
Health Care and Correction of Developmental Disorders in Preschool Children Attending Kindergartens

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The aim of the work was to examine the frequency of developmental and health disorders in preschool children attending kindergartens in Kaunas and elucidate the ways of solving the related problems. In 2000, information about the children's health and developmental disorders and peculiarities of rendering the correction aid was collected in 86 kindergartens of Kaunas. The study cohort comprised 11966 children aged 2–7 years. The possibilities of primary health care and rendering correction aid were estimated by analyzing the related programs and results of their implementation.

Of the study cohort, 1127 or 9.3 ± 0.3 per cent of creche age children and 10839 or 90.7 ± 0.3 per cent of nursery-school age children were attending kindergartens. An analysis showed that 26.3 ± 0.4 per cent of these children had speech and language disorders, 0.55 ± 0.07 per cent had hearing disorders, 7.17 ± 0.26 per cent – visual impairments, 18.9 ± 0.4 per cent – physical and motion disorders, 0.88 ± 0.09 per cent – mental retardation, 4.04 ± 0.15 per cent had other health disorders. Children with severe disorders attended special kindergartens. In kindergartens, the correction work is best organized for children having speech and language disorders. Of these children, 95.0 ± 0.4 per cent attended the speech therapists. A survey of the results of correction work shows that speech disorders were corrected in 35.9 ± 0.9 per cent of cases, in 31.4 ± 0.8 per cent cases a significant improvement and in 27.9 ± 0.8 per cent cases a partial improvement was achieved. Correction aid for children having visual impairments was rendered only in special kindergartens or special groups attended by children with severe diseases. Medical specialists and special pedagogues are still working with them by individual programs. Specialists of physical education are working with children having severe physical and motion disorders (child cerebral palsy, scoliosis). Kindergartens have no programs for prevention and correction of impairment posture, flat-footedness and visual impairments.

Key words: kindergartens, pre-school age children, developmental disorders, correction, prevention

INTRODUCTION

According to the data of the Lithuanian Health Care (1), the number of sick children under the age of 14 has increased: in 1997 sickness rate was 1384.5‰, in 1998 – 1591.6‰. More children have developed physical and behavioural disorders (15.6 and 18.4‰), eye and its additional organ diseases (53.9 and 61.5‰), connective tissue and skeleton-muscle diseases (20.8 and 29.0‰). According to the Natio-

nal Health annual report (2), in 1999 the sickness rate had a tendency to increase. In 1990, 730 newly registered diseases fell to 1000 children, in 1998 – twice as many, and the number of cases of the mentioned diseases increased (3). The number of children who need doctor's supervision and constant care increased; at the end of the year 1997, there were 178 such cases per 1000 (3). Investigation of the physical development and sick rate in children attending preschool institutions of seven Lithuanian towns (4) revealed rather a big number of thin children (30.2 per cent) and those who were ill with acute diseases four or more times a year (34.1 per

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cent). V. Černiuvienė (5) has discovered that in kindergartens of Kaunas among children aged 3–4 years 21.8 per cent and among those aged 6–8 years 23.8 per cent have visual disorders, in most cases long-sightedness of various degrees and long-sighted astigmatism. Rather great numbers of children of preschool age are ill in other countries, too (6, 7). The problems of children's health in the developed countries are solved in different ways: by increasing physical activity, stimulating the intercourse between parents and physicians, working with children according to individual and general programs (8–10). There are few works concerning health problems of children of preschool age in Lithuania. Inger A. M. Ljunggren (11) examined how the questions of health prophylaxis of children under 6 years of age are solved in the Klaipėda polyclinic, and she points out the somatic approach of medical staff to children's health. E. Adaškevičienė (12) and R. Dilienė (13) encourage the staff of preschool institutions to make children more active, to create favourable surroundings for health, good psychological atmosphere, to help children to overcome difficulties and to strengthen their health.

The aim of the work was to examine the occurrence of health disorders in children attending the Kaunas city pre-school institutions and to elucidate the ways problems of health care should be dealt with, as well as what is being done for correcting and preventing health disorders.

MATERIALS AND METHODS

In January 2000, information about the children's health and developmental disorders and peculiarities of rendering the correction aid was collected in 86 kindergartens of Kaunas. The information provided data on the health and developmental status of 11966 children aged 2–7 years. The possibilities of primary health care and correction aid were estimated by analyzing the distribution of specialists wor-

king in the kindergartens, programs of correction aid for children and results of the correction work. Statistical analysis was performed by the *Excel 98* program. The reliability of differences was estimated by calculating Student's distribution.

RESULTS AND DISCUSSION

According to the character of their work (see Table 1), the preschool institutions in Kaunas differed: there were 52 creche-nurseries, 4 special cCreche-nurseries, 15 nurseries, 4 special nurseries, 13 nursery schools. 1127 or 9.3 ± 0.3 per cent creche age children and 10839 or 90.7 ± 0.3 per cent nursery-school age children were attending kindergartens. Most of preschool age children were attending creche-nurseries, somewhat less were attending nursery and nursery-school institutions; 5.9 ± 0.2 per cent of nursery-school children were attending special preschool institutions, and 3.7 ± 0.2 per cent children were attending special groups in local kindergartens.

Among children attending pre-school institutions, 45.8 ± 0.5 per cent were found to have health and developmental disorders. Most frequent were speech and language disorders, physical and motion disorders, and visual impairments. As one can see in Fig. 1, every fourth child had speech and language disorder, 18.9 ± 0.4 per cent had physical and motion disorders, 7.17 ± 26 per cent had visual impairment. A few of children had hearing disorders (0.55 ± 0.26 per cent), mental retardation (0.88 ± 0.08 per cent) and other developmental and health disorders ($p < 0.05$).

Preschool children had different speech language disorders. We can see (Fig. 2) that among children having language disorders most frequent were phonemic disorders (41.2 ± 0.9 per cent, $p > 0.05$). Almost the same number of them had different levels of speech non-development (38.0 ± 0.9 per cent): every seventh child had a slight, every sixth

Table 1. Distribution of children attending preschool institutions in Kaunas

The type of institution	Number of preschool institutions		Number of children					
	absolute number	per cent	In groups of creche-nurseries		In groups of nurseries		Total	
			absolute	per cent	absolute	per cent	absolute	per cent
Creche-nurseries	52	60.5 ± 5.3	1075	8.9 ± 0.2	7114	59.5 ± 0.4	8189	68.4 ± 0.4
Special creche-nurseries	4	4.7 ± 2.2	52	0.4 ± 0.05	338	2.8 ± 0.2	390	3.2 ± 0.1
Nurseries	14	16.3 ± 4.1	–	–	1600	13.4 ± 0.3	1600	13.4 ± 0.3
Special nurseries	4	4.7 ± 2.2	–	–	319	2.7 ± 0.2	319	2.7 ± 0.1
Nursery-schools	12	13.8 ± 3.8	–	–	1468	12.3 ± 0.3	1468	12.3 ± 0.3
Total	86	100	1127	9.3 ± 0.3	10839	90.7 ± 0.3	11966	100

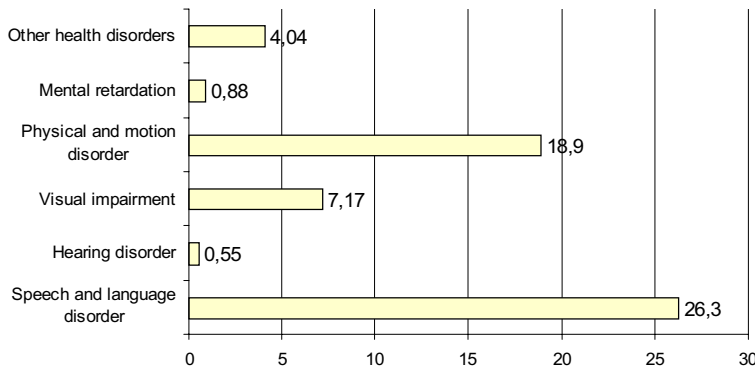


Fig. 1. Percentage of nursery age children having developmental and health disorders and attending Kaunas city training institutions

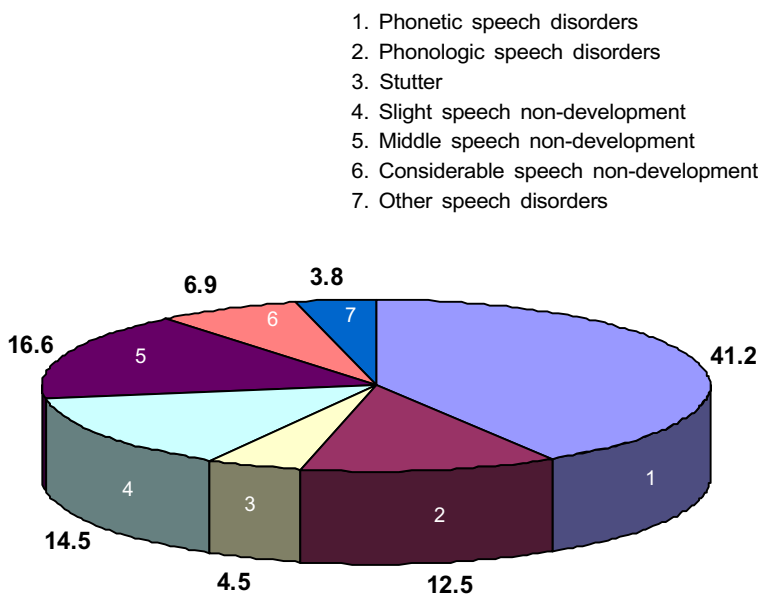


Fig. 2. Percentage of diagnoses in children having speech and language disorders and attending Kaunas preschool institutions

child milde and every twelfth child considerable speech non-development; $12.5 \pm \pm 0.6$ per cent of children had phonological disorders. There were only some who stammered and had other language disorders.

Most children having physical and moving disorders (62.3 ± 1.2 per cent, $p < 0.05$) were flat-footed. Every seventh child with physical moving disorders had X-deformation, every eighth child had anomalous carriage (see Fig. 3); 5.0 ± 0.5 per cent of children had severe physical and moving disorders: 2.4 ± 0.3 per cent had cerebral palsy, 1.6 ± 0.3 per cent had scoliosis; 1.0 ± 0.2 per cent had body part deformations (see Fig. 3).

Among visual impairments there were various types of longsightedness, simple longsightedness and astigmatism. Other refractive errors as longsighted astigmatism, nearsight and astigmatism, strobismus etc. were present in $14.1 \pm \pm 1.3$ per cent of children.

Most children having health and developmental disorders attended local kindergartens. Children with severe disorders attended special kindergartens or special groups in local kindergartens. There were about 766 such children (17.3 ± 0.3 per cent); 17.6 ± 0.8 per cent of them had speech and language disorders, 30.2 ± 1.7 per cent had visual impairments, 9.4 ± 3.3 per cent had physical and motion disorders, in $89.4 \pm \pm 3.3$ per cent mental retardation and in 4.04 ± 0.15 per cent other health disorders were found.

Teachers took care of health and education of children attending preschool institutions. They made up 87.6 ± 0.8 per cent of all the workers of preschool institutions. One teacher worked with 15.8 ± 3.8 children, in some kindergartens one teacher had from 12 to 20 children. Different kinds of specialists such as speech therapists, special teachers,

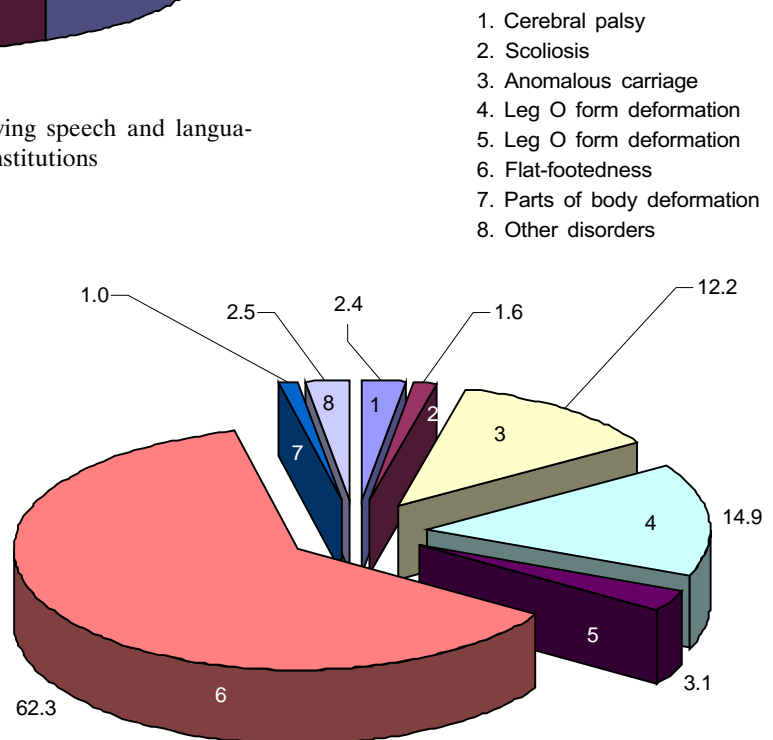


Fig. 3. Percentage of diagnoses in children having physical and movement disorders and attending Kaunas preschool institutions

psychologists, teachers of physical training and medical workers took care of preschool children having health and developmental disorders. They worked with different number of children, depending upon the kind of disorders and in some cases upon the financial possibilities. So one speech therapist in kindergartens worked with 35 children having speech and language disorders. In special kindergartens or special groups for children having more severe speech or language disorders, one speech therapist worked with 12–23 children. One teacher of physical training helped 43 ± 2.3 children having physical and motion disorders. Thirteen preschool institutions had psychologists. They worked with 42–255 children, mean 177 ± 4.4 children. Medical nurses worked in 62 preschool institutions. They took care of about 334.7 ± 3.4 children. Twelve preschool institutions had no medical nurses at all.

Our survey showed that the number of children having the same health and developmental disorders differed in different preschools. This can be said about children having visual impairments and some physical and motion disorders. They reached 0.97 to 9.8 per cent among long-sighted children in different preschool institutions; flat-footed children comprised 2.0 to 45.2 per cent. The number of children having speech and language disorders in many kindergartens was almost the same: 18.7 to 26.5 per cent. We think that the mentioned difference was connected not only with the contingent of children, but also with the lack of specialists, the competence of specialists and their work load.

The correction work for children with speech and language disorders is best organized in kindergartens. 95.0 ± 0.4 per cent of such children attend speech therapists. Speech therapists worked in special rooms with special programs for each special disorder. They worked with each child individually. A survey of the results of correction work during the 1998/1999 school year shows that speech and language disorders were corrected in 35.9 ± 0.9 per cent of cases, in 31.4 ± 0.8 per cent of cases a significant improvement and in 27.9 ± 0.8 per cent cases partial improvement was achieved, and in $4.8 \pm \pm 0.3$ per cent of cases there was no improvement; $65.3 \pm \pm 0.8$ per cent of children having speech and language disorders have stayed on continuous correction (see Fig. 4). The results attained by speech therapists show also a clearcut decrease of speech and language disorders in children seven years of age. Thus,

only 6.8 ± 0.2 per cent or 4.3 times less children with speech and language disorders attended schools in 2000.

Correction aid for 30.2 ± 1.7 per cent children having visual impairments was rendered only in special kindergartens or special groups attended by children suffering from severe diseases. Medical specialists and special pedagogues are still working with them. Special pedagogues (sight therapists) used individual programs. Not in all preschool institutions good conditions were available for working with children with visual disorders, not all of them made use of the consultations of the Kauans blind and weak-sighted training centre or implemented practice individual programs. Very often the correction of visual disorders depended only on parents' care and personal contact with physicians. We paid attention to physicians' unsilliness to inform a preschool institution of a child's visual disorder. We noticed the absence of skilled programs for visual disorder prevention, which is a problem of today to the children that belong to risk groups (premature and those who have family members with visual disorders).

Specialists of physical education (kinesitherapists, masseurs, special pedagogues) are working in kindergartens with children having physical and motion disorders. There were only 22.0 ± 4.7 per cent of such kindergartens, and specialists of physical education worked only with 47 ± 0.5 per cent of children having physical and motion disorders. These specialists work with all children having cerebral palsy, scoliosis, parts of body deformation and other severe disorders. Corrective work with children who had posture impairment and flat-footedness was done only in those institutions where the related specialists were working. Other kindergartens have no programs for the correction and prevention of posture impairment and flat-footedness, though elementary prevention programs of these disorders could be carried out by any pedagogue in a kindergarten.

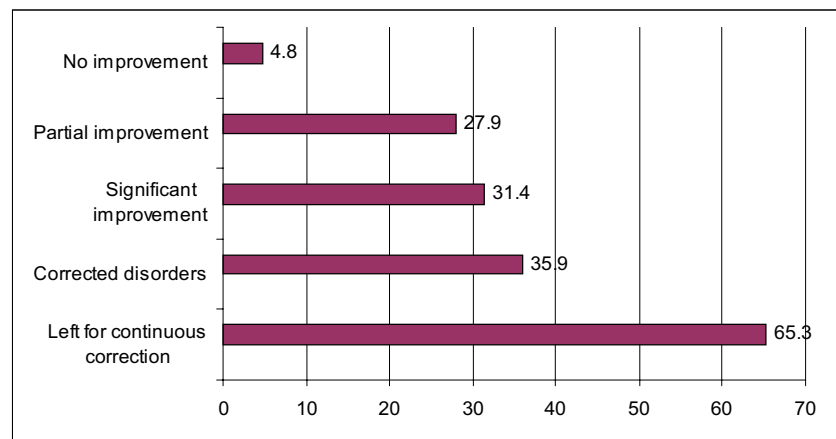


Fig. 4. Correction work results in children with speech and language disorders in Kaunas city preschool institutions, 1998/99 (per cent)

CONCLUSIONS

1. Of children attending preschool institutions, 45.8 ± 0.5 per cent had various health and developmental disorders, among which most common were speech and language as well as physical and motion disorders and visual impairment.

2. In preschool institutions, correction of speech and language disorders was well-organized; correction of visual impairment, physical and motion disorders was organized not well enough: 95.0 ± 0.4 per cent of children with speech and language disorders, 47 ± 4.7 per cent of children with physical and motion disorders and 30.2 ± 1.7 per cent of children with visual impairment received specialists' aid.

3. Not all preschool institutions had enough specialists to take care of revealing and correcting children's health and developmental disorders. Kindergartens had no programs of the prevention of visual impairment, physical and motion disorders, and no programs for correction of visual disorders, which could be carried out by pedagogues.

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IKIMOKYKLINĖS ĮSTAIGOS LANKANČIŲ VAIKŲ SVEIKATOS PRIEŽIŪRA IR VYSTYMOŠI SUTRIKIMŲ KOREKCIJA

S a n t r a u k a

Darbo tikslas – apžvelgti Kauno miesto ikimokyklinės įstaigos lankančių vaikų vystymosi ir sveikatos sutrikimų dažnį ir išsiaiškinti, kaip sprendžiami vaikų sveikatos priežiūros, vystymosi sutrikimų korekcijos klausimai. 2000 m. disponuota žiniomis apie 11 916 vaikų (nuo 2 iki 7 metų amžiaus) vystymosi ir sveikatos sutrikimus. Pirminės sveikatos priežiūros ir korekcinės pagalbos galimybės vertintos išanalizavus dirbančių specialistų pasiskirstymą ikimokyklinėse įstaigose, korekcinės pagalbos vaikams programas, korekcinio darbo rezultatus.

Nustatyta, kad ikimokyklinės įstaigos lankė 1127 , arba $9,3 \pm 0,3\%$, lopšelinio amžiaus ir $10 889$, arba $90,7 \pm 0,3\%$, darželinio amžiaus vaikų. Išanalizavus duomenis nustatyta, kad $45,8 \pm 0,5\%$ vaikų, lankančių ikimokyklinės įstaigos, turi vystymosi sutrikimų: $26,3 \pm 0,4\%$ kalbos, $0,55 \pm 0,07\%$ klausos, $7,17 \pm 0,26\%$ regos, $18,9 \pm 0,4\%$ fizinių ir judėjimo, $0,88 \pm 0,09\%$ intelekto, $4,04 \pm 0,15\%$ kitų sveikatos sutrikimų. Daugumas vystymosi ar sveikatos sutrikimus turinčių vaikų lankė ikimokyklinės įstaigos pagal gyvenamąją vietą. Didelių sutrikimų turintys vaikai lankė specialiąsias ikimokyklinės įstaigas. Ikimokyklinėse įstaigose korekcinis darbas geriausiai organizuotas vaikams, turintiems kalbos sutrikimų. Apžvelgus 1998/1999 metų korekcinio darbo rezultatus matyti, kad $35,9 \pm 0,9\%$ atvejų kalbos sutrikimai ištaisyti, $31,4 \pm 0,8\%$ kalba pagerėjo, $27,9 \pm 0,8\%$ – kalba iš dalies pagerėjo. Korekcinis darbas su $30,2 \pm 1,7\%$ regos sutrikimus turinčių vaikų buvo dirbamas tik specialiosiose ikimokyklinėse įstaigose ir specialiosiose grupėse, kurias lankė vaikai, turintys didelių regos sutrikimų. Su šiais vaikais dirbo ir medikai, ir specialieji pedagogai pagal individualias programas. Ikimokyklinėse įstaigose dirbo kūno kultūros instruktoriai. Jie korekcinę pagalbą teikė $47 \pm 0,5\%$ fizinius ir judėjimo sutrikimus turintiems vaikams. Korekcija buvo atliekama visiems vaikams, kuriems yra cerebrinis paralyžius, skoliozė, kūno dalių deformacija ir kitokie sunkūs fiziniai ir judėjimo sutrikimai. Ydinga laikysena, plokščiapėdystė buvo koreguojama tik tose įstaigose, kuriose dirbo specialistai. Šių sutrikimų prevencinių programų ikimokyklinės įstaigos neturėjo.

Raktažodžiai: ikimokyklinės įstaigos, ikimokyklinio amžiaus vaikai, vystymosi ir sveikatos sutrikimų paplitimas, korekcija ir prevencija