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THE ROLE AND USED TOOLS OF PSYCHOLOGICAL-MEDICAL-PEDAGOGICAL CONSULTATIONS IN WORK WITH AUTISM SPECTRUM DISORDER CHILDREN

Kazakhstan, like all countries, aims to implement the 17 UN Sustainable Development Goals, in particular to support and provide education to the entire population. The aim of this study is to explore the role of Psychological-medical-pedagogical consultations (PMPC) and tools used to work with autism spectrum disorder (ASD) children.

Methods: A questionnaire was developed for PMPC specialists based on 16 questions. The surveys were conducted using Google Forms. The results were analyzed using SPSS13. Additionally, an analysis was carried out to the open-ended questions that were coded to be statistically quantifiable. The thematic approach was used for qualitative data from the survey.

Results: 346 respondents from eight regions of Kazakhstan took part in the survey. The majority of survey participants noted the growth of children with ASD and associate this fact with ecology, genetics and the development of digital technologies. Six categories as: socialization, communication, cognition, behavior, self-service skills as well as laws and standards were identified for placing a child with ASD to the regular school.

A need was identified for advanced training of PMPC specialists to improve the provision of support to children with ASD and their caregivers.

Key words: Autism Spectrum Disorder, PMPC, special educational needs, inclusive education, diagnosis.

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Аутистік спектр бұзылысы бар балалармен жұмыста психологиялық-медициналық-педагогикалық консультацияның қолданылатын құралдары мен рөлі

Қазақстан, барлық елдер сияқты, БҰҰ-ның тұрақты дамуының 17 мақсатын, атап айтқанда, бүкіл халықтың білім алуын қамтамасыздандыруға және оны қолдауға тырысады. Зерттеудің мақсаты – аутистік спектр бұзылыстары бар балалармен жұмыс істеуде психологиялық-медициналық-педагогикалық кеңестердің (ПМПК) рөлін және олардың қолданатын құралдарын зерттеу болып табылады.

Әдістері: ПМПК қызметкерлері үшін 16 сұрақтан тұратын сауалнама жасалды. Сауалнама Google forms қосымшасымен жүргізілді. Нәтижелер SPSS.13 бағдарламасының көмегімен талданды. Сонымен қатар, статистикалық түрде өлшенуі үшін кодталған ашық сұрақтар бойынша талдау да жүргізілді. Тақырыптық тәсіл жоғары сапалы зерттеу деректерін алу үшін пайдаланылды.

Нәтижелер: сауалнамаға Қазақстанның сегіз аймағынан 346 респондент қатысты. Сауалнамаға қатысушылардың көпшілігі АСБ бар балалардың өсуіне назар аударады және осы фактіні қоршаған ортамен, генетикамен және цифрлық технологиялардың дамуымен байланыстырады. Алты категория анықталды: әлеуметтену, қарым-қатынас, танымдық, мінез-құлық, өз-өзіне қызмет көрсету дағдылары, сондай-ақ жалпы білім беретін мектепке АСБ бар баланы анықтауға арналған заңдар мен стандарттар.

АСБ және оларға күтім жасап жүрген адамдарға қолдау көрсету үшін ПМПК мамандарының біліктілігін арттыру қажеттілігі анықталды.

Түйін сөздер: аутистік спектр бұзылысы, ПМПК, ерекше білім беру қажеттілігі, инклюзивті білім беру, диагностика.

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Роль и используемые инструменты психолого-медико-педагогических консультаций в работе с детьми с расстройствами аутистического спектра

Казахстан, как и все страны, стремится реализовать 17 Целей устойчивого развития ООН, в частности, поддержку и обеспечение образования всему населению. Целью исследования является изучение роли психолого-медико-педагогических консультаций (ПМПК) и используемых ими инструментов в работе с детьми с расстройствами аутистического спектра (РАС).

Методы: для сотрудников ПМПК была разработана анкета, состоящая из 16 вопросов. Опрос проводился с помощью Google Forms. Результаты были проанализированы с использованием SPSS. Кроме того, был проведен анализ открытых вопросов, которые были закодированы так, чтобы их можно было статистически измерить. Тематический подход использовался для получения качественных данных опроса. Исследование одобрено локальным этическим комитетом СДУ.

Результаты. В опросе приняли участие 346 респондентов из восьми регионов Казахстана. Большинство участников опроса отмечают рост детей с РАС и связывают этот факт с экологией, генетикой и развитием цифровых технологий. Были определены шесть категорий: социализация, общение, познание, поведение, навыки самообслуживания, а также законы и стандарты для определения ребенка с РАС в общеобразовательной школе.

Выявлена потребность в повышении квалификации специалистов ПМПК для улучшения оказания поддержки детям с РАС и лицам, осуществляющих уход за ними.

Ключевые слова: расстройства аутистического спектра, ПМПК, особые образовательные потребности, инклюзивное образование, диагностика.

Introduction

Kazakhstan as other countries worldwide has adopted the 17 UN Sustainable Development Goals. The Goal 4 “Ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all” is a priority for educational organizations in the country and lays as the basis for major legal acts in educational system to provide quality education to all (UN Kazakhstan, 2022).

Historically, the active work on inclusive education has been promoted from 2011 in Kazakhstan. There is an educational organizations network, providing correctional, psychological and pedagogical support for children with Special Educational Needs (SEN). Identifying SEN is a key step in providing early interventions for children, including children with Autism Spectrum Disorder (ASD).

According to the Order of the Minister of Education and Science of the Republic of Kazakhstan No. 4, assessment of SEN can be carrying out in pre-school and secondary education organizations and

psychological-medical-pedagogical consultations (PMPCs) (MoES, 2022).

This gives an opportunity to identify the needs of children at different steps of growth and parents/caregivers of children that suspect ASD can have consultations directly from PMPC without health-care facilities direction.

So, the role of PMPC is crucial in timely provision of correctional support for children with ASD.

Unfortunately, the role and function of PMPC on the process and practices of assessment children with SEN, in particular ASD was not studied enough.

This study aimed to explore the role of PMPCs and its used tools in working with ASD children.

We tried to answer the following questions:

1. What does know PMPCs staff about ASD?
2. How they do the diagnosis and assessment and, what tools they use to diagnose, consult, define and assess educational needs of ASD children?
3. What is the main role and function of PMPCs in assessing SEN of children with ASD?

To answer these questions, we provided review on PMPCs works according to standards and laws, and conducted a survey across PMPCs staff.

Literature review

ASD

Autism Spectrum Disorder is a lifelong, neuro-developmental condition characterized by deficits in social communication and interaction, and restricted, repetitive repertoires of behavior, interests and activities (APA, 2013; Howlin et al., 2004; 2013).

Evidence-based early interventions showed positive response to early intervention including pre-treatment higher cognitive abilities expression of positive affect, decreased social avoidance, lower ASD symptom severity, younger age, higher adaptive skills, imitation, functional use of objects and goal understanding, play skills, and joint attention (Sinai-Gavrilov, 2020).

PMPC

Psychological-medical-pedagogical examination of children with ASD is carried out from birth to 18 years of age. It includes into a psychiatric examination for assess mental health, characteristics of psycho-speech development, identify mental disorders, diseases and establish the impact of mental disorders on the development, upbringing and education of the child.

Examination and consultation are carried out by: neurologist, psychiatrist, psychologist, speech therapist, special teacher, social educators and the head of the PMPCs. If necessary, other medical specialists may be involved in examination and consultation (Pather et al., 2020).

Meanwhile, Order of the Minister of Health No. 25 regulates connection between primary health facilities and PMPC. M-CHAT-R/F is recommended as highly effective tool for screening purposes for ASD both in legal acts for primary healthcare facilities and PMPC as well. Along with above-mentioned PMPCs provides consulting, assessing special educational needs (SEN) and special educational environment, identifying educational program or trajectory, defines the need and type of special psychological and pedagogical support for children with disabilities (MoES, 2022).

PMPCs determines the needs for adaptation of the curriculum/programs, methods and criteria for assessing learning outcomes and other services.

The conclusion and recommendations of the PMPC are necessary to meet the educational needs of children with ASD. The conclusion list with rec-

ommendations of the PMPC are made according to order of the Minister of Education of the Republic of Kazakhstan dated as of August 31, 2022 No. 385 (MoE, 2022) .

The main directions of PMPCs are regulated as the following:

- consulting families on issues of overcoming and preventing developmental disabilities;
- teaching and educating children with SEN;
- advisory and methodological assistance for teachers, educators, specialists of preschool and schools, educational organizations on teaching and educating children with SEN;
- monitoring and generating summary reports on children with SEN.

Moreover, PMPCs is a link between the structural organizations of the public health, social protection and educational systems. According to normative documents PMPCs also work with agencies of education, social protection, public health, public organizations for the early identification of children with special educational needs. The goal of it is providing information about educational, medical, social services.

Thus, PMPCs specialists must have highly qualified and informed skills and competencies in autism to provide quality and timely diagnostics, determine the further route of movement of children with special needs, and provide support to the entire range of stakeholders.

Materials and methods

Survey

The survey was developed on a Google form and available in two languages (Kazakh (49.7%) and Russian (50.3%)). The anonymous link was sent to participants via WhatsApp groups, staff personal emails, and PMPC's official emails.

The survey consisted of 16 questions including closed and open-ended questions (Table 1). The survey was focused on finding out the theoretical and methodological knowledge of PMPCs staff in working with ASD children. The questions were grouped into 4 areas, such as:

Background – age, gender, and region of participants;

Knowledge – what is Autism and the reason of it;

Procedure – the process of assessing and diagnosing children with SEN, developing IEP for children with ASD;

Methodological base – methods and tools used for diagnosing, and consulting children with ASD.

Survey questions are presented in Table 1.

346 participants opened and filled out the survey. However, the answers of 318 participants were taken to study, whose work at PMPC. Type of

specialist who took part in the survey are Head of PMPC; Medical specialties; Social educators; Educational psychologist; Speech therapists; Special educators (surdo-/typhlo- pedagogues).

Table 1 – Survey items

Area	Items
Knowledge	Do you think the number of children with ASD is growing?
	What are the reasons for the growth in your opinion?
Procedure	How many visits are needed to diagnose ASD in your organization?
	Who is involved in the development of an individual plan?
Methodological base	What methods do you use to diagnose children with ASD?
	Is there an established method used in working with children with ASD?
	Is there monitoring of the development dynamics of children with ASD?
	If you answered YES, then what assessment methodology do you use?
	Describe the criteria for determining a child with ASD in a general education school

Statistical analyses

SPSS 13 software was used to analyze statistical data from the survey. The open-ended questions (What are the reasons for the growth in your opinion? If you answered YES, then what assessment methodology do you use? Describe the criteria for determining a child with ASD in a general education school; Who is involved in the development of an individual plan?) were coded to be statistically quantifiable. The thematic approach was used for qualitative data from the survey.

Ethical considerations

The research study has been approved by the Local Ethical Committee of Institution “SDU University” №6 Minutes dated as of 7 March 2023.

Results

Socio-demographic characteristics

Frequency distributions of socio-demographic characteristics of specialists of working in PMPC are presented in Table 2.

346 participants from 3 cities (Astana (3.1%), Almaty (4.7%), Shymkent (6.3%)) and 5 regions (South (51.6%), West (11.3%), East (3.8%), North (9.1%), and Central (10.1%)) took part in the survey. The majority of them were female (91.2%). Almost one out of three respondents were the educational psychologists (39%), and over twenty percent (24.5%) were speech therapists, the percentage of other specialists is about and under ten (head of PMPC (9.4%); medical specialists (10.4%); special educators (8.8%).

Table 2 – Descriptive characteristics of specialists of PMPC

Characteristics of specialists	Number	Percent %
Total	318	100
Type of specialists		
Head of PMPC	30	9.4%
Medical specialists	33	10.4%
Social educators	25	7.9%
Educational psychologist	124	39%
Speech therapists	78	24.5%
Special educators (surdo/typhlo pedagogue)	28	8.8%
Gender		
Male	28	8,8%

Continuation of Table 2

Female	290	91,2%
Region		
Astana	10	3.1%
Almaty	15	4.7%
Shymkent	20	6.3%
South Kazakhstan	164	51.6%
North Kazakhstan	29	9.1%
East Kazakhstan	12	3.8%
West Kazakhstan	36	11.3%
Central Kazakhstan	32	10.1%
Age in years		
<30	49	(15,4%)
31-40	76	(23,9%)
41-50	90	(28,3%)
51-60	86	(27,0%)
≥60	17	(5,3%)

Knowledge and understanding of ASD

Data responses from the open-ended questions that asked participants about understanding the reason of ASD are shown as codes by frequency count. The majority of specialists believe that the number

of children with ASD is raising (87,1%), and the three main reasons are ecology, digital technologies and genetics. Other common responses included nutrition, vaccination, psychological-neurological disorders, and not approved factors.

Table 3 – Knowledge and Understanding ASD (survey codes count)

Focus area	Items	Fr. (N of responses)
Knowledge	Do you think that the number of children with ASD is increasing?	
	Yes	277(87,1%)
	No	41(12,9%)
	*What do you think are the reasons for the increase?	
	Ecology	88
	Digital technologies	87
	Genetics/heredity	51
	Nutrition	24
	Psychological – neurological disorders	7
	Vaccination	17
	Not approved factors	17

**Open-ended questions; ^acounts and percentages may vary because of missing values.*

The chosen of each specialist of PMPCs are shown on the table 4. Ecology was chosen by educational psychologist (42%) and speech therapists (13.6%), special educators (11.4%) mostly. Also, digital technologies were a most common answer for educational psychologist (28.7%), speech therapists (26.4%), heads of PMPCs (17.2%), medical specialists (11,5%). Third top chosen reason – ge-

netics: educational psychologist (41,2%), speech therapists (29,4%), heads of PMPCs (11,8%). The less noted reason psychological and neurological disorders was indicated only by educational psychologist (28,6%), speech therapists (42,9%), heads of PMPCs (14,3%), medical specialists (14,3%). All social educators wrote out four factors like ecology, digital technologies, genetics and nutrition.

Table 4 – Knowledge and Understanding ASD by each PMPCs specialists (survey codes count)

Item	Ecology (N=88)	Digital technologies (N=87)	Genetics/heredity (N=51)	Nutrition (N=24)	Psychological – neurological disorders (N=7)	Vaccination (N=17)	Not approved factors (N=17)
Head of PMPC	7 (8%)	15 (17.2%)	6(11,8%)	4(16,7%)	1(14,3%)	4(23,5%)	4(23,5%)
Medical specialists	5 (5.7%)	10 (11,5%)	3(5,9%)	3(12,5%)	1(14,3%)	3(17,6%)	3(17,6%)
Social educators	12 (13.6%)	7 (8%)	3 (5,9%)	4(16,7%)			
Educational psychologist	37 (42%)	25 (28.7%)	21 (41,2%)	8(33,3%)	2(28,6%)	3(17,6%)	3(17,6%)
Speech therapists	17 (19.3%)	23 (26.4%)	15(29,4%)	4(16,7%)	3(42,9%)	5(29,4%)	5(29,4%)
Special educators	10 (11.4%)	7 (8,0%)	3(5,9%)	1(4,2%)		2(11,8%)	2(11,8%)

Procedure

A half of respondents indicated that three and more visits are needed to diagnose ASD children.

PMPC specialists and parents were noted as the involved ones to develop IEP for chil-

dren with ASD. Also, psychologists, speech therapists and special educators are specialists, whose are in a team for developing educational programs for children with autism (see table 5).

Table 5 – Procedure of work with ASD children (survey codes count)

Focus area	Items	Fr. (N of responses)
Procedure	*How many visits are needed to diagnose ASD in your organization?	
	1	62 (19,5%)
	2	76 (23,9%)
	>3	180 (56,6%)
	Who is involved in the development of an individual plan?	
	PMPC specialists	75 (23,6%)
	PMPC specialists and parents	96 (30,2%)
	Other specialists	105 (33,0%)
	No answer	42 (13,2%)
	*If you choose other specialists write them	
	Psychologists	88
	Special educators	41
	Speech therapists	52

**Open-ended questions; ^acounts and percentages may vary because of missing values.*

Methodological base

In the “Methodological base” section participants were asked to indicate methods that they usually use in work with ASD children. According to their answer the most people use Psychological and pedagogical tests and surveys, observing and results of interviewing parents as an assessment tool. The specialists indicated M-

CHAT/R-F, ADOS as the most common used tools for assessment. These tools were chosen as an established method for work with ASD children as well as monitoring methods. The following tools: ABA therapy, the mix of different methods, observations and program of complex examination and counseling of children with ASD in PMPC were noted more than above mentioned tools for monitoring children development (see Table 6).

Table 6 – Methodological basis of PMPC specialists (survey codes count)

Focus area	Items	Fr. (N of responses)
Methodological base	*What methods do you use for assessing children with ASD?	
	M-CHAT-R/F	66
	ADOS	28
	ABA therapy	14
	Observation	64
	questionnaire/interview with parents	72
	Psychological and pedagogical tests and surveys	95
	Different	85
	I do not know	22
	Is there an established method used in working with children with ASD?	
	Yes	91
	No, each child is special	227
	*If yes, then what method is it?	
	M-CHAT-R/F	17
	ADOS	16
	ABA	34
	Different methods	79
	Is there monitoring of the development dynamics of children with ASD?	
	Yes	213
	No	105
	If you answered YES, then what assessment methodology do you use?	
	ADOS	3
	M-CHAT-R/F	13
	Different	68
	Observation	44
	Program of complex examination and counseling of children with ASD in PMPC	23
	Describe the criteria for determining a child with ASD in a general education school	
Socialization	83	
Communication	20	
Cognition	57	
Self-service skills	12	
Behavior	36	
Law and standards	100	

**Open-ended questions; ^acounts and percentages may vary because of missing values.*

The most common answer to question about assessment tools for all specialists was psychological and pedagogical tests and surveys. This response was indicated by Educational psychologist (34,7%), Speech therapists (24,2%), Head of PMPC (17,9%) and Medical specialists (11,6%). Questionnaire/interview with parents were noted by Educational psychologist (36,1%), Speech therapists (22,2%), Head of PMPC (13,9%) and Social educators

(11,1%) mostly. Furthermore, observation is chosen as an assessment tool for Educational psychologist (37,5%), Speech therapists (23,4%), Head of PMPC (17,2%). Educational psychologists use M-CHAT-R/F, ADOS as a tool for assessment. They wrote that different methods and tools are used for assessing ASD children.

The difference between responses of each specialists is shown in table 7.

Table 7 – Assessment tools used by each PMPCs specialists (survey codes count)

Item	M-CHAT-R/F (n=66)	ADOS (N=28)	ABA (N=14)	Observation (N=64)	questionnaire/ interview with parents (N=72)	Psychological and pedagogical tests and surveys (N=95)	Different
Head of PMPC	8(12,1%)	1(3,6%)	1(7,1%)	11(17,2%)	10(13,9%)	17(17,9%)	3(3,5%)
Medical specialists	6(9,1%)	3(10,7%)	2(14,3%)	6(9,4%)	5(6,9%)	11(11,6%)	11(12,9%)
Social educators	3(4,5%)	1(3,6%)	1(7,1%)	5(7,8%)	8(11,1%)	7(7,4%)	6(7,1%)
Educational psychologist	28(42,4%)	11(39,3%)	2(14,3%)	24(37,5%)	26(36,1%)	33(34,7%)	40(47,1%)
Speech therapists	14(21,2%)	9(32,1%)	6(42,9%)	15(23,4%)	16(22,2%)	23(24,2%)	20(23,5%)
Special educators	7(10,6%)	3(10,7%)	2(14,3%)	3(4,7%)	7(9,7%)	4(4,2%)	5(5,9%)

The criteria for determining a child with ASD in a general education school

The coded answers were grouped into following six categories:

Socialization

In this category respondents mentioned social interaction, understanding and adaptation skills to educational environment, emotionally volitional sphere, social and mental readiness of children.

Communication

Codes that related to communication are level of communicative development, speaking skills, verbal skills, understanding of spoken speech, understanding verbal instructions.

Cognition

Codes such as level of intellectual development, learning abilities, cognitive ability, understanding of school program and tasks are grouped to this category.

Behavior

Respondents noted distractibility, social-adaptive behavioral skills, ability to navigate in space, self-managing skills of children.

Self-service skills

We highlighted this category that include into codes like self-help skills, sanitary and hygienic skills, household skills, toilet skills.

Laws and standards

This category consists of codes such as readiness level of school to have a child with ASD, readiness to study by IEP and adapt a learning program, readiness of teachers to teach, availability of teaching assistants according to Laws and Standards. Each specialists wrote that they follow standards and laws.

The frequency count of each category is shown in the Table 6. The level of readiness of schools to teach children with ASD according to laws and standards, socialization, cognitive and behavioural skills of children were highlighted as the main criteria of determining them. Communication and self-service skills were included as the important criteria.

The heads of PMPCs (26%), educational psychologists and speech therapists equally (23%) as well as social educators and special educators (11%) noted that they direct children with SEN according to laws and standards.

“Based on methodological recommendations by order of the Ministry of Education and Science of the Republic of Kazakhstan dated as of May 28, 2010 “Methodological recommendation on identifying children with autism in educational organizations”- wrote educational psychologist.

Most of them mentioned that every child has a right to study at the place of residence and parents’ involvement and their choice is important in choosing an educational organizations. Moreover, they highlighted that readiness of school to study and teach of ASD children is more important.

Readiness of children to study at school also important. Specialists wrote out following:

“Children should be ready physically, mentally and socially. They should understand what school is”.

Social interaction and understanding the rules, adaptation skills as socialization are noted by educational psychologists (36.1%), speech therapists (21.7%) and head of PMPC (15.7%) more than oth-

er specialists. About importance of communication, social interaction and behavior of children in assessment their special needs specialists noted following:

“If a child has deficit of communication skills, problems in social interaction, and behavioral disorders, then he/she will be supported by a psychologist at school (together with a social educators); for child with an intellectual disability – a special

educators; for the speech disorders – a speech therapist”.

Only three professions (head of PMPC, educational psychologists and speech therapists) mentioned the importance of self-service skills.

Difference of criteria that was mentioned by each specialists is shown in Table 8.

Table 8 – Criteria for determining ASD children to mainstream school by each PMPCs specialists (survey codes count)

Item	Socialization (N=83) 71	Communication (N=20)	Cognition (N=57)	Self-service skills (N=12)	Behavior (N=36)	Law and standards (N=100)
Head of PMPC	13 (15.7%)	4 (20%)	7 (12.3%)	3 (25.0%)	4 (11.1%)	26 (26%)
Medical specialists	12 (14.5%)	1 (5.0%)	8 (14%)		6 (16.6%)	6 (6%)
Social educators	2 (2.4%)		4 (7.0%)		1 (2.7%)	11(11%)
Educational psychologist	30 (36.1%)	10 (50%)	19 (33.4%)	6 (50.0%)	12 (33.3%)	23(23%)
Speech therapists	18 (21.7%)	4 (20%)	14 (24.6%)	3 (25.0%)	9 (25%)	23 (23%)
Special educators	8 (9.6%)	1 (5.0%)	5 (8.7%)		4 (11.1%)	11 (11%)

Discussion

The aim of this study was to identify the role of PMPCs in working with ASD children, reviewing their knowledge and used tools for assessment. The network of PMPCs is based on major cities of Kazakhstan and to provide with their services the team of specialists may provide field observations and assessment for rural areas. Pather and his team for UNICEF in the report regarding mapping of role and tools of PMPC states the limited number of PMPCs per region (Pather et al., 2020). Due to this fact, the report states the long waiting list for assessment and more important is that getting a referral to organization that provide correctional activities is also very long. This puts at risk the on-time provision of early interventions.

According to the results of our research team work (research team of the project BR18574199 “Integration of children with autism spectrum disorder into the socio-educational environment based on comprehensive support: challenges and advantages”) a route for children with ASD in the

education system, starting from the diagnostic process and further provision of special educational services as part of the project was developed. The presented route was developed based on an analysis of regulations and agreed with the Ministry of Education of the Republic of Kazakhstan (see figure 1).

The route is aimed to fill the knowledge gap for stakeholders in regulations and is approved by the Ministry of Education of the Republic of Kazakhstan. This route was presented at a multisectoral meeting with the involvement of key Ministries, such as Ministry of Health, Education and Social support to strengthen the provision of care for children with ASD and their caregivers. National bodies and key specialists of the country were also involved to express their opinion and share experience to civil workers.

According to this route, we can see that the main function and role of PMPCs is supporting all members of educational system (children, parents and teachers) in planning and managing education process of each one, especially ASD children.

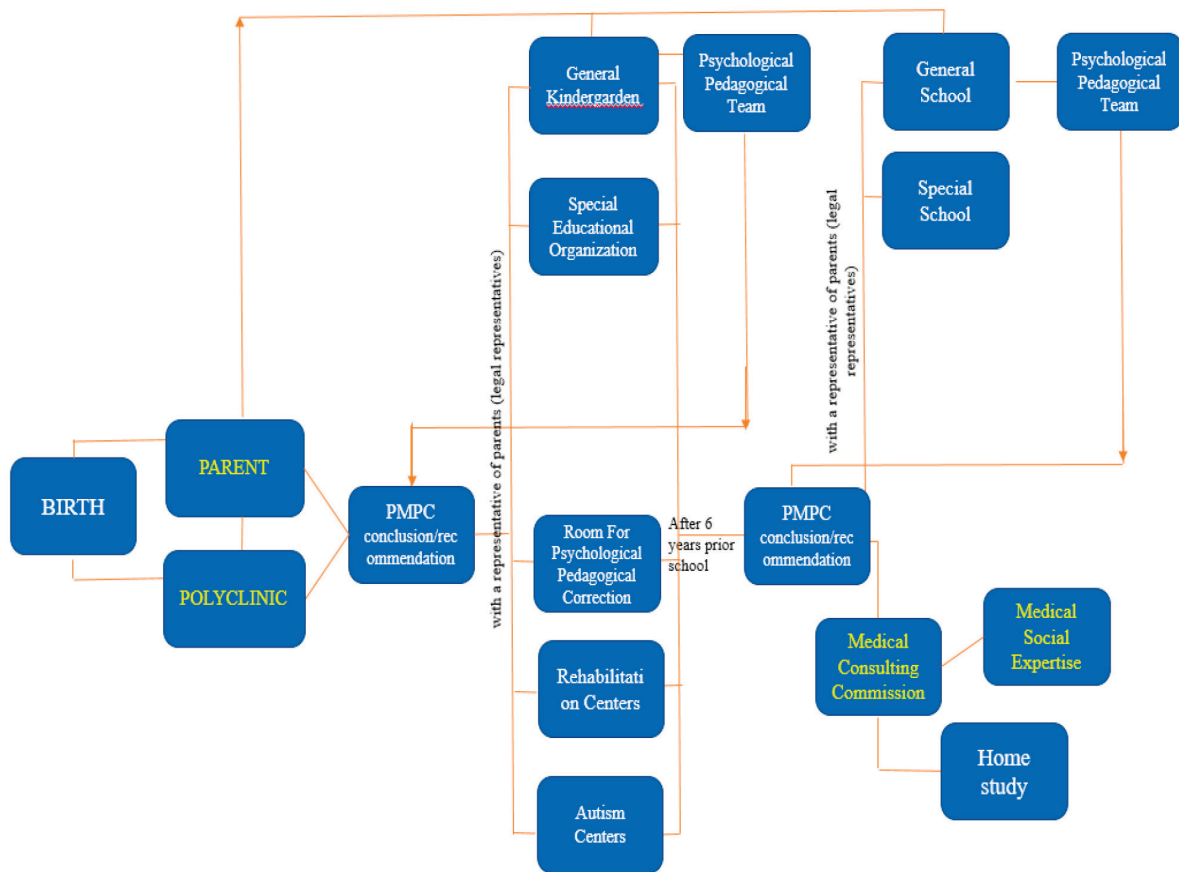


Figure 1 – Route of children with ASD in the educational system

PMPCs play important role in making diagnosis, conducting assessment, consulting, providing recommendations to teachers and parents how to provide support, choosing educational programs, and monitoring progress of children with ASD. However, in the report of Unicef, Pather and his team notes that PMPCs should be involved in monitoring the progress, but not all of them offer this service (Pather et al., 2020). The other point is that PMPCs are shown low level or limited involvement in school meeting to provide timely changes to educational program of the teachers of school.

However, according the findings from this study PMPCs specialists' knowledge about ASD are fairly disappointing. The majority of professions understand that the number of ASD children is increasing. And they mentioned factors such as ecology, digital technologies, nutrition, and vaccination as the reason of this process. The correlation between these factors and autism was not proven by evidence. For example, meta-analyses conducted by the last stud-

ies found no statistically significant association between vaccinations and the development of autism (Taylor et al., 2014).

Although some specialists of PMPCs know and use assessment tools such as M-CHAT-R/F, ADOS, the majority of them make diagnosis and assessment according to results of questionnaire/interview with parents, observing, psychological and pedagogical tests (Pather et al., 2020a; Pather et al., 2020b). The frequent answer to what resources they use respondents noted the methodological guideline of National Scientific-Practical Center for Correctional Pedagogy dates as of 2015 year, though the legislation today has undergone changes (Dzhangel'dinova and Ajtzhanova, 2015).

The insufficient use of proven technologies in the educational process has been identified in a number of studies (Gómez-Marí et al., 2021; Kisbu-Sakarya, 2021; Goldman, 2021; Larraceleta, 2022). Accordingly, Kazakhstan is witnessing the development of programs for teachers based on the best teaching methods.

Conclusion

The specialists of PMPCs who are involved in diagnosis, conducting assessment do not have enough knowledge about ASD. There is a large gap in knowledge about ASD and methodological tools in work with them among different specialists of PMPCs in Kazakhstan.

It is important to overcome misconceptions of PMPCs specialists about ASD and improve their knowledge by scientific evidence.

In conclusion, the additional training and scientifically prepared PMPCs staff working with ASD children is the best way to develop inclusive educational environment, where everyone can get

quality education (Pather et al., 2020a; Pather et al., 2020b).

The materials produced by the authors may be useful for training specialists of PMPCs in working with ASD children.

Acknowledgment

Financial support. This research was funded by the Ministry of Science and Higher Education BR18574199 “Integration of children with autism spectrum disorder into the socio-educational environment based on comprehensive support: challenges and advantages”

Conflict of interest. None

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Received 10.01.2024

Accepted 01.03.2024