based early intervention program, in which the development of infants and children is monitored and risks are identified accordingly. Services for children with developmental disabilities should be delivered to the households and monitoring studies should be carried out respectively. Because the home environment provides important daily learning opportunities to support infants and children with developmental delay or disabilities (Rowe et al., 2009; Wolery, 2011). For example, in case of a learning disability, an early diagnosis process is of great importance. If early intervention is not performed immediately, there may be significant problems in case of delay. If the developmentally focused early intervention is performed in the home environment, the child development services provided for children with developmental disabilities should be determined, implemented, and monitored in detail as a project. Therefore, the early intervention program can be adjusted to the needs of the child and the family (Humphry and Wakeford, 2008), and the developmental needs of the child can be met without spending a significant amount of financial resources (King et al., 2009). The sooner the developmental problem in the child is recognized, the more qualified the developmental support work will have. Early intervention programs are important, especially in order to solve the problems of children who display problematic behaviors in schools (Guralnick, 2001).

It is important to identify early developmental delay risks in children and to start early intervention practices in order to eliminate the problems that may arise in the child's later developmental periods (Trivette, Dunst and Hamby, 2010). In this study, within the framework of a developmentally focused early intervention program, home-based early intervention applications were performed on a 17-month-old toddler and the effects of these practices were evaluated in terms of different demographic variables.

Method

This research was planned as a case study. Case studies are the research procedures that provide detailed information, describe what happened, how and when, what kind of changes occurred on the case, including the general situation and conditions, and present a defined and detailed picture of the relevant topic. Details on the background of the topic under discussion are presented respectively. It is a qualitative research method used for data collection (Güngör, 2018).

The purpose of putting down the study as a case report is to ensure early intervention by emphasizing the importance of the development process of the toddler in a risky situation that may cause developmental disabilities such as low birth weight and provide the basis for future studies.

Official approval was obtained from the University Ethics Committee for the research. Families referred to Konya Beyhekim State Hospital Child Development Polyclinic were given detailed information about the study, and a family with a 17-month-old boy who voluntarily agreed to participate in the procedure was included in the study. The fact that the family's home was very close to the institution where the researcher works was considered an advantage and this situation facilitated home-based practices.

Case

E.K., who was included in the study, is 17 months old and is the youngest child in a family of three siblings. The mother is a primary school graduate and does not work. The father works as a security guard in a company, he is a high school graduate. One of the older siblings is 4 years old and the other one is 7 years old, and they do not have any diagnosed developmental disabilities. The family lives in a house with a stove and a toilet facility outside the house.

The little boy was born in his regular term with a weight of only 1,450 grams. He stayed in intensive care for 26 days after birth. Sucked breast milk, E.K progressed at the 3rd percentile level from his birth on, and this

situation was disregarded by the family because it was interpreted that "his mother was like that, his siblings were also weak". When he was 15 months old, he was taken to the hospital due to symptoms of high fever and cough, and he was referred to the pediatric outpatient clinic of the hospital because of developmental retardation in his health examination. As a result of the MR and other routine medical tests of E.K., it was reported that there was the damage estimated to have occurred in the brain occipital region during the birth, and that this damage would negatively affect the psychomotor and language development of E.K. At the same time, the family was informed that his body weight was lower than the normal age period, and he was referred to the Child Development Polyclinic for developmental assessment and follow-up. After the medical diagnosis, the family was given a committee report at the hospital and recommended to go to a guidance research center (GRC). As a result of the evaluation of E.K. in GRC, he was directed to receive intensive training for psychomotor skills and language development in a rehabilitation center for special education.

On the day of starting the special education and rehabilitation center, the developmental screening tests of Denver II and The Portage Development Scale were applied to E.K., upon the approval of the rehabilitation center administrators. The family members were clarified about the status that early intervention practices would be performed within the scope of a study, and weekly activity programs; the importance of active family participation; It was said that psychomotor developmental retardation and other developmental disabilities can be strengthened. Detailed information was given to the family about both the support at the special education rehabilitation center and weekly early intervention practices of the researcher, and then the Informed Consent Form was signed properly. After the family agreed to participate, a weekly training program in terms of home visits was implemented for early intervention practices upon the institutional approval and support.

In E.K.'s developmental story; it was reported that he could not walk yet, could not stand even with help, could hold objects in his hand but could not put them in a box, could make a slight wave of his hand, did not make an effort to pick up an object from the ground, could not say any words, and had a decrease in eye contact. In the history taken from the

mother, we learned that the boy generally felt restless, that his interaction with parents was poor, and he responded with crying upon the efforts to interact with him. Detailed information was provided to the family after the developmental level was analyzed using the Denver II Developmental Screening Inventory and the Portage Development Scale. E.K also had a brachial plexus that causes a lack of movement of the left arm and due to nerve damage in the shoulder at the moment of birth. He had difficulties with gross and fine motor skills and a poor hand-eye coordination due to the inability of his left arm and hand. It was explained that personal-social and fine motor skills were seven months behind in compared with is age level, and retarded development by his age in gross motor skills and language areas. In this process, E.K. was recommended to continue the training program for 12 weeks by determining 2-3 strategies in each session in 1-hour sessions per week. At the end of the study, the Denver II Developmental Screening Inventory and the Portage Development Scale were applied to the toddler boy again, and the progress in his development was shared with the family in detail. During each home visit, the family was informed about the relevant strategy determined weekly, and the importance of the participation of the mother, father, and siblings with normal development in the process was emphasized every week.

In the first evaluation phase, we explained that the current developmental state of the child until then, he was identified to compare with his peers before starting the test in order to prevent the anxiety of the parents; they were told that this application was only a developmental test and was not related to measuring his intelligence. During the pretest application, we observed that E.K. failed completely and had a delay in the six items to the left of the age line, but when the posttest was applied, we revealed that there was no item he failed in to the left of the age line. When the posttest was applied, as a result of the Denver Developmental Screening Test applied to E.K., he became successful in all items as expected for his age. However, he could not pass three caution items (such as naming things) related to language development. One item was identified in the fine motor development domain and two in the language-cognitive development domain. When the gross motor development domain was examined, he succeeded in all items as expected for his age.

In the early interventions process, the family's home was visited every week; when the researcher could not pay a visit, a graduate student who was interested in the subject and had previously received Portage Early Childhood Parental Training Program for a few weeks, realized the visits, and the training program continued without interruption. During the family visit attended by all family members including E.K.'s aunt and grandmother, interviews based on the progress of E.K. were conducted in detail about their health expectations, how they perceived the child's situation, their anxiety, what they expected from the targeted early intervention program, and how much responsibility they would take in the weekly developmental strategies as well as the assignments they were asked to realize every week. The family was guided on correct game practices and word teaching; and then the implementation of the strategies (strategies such as grouping words, making associations, using keywords, remembering with body movements, simulating) determined on a weekly basis by the family was supported respectively (Trivette, Dunst and Hamby, 2010). The feelings of family members were asked at each home visit. Topics such as "Has there been progress in the development level of the child since last week, which subject did they have difficulties, which activities were easy" were discussed.

Weekly training strategies were planned flexibly according to the needs of E.K. and the family. During each home visiting, the mother was interviewed, the previous week was evaluated, new strategies were applied and taught to the mother, we discussed which other applications could be supported at home, and the mother was informed in detail until she found out the procedure entirely. E.K.'s father was also willing to contribute to the applications, although he could not be present in the interviews of the researcher due to the fact he was usually supposed to be away from home during working hours.

Every week, E.K. was given information about the strategy determined for, how to apply it; and then parents were asked to take relevant steps. In the following processes, we observed how the mother and father made the applications to E.K. For example, in order to support the psychomotor development of E.K., they were asked to hold a toy that could attract his attention and support him to lie it down. Tightly attached to both sides, towels were tied on his crib for the same purpose, afterwards, objects of

very different textures such as satin, velvet fabric, and plastic balls were tied on the crib accordingly. The objects he preferred were followed cautiously, making sure he could easily see and reach such objects. Then one of the objects was removed and it was replaced with a new one. E.K. was later tested with three different objects, he was observed which objects he opted for. Brightly colored objects or toys with faces were used to attract E.K.'s attention and an increase in discrimination was observed. Since it was essential that E.K, with a severe developmental disability, fulfill the planned skills every week with the help of his family every day, frequent reminders were created for the parents to perform the expected assessment skills.

As a result of the evaluation, we observed that E.K. and his parents generally needed support in their gaming and communication skills. Thus we have concluded that E.K. should be especially supported in skills that require hand-eye coordination, gross and fine motor movements, communication, and language skills. The evaluations suggest that the home environment should be regulated especially in terms of improving the psychomotor skills and self-care skills of E.K.; therefore, the family has been given practical recommendations and counseling. Within the family-centered assessment procedure, E.K. and his family's strengths, interests, family's concerns about E.K.'s development were frequently evaluated. Parents carefully listened to the instructor's suggestions. Motivation levels for the implementation of the training were high. They were treating the child with interest.

Discussion

Various early intervention programs are designed to support developmental areas for children with developmental disabilities. An example of home-centered practices that are not very common in Turkey and that are rarely implemented in some centers with limited resources has been carried out in this study.

Interacting with the children, who have developmental delay in early childhood and maintaining their care, is perceived as a traumatic crisis situation for most parents. Parents need a variety of strategies to handle such a crisis situation. After the medical diagnosis, medical applications

aiming to improve the physical health problems of a child are carried out at healthcare organizations, however parents need educational and developmental support in a child's social, emotional, language or psychomotor development process (Schulting, 2009). Home-assisted and developmentally focused early intervention programs provide support to parents in some issues such as communicating with the child, monitoring and supporting the developmental stages, as well as contributing to cognitive-language development (Raspa et al., 2010). Home-supported and developmentally focused early intervention programs can have positive effects on children's self-care, cognitive, emotional, and social behaviors, and their communication with their environment in a short time (Wolery, 2011).

In our study, we have observed that the home visiting technique enhances the knowledge of the family about interaction with their child, and being a role model for the child in establishing and continuing the game and thus significantly support the development all in all. Teachers and parents also participate in home-based developmental early intervention practices, which seems to increase the impact. Conner (2012) conducted a study on using new words, encouraging playing skills, and being a role model in reading books to children in an early intervention study in which the playing and language skills of 2-year-old children were supported respectively. The study found that there was an increase in children's receptive and expressive language skills, an increase in the child's self-confidence in symbolic gaming skills, and that motivating the family contributed significantly to the development domains of the child. In the Kindergarten Home Visit Project study, Schulting (2009) enabled teachers to visit each student's home at the beginning of their school years and provided educational support. The research has demonstrated that home visits have significant positive effects on children's studying behavior as well as the child-environment interaction.

In our study, evaluations regarding the development with the mother were made every week, and detailed information was given about the social, emotional, cognitive, language, and psychomotor development of the child. Since the mother and father were observed to have an inability to set up and continue the game when they were observed, sample activities were firstly applied by the researcher every week. We modeled

on how to change the tone and emphasis when talking to the child, how to make educational toys from waste materials at home, or how to motivate the child so that he could gain weekly strategic skills. Similarly, Karaaslan (2010) applied an interactive early intervention program to children with developmental disabilities and to their mothers. The study analyzed the developmental states of the children with the Denver Developmental Screening Test-II and the Ankara Developmental Screening Inventory and identified the interaction situations of the children and mothers in the process of pre-test post-test. Participant mothers stated that at the end of the training program, they acted consciously about how to play and what to do with their children, without any stress.

Dalmau et al. (2017) emphasize that early interventions should focus on the child, family, and the environment, but the relevant working models are still maintained with a rehabilitative approach, and they suggest a process that includes the adoption of an ecological and systemic approach to transform early intervention services.

Denver II Developmental Screening Inventory and Portage Development Scale have been used in the developmental assessment procedure of the relevant children. Portage Parent Activity Examples have also been used in the weekly-applied strategic skill training practices. Early Intervention Programs such as Portage, Keyhole, Families as Teachers, Small Steps are implemented for children who often have developmental retardation in early childhood. Birkan (2002) implemented Small Steps Early Education Program for Children with Developmental Delays, provided training to families on child evaluation and teaching planning and effective teaching skills. As in our study, the program with home visits has shown that parents are satisfied with the benefits of early intervention practices, and it is very effective to teach parents educational and developmental approaches while they are dealing with children.

Since the 15-month-old toddler included in the study was born with low birth weight, it is obvious that the developmental risks will be higher in the following years. Today, the birth frequency of low birth weight is reported to be between 10-12%. The primary causes why babies are born at low birth weight are listed as premature birth, prenatal infections, mother's lack of healthy diet, the age of the mother, the number of

pregnancies of the mother, mineral deficiencies, the continuation of pregnancy in a heavy work pace, stressful environment, and genetic reasons. Although babies with low body weight at birth constitute the most important patient group in neonatal intensive care units, they can recover rapidly within the scope of early intervention (Joseph, 2007). A low birth weight problem negatively affects the development of a baby. In early intervention practices for the babies with low birth weight, especially the mother who gives primary care to the baby should be educated and actively participated in the relevant program (Güran et al., 2013). Pregnancy checks are routinely carried out in our country, but in order to closely monitor the intrauterine development status of the fetus, it is necessary to include more child developers in preventive health services and to evaluate the developmental risks at the time of birth and during early intervention (Aytekin and Bayhan, 2016).

In this study, target skills were observed every week, the program was evaluated with the family on a weekly basis, and assessments were performed using the Denver II Developmental Screening Inventory and the Portage Development Scale before and after the implementation. A family-oriented approach covering events that are applicable at home should be expanded within the scope of early intervention practices for the children with developmental disabilities in Turkey. Emphasis should be placed on developmentally focused early intervention practices with inter-institutional cooperation and interdisciplinary coordination, and monitoring activities should be managed through a centrally controlled system.

Conclusion and Recommendations

As a result of this study, where home-based early intervention applications have been performed on a 15-month-old toddler within the framework of a developmentally focused early intervention program, the benefits of early intervention applications have been once again demonstrated transparently. Study findings are indicating that significant benefits have been provided upon the interventions that support development in the cognitive and language development during the 0-36 months period (Olusanya et al, 2018) in social development and its

interaction with the environment (Summer and Turnbull, 2011), in psychomotor skills (Humphry and Wakeford, 2008; Aytakin and Bayhan, 2016; Dalmau et al, 2017; Epley, Smythe, Adelson and Polack, 2020).

As a result of the applied developmental-oriented and home-based early intervention, there has been a noticeable increase in E.K.'s social, cognitive, self-care, and especially psychomotor development domains. We have observed that the strategic skills planned every week have been realized by the family, and there is rapid progress fulfilled in development areas, even if not yet at the same level as their peers. At the end of the applications, we determined that the toddler started to perform actions such as waving hands, transferring an object to another place, communicating by making eye contact, reacting to his name when called, being able to pay attention to the object shown, and layering the puzzles with large pieces. In addition, in the preliminary evaluations, we observed that the parents, who were insufficient about how to play games with their children and what their children could do during the developmental stages, were found to be participatory and self-confident after the early intervention applications. The siblings and parents of the involved child stated that they benefited from the program in a positive way and desired the program to continue.

In supporting the development of children, educating parents to take more responsibility is necessary to ensure interaction between families and professionals by emphasizing the importance of families, and to encourage a cooperation model based on the "expert" role of professionals serving in the field of child development, but in a way where the family is also effective. It is essential to expand early intervention practices in Turkey, in addition, relevant strategies should be secured by determining their details with laws.

In early intervention studies; it is very important to strengthen the family. Motivating the family for education strengthens early intervention efforts. There should be support in providing social, emotional and material support to the family. Social workers and family counselors who take responsibility for early intervention should also be a part of this team. To improve the developmental disabilities of the child, it is necessary to emphasize that the family is the most important part of the team, and the participation of the family is required in the decisions at every stage of the

early intervention. Individualized intervention plans prepared for families should be created according to the needs of a child and updated during the follow-up processes. It is important to systematically set forth the studies that will be carried out by professionals such as special education teachers, psychologists, audiologists as well as the experts of ergotherapy, sensory integration, developmental pediatrics, and pediatric neurology. Within the framework of ethical rules of every profession, developmentally focused and home-based early intervention practices should be performed in detail. Thus, job descriptions of the team members who will take part in the early intervention can be realized accordingly. One should ensure that early intervention studies are included in formal education curricula so as to disseminate them systematically throughout the country within the framework of a model.

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