Perceptions regarding autism spectrum disorders among population of Kazakhstan

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Abstract

Introduction. The increase in the number of patients with autism spectrum disorders around the world leads to the need for public of its symptoms, for early detection and comprehensive care. The increase of public health literacy allows to improve and ease perception of population, families with ASD people. The purpose of the study is to understand the population's perceptions of ASD in Kazakhstan.

Methods. A developed questionnaire in Kazakh and Russian languages was contributed among population of all regions of Kazakhstan during the first half of 2023. Survey provided using the online Google platform. 410 respondents attended the survey. Statistical analyses were performed using the SPSS13.

Results. The questionnaire was developed using simulation situations, where the respondent chose the most suitable answer. It was found that the willingness to fully accept a child with ASD is not at a high level, regardless of residence (urban, rural). Fear and curiosity were noted as a high response among the population when simulating the situation of a child with ASD on the street. Despite a high level of willingness to help families, respondents identified gaps in knowledge or methods of helping children with ASD. It is known that children with ASD, depending on the severity of the condition, can study at school along with neurotypical children. There was a reluctance among the population to attend schools with neurotypical children, develop friendships, and even live in their neighborhoods.

Conclusion

Changes in legislative acts, the development of Roadmaps for children with disabilities are only the tip of the iceberg in the formation of tolerance for people with disabilities. The creation of a host society should be a key factor in the organizations involved in shaping public opinion. Considering that this issue concerns all structures and areas, not only social programs, it is necessary to develop activities for various segments of the population on awareness and training in helping families with ASD.

Keywords: autism spectrum disorders, population, perception, Kazakhstan.

Introduction

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that affects communication skills, manifests itself in repetitive movements or behavior [1]. According to a systematic review, the median prevalence of ASD is 100/10,000 populations [2], usually males in comparison to female 3:1 [3]. ASD is influenced by both genetic and environmental factors that lead to impaired brain development [4].

The difficulty in providing timely assistance is the late diagnosis. Often parents or caregivers notice speech delay or other symptoms of ASD at a later age, thus the average age of ASD diagnosis is 3-4 years. In this regard, some countries have introduced screening programs, such as The American Academy of Pediatrics (AAP) guidelines recommend autism specific screening at 18 months and again at 24 or 30 months. There is no gold standard for the treatment of ASD, so the main method is to focus on individual approach to providing care by multidisciplinary team. The main assistance is provided by the health, social support and educational services. However, the main therapy includes behavioral and environmental changes [5].

Low awareness of ASD has been identified in a number of studies [6, 7, 8], including developed and developing countries. Subsequently, this fact leads to misconceptions about the causes of ASD, which leads to stigma and negative impact on families affected by ASD [9]. In addition, parents or caregivers with ASD are prone to psychological disorders, manifested in the form of anxiety or stress [10, 11, 12].

In Kazakhstan last reforms in ASD included changes in different areas and levels of care provision. Thus, screening tools such as M-CHART/R-F for primary care and ADOS and ADI-R for Mental health units and centers were introduced. These changes were reflected in legal acts and developed clinical protocols in health in Kazakhstan. The review of legal acts of social support showed that ASD was included in disability list in 2015 and parents/caregivers are provided by financial aid. Day-care and full-time centers that belong to social support system are providing care to families with children with disabilities based on revised Standards. Being an integral part of care for children with autism Educational system has undergone changes as well. M-CHART/R-F was included in Psychological medical pedagogical committees and screening age was changed from 3 to 0. Network of rehabilitation centers and offices of psychological and pedagogical correction as well as inclusivity in primary and secondary schools are also the part of reforms in the last 5 years. Moreover, Project financed by Ministry of Science include the development of web-site platform for different type of stakeholders, which will allow them to obtain the necessary information regarding regulations, guidelines for child care and in general about the course of ASD and other. Thus, the purpose of the study is to understand the population's perceptions of ASD in Kazakhstan.

Methods

Data collection: Based on literature review [6, 8, 13], a questionnaire was developed in Kazakh and Russian languages, which included the demographic part, as well as questions on the perception of the population about ASD (Appendix 1). The survey was conducted in the first half of 2023 using the online Google platform. The survey was sent out through primary health care workers to families with neurotypical children through WhatsApp messages by the research group of this Project. Respondents participated in the survey voluntarily,

anonymously, and had the opportunity to leave the survey any time. The survey covered all the regions of Kazakhstan.

Inclusion criteria: voluntary consent of the patient to participate in the study, age of 18 years and older, resident of Kazakhstan, patient of any gender.

Exclusion criteria: completed or partial refusal to participate in the questionnaire, age under 18 years.

Data analysis: The representative group consisted of 374 people. However, taking into account 20% of possible missing data, it was planned to include 449 respondents. As a result, after removing incomplete answers, the results of 410 respondents were included in the analysis.

The sample size of this study was based on the cross-sectional study design formula, so the sample size calculation formula is:

$$n = deff \times \frac{N \cdot \hat{p}(1 - \hat{p})}{(N - 1)\frac{d^2}{z_\propto^2} + \hat{p}(1 - \hat{p})}$$

Where
n= sample size
N= 19 832 737 (population size)
Deff=1 (design effect-random sampling)
$\hat{p}$ =0,5 (the estimated proportion – such studies have not been conducted in Kazakhstan, so we chose 50% of the population know about ASD)
d= 0.05 (desired absolute precision or absolute level of precision)
$z_\propto$ =1,96 (z-score)

We compare data between urban and rural residents to understand the preference activity based on regional perspectives. Statistical analyses were performed using the SPSS13, where a descriptive analysis was performed and variables were tested using a chi-square test. Statistical significance was determined by p-values <0.05.

Results

The survey involved 410 participants, in which female respondents presented more in urban areas, aged 25-44 years. Demographics characteristics of the participants are given in the Table 1.

Table 1   Demographics characteristics of the participants

Characteristics		Total (n=410; %)	Urban (n=310; %)	Rural (n=100; %)
Gender	Male	114(27,8%)	64(20,6%)	50(50,0%)
	Female	296(72,2%)	246(79,4%)	50(50,0%)
Age group	18-24	52(12,7%)	44(14,2%)	8(8,0%)
	25-34	123(30,0%)	103(33,2%)	20(20,0%)
	35-44	126(30,7%)	101(32,6%)	25(25,0%)
	45-54	62(15,1%)	41(13,2%)	21(21,0%)
	55-64	26(6,3%)	14(4,5%)	12(12,0%)
	65-74	16(3,9%)	5(1,6%)	11(11,0%)
	75 years and older	5(1,2%)	2(0,6%)	3(3,0%)
Level of education	High	256(62,4%)	217(70,0%)	39(39,0%)
	College	89(21,7%)	62(20,0%)	27(27,0%)
	School	48(11,7%)	20(6,5%)	28(28,0%)
	Unfinished school	17(4,1%)	11(3,5%)	6(6,0%)
Occupation	Employed (full-time, part-time, self-employed	251(61,2%)	204(65,8%)	47(47,0%)
	Unemployed	32(7,8%)	22(7,1%)	10(10,0%)
	Pensioner	32(7,8%)	12(3,9%)	20(20,0%)
	Student	39(9,5%)	27(8,7%)	12(12,0%)
	Housewife	56(13,7%)	45(14,5%)	11(11,0%)

Slightly more than a third of the population participating in the survey noted that there were no acquaintances with ASD, while the rest said that they knew less than 5 people with ASD. About 13.2% of the respondents noted their acquaintance with more than 5 people with ASD, most likely, these are the respondents, who are in the group of parents of children with ASD, and 12.7% of the survey participants indicated that they were not sure. There no significant differences between urban and rural respondents (p=0,702, Figure 1).
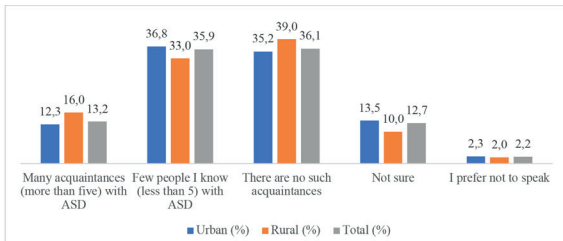

Figure 1 - The number of people with ASD in the respondent's environment

In order to understand the perception of people with ASD, a task was given, with questions where the respondent had to present the situation and give probable reflection. Tasks were adapted from the life of an autistic children. For instance, when the child is with his mother somewhere on the street or in a store, and suddenly there is a noise, to which the child begins to react through plugging ears, falling to the floor, and other similar types of behavior. In this situation, the greater number of rural respondents compared with urban noted that they would extremely likely feel frightened (p=0,004), curious (p=0,001), threat (p<0,001) and very likely embarrassed (p=0,003), Irritability (p=0,002), Surprise (p=0,002, Table 2).

The largest number of respondents in both regions noted the probability that the child is special (p<0.001). However, more rural residents note that the child looks dangerous than urban (40.3%) (p<0.001). On the positive side, the population believes that the child may be upset and ready to help (p=0,131), and ready to offer help to mother and/or child (p=0.001). However, the most respondents of both regions would have no idea what to do (p<0.001), which means they do not know how can they help. Almost twice as many rural as urban residents believe that the child is like most other children of that age (p=0.003) and that the child is likely to be spoiled and his/her parent allows the child to get away with bad behavior (p= 0.001, Table 1). If the respondents would had been told that in the presented situation the child is with autism, then 41.2% would not change their attitude to the situation, while a third of 29.8% were not sure what their behavior would be and 21.5% would change their views on this situation (Table 2).

If a close friend's child is diagnosed with autism 76.1% will feel anxious, only 31.7%, curious to know more (p=0.066) and ready to help for him 66.8%. Pity for the child (p=0.007) and would feel sorry for a friend (p=0.002) will feel half of the respondents (Table 2). Rural residents note great concern if a

Table 2		Respondents' perception with ASD child situation.			
Questions		Total (n=410,%)	Urban (n=310,%)	Rural (n=100,%)	p-value
Frightened	Extremely likely	149(36,3%)	99(31,9%)	50(50,0%)	0,004
	Very likely	86(21,0%)	65(21,0%)	21(21,0%)	
	More likely	71(17,3%)	57(18,4%)	14(14,0%)	
	Hardly	79(19,3%)	71(22,9%)	8(8,0%)	
	Not sure	19(4,6%)	13(4,2%)	6(6,0%)	
	I prefer not to speak	6(1,5%)	5(1,6%)	1(1,0%)	
Embarrassment	Extremely likely	80(19,5%)	56(18,1%)	24(24,0%)	0,003
	Very likely	114(27,8%)	76(24,5%)	38(38,0%)	
	More likely	70(17,1%)	57(18,4%)	13(13,0%)	
	Hardly	108(26,3%)	91(29,4%)	17(17,0%)	
	Not sure	31(7,6%)	27(8,7%)	4(4,0%)	
	I prefer not to speak	7(1,7%)	3(1,0%)	4(4,0%)	
Curiosity	Extremely likely	130(31,7%)	83(26,8%)	47(47,0%)	0,001
	Very likely	55(13,4%)	38(12,3%)	17(17,0%)	
	More likely	83(20,2%)	68(21,9%)	15(15,0%)	
	Hardly	96(23,4%)	84(27,1%)	12(12,0%)	
	Not sure	38(9,3%)	31(10,0%)	7(7,0%)	
	I prefer not to speak	8(2,0%)	6(1,9%)	2(2,0%)	
Irritability	Extremely likely	101(24,6%)	77(24,8%)	24(24,0%)	0,002
	Very likely	105(25,6%)	65(21,0%)	40(40,0%)	
	More likely	49(12,0%)	36(11,6%)	13(13,0%)	
	Hardly	105(25,6%)	91(29,4%)	14(14,0%)	
	Not sure	42(10,2%)	35(11,3%)	7(7,0%)	
	I prefer not to speak	8(2,0%)	6(1,9%)	2(2,0%)	
Surprise	Extremely likely	86(21,0%)	62(20,0%)	24(24,0%)	0,002
	Very likely	114(27,8%)	74(23,9%)	40(40,0%)	
	More likely	69(16,8%)	54(17,4%)	15(15,0%)	
	Hardly	95(23,2%)	84(27,1%)	11(11,0%)	
	Not sure	36(8,8%)	30(9,7%)	6(6,0%)	
	I prefer not to speak	10(2,4%)	6(1,9%)	4(4,0%)	
Threat	Extremely likely	134(32,7%)	86(27,7%)	48(48,0%)	<0,001
	Very likely	53(12,9%)	39(12,6%)	14(14,0%)	
	More likely	57(13,9%)	41(13,2%)	16(16,0%)	
	Hardly	118(28,8%)	106(34,2%)	12(12,0%)	
	Not sure	34(8,3%)	29(9,4%)	5(5,0%)	
	I prefer not to speak	14(3,4%)	9(2,9%)	5(5,0%)	
What do you think about the child					
Child seems to be a special	Extremely likely	124(30,2%)	77(24,8%)	47(47,0%)	<0,001
	Very likely	157(38,3%)	119(38,4%)	38(38,0%)	
	More likely	97(23,7%)	85(27,4%)	12(12,0%)	
	Hardly	15(3,7%)	15(4,8%)		
	Not sure	12(2,9%)	10(3,2%)	2(2,0%)	
	I prefer not to speak	5(1,2%)	4(1,3%)	1(1,0%)	
Child looks dangerous	Extremely likely	100(24,4%)	67(21,6%)	33(33,0%)	<0,001
	Very likely	83(20,2%)	46(14,8%)	37(37,0%)	
	More likely	48(11,7%)	40(12,9%)	8(8,0%)	
	Hardly	137(33,4%)	125(40,3%)	12(12,0%)	
	Not sure	33(8,0%)	25(8,1%)	8(8,0%)	
	I prefer not to speak	9(2,2%)	7(2,3%)	2(2,0%)	
The child is upset and would like to help	Extremely likely	99(24,1%)	67(21,6%)	32(32,0%)	0,131
	Very likely	114(27,8%)	82(26,5%)	32(32,0%)	
	More likely	130(31,7%)	106(34,2%)	24(24,0%)	
	Hardly	34(8,3%)	27(8,7%)	7(7,0%)	
	Not sure	27(6,6%)	23(7,4%)	4(4,0%)	
	I prefer not to speak	6(1,5%)	5(1,6%)	1(1,0%)	
The child is similar to most other children of this age	Extremely likely	85(20,7%)	54(17,4%)	31(31,0%)	0,003
	Very likely	114(27,8%)	79(25,5%)	35(35,0%)	
	More likely	87(21,2%)	71(22,9%)	16(16,0%)	
	Hardly	80(19,5%)	69(22,3%)	11(11,0%)	
	Not sure	36(8,8%)	31(10,0%)	5(5,0%)	
	I prefer not to speak	8(2,0%)	6(1,9%)	2(2,0%)	
The child is spoiled and his/her parent allows the child to get away the punishment with bad behavior	Extremely likely	118(28,8%)	84(27,1%)	34(34,0%)	0,001
	Very likely	79(19,3%)	49(15,8%)	30(30,0%)	
	More likely	56(13,7%)	42(13,5%)	14(14,0%)	
	Hardly	100(24,4%)	89(28,7%)	11(11,0%)	
	Not sure	46(11,2%)	38(12,3%)	8(8,0%)	
	I prefer not to speak	11(2,7%)	8(2,6%)	3(3,0%)	
I have no idea what to do	Extremely likely	87(21,2%)	54(17,4%)	33(33,0%)	<0,001
	Very likely	109(26,6%)	73(23,5%)	36(36,0%)	
	More likely	97(23,7%)	82(26,5%)	15(15,0%)	
	Hardly	47(11,5%)	43(13,9%)	4(4,0%)	
	Not sure	40(9,8%)	34(11,0%)	6(6,0%)	
	I prefer not to speak	30(7,3%)	24(7,7%)	6(6,0%)	
Offer help to mother and/or child	Extremely likely	84(20,5%)	55(17,7%)	29(29,0%)	0,001
	Very likely	119(29,0%)	80(25,8%)	39(39,0%)	
	More likely	133(32,4%)	110(35,5%)	23(23,0%)	
	Hardly	41(10,0%)	38(12,3%)	3(3,0%)	
	Not sure	28(6,8%)	24(7,7%)	4(4,0%)	
	I prefer not to speak	5(1,2%)	3(1,0%)	2(2,0%)	
After this situation, if the respondent is informed that the child had autism, then the probability of changing the initial reaction to the situation	Yes	88(21,5%)	75(24,2%)	13(13,0%)	0,001
	No	169(41,2%)	136(43,9%)	33(33,0%)	
	Not sure	122(29,8%)	82(26,5%)	40(40,0%)	
	Prefer not to say	31(7,6%)	17(5,5%)	14(14,0%)	

child with autism lives in the neighborhood (74.0%), and if a child with autism studies along with neurotypical children 68.0% (p<0.001), as well as if a child becomes friends with an autistic child 73.0 %, and be his best friend 66,0% (Table 3).

Table 3		Respondents reflection with ASD child			
If a close friend's child is diagnosed with autism, how would you react?		Total (n=410,%)	Urban (n=310,%)	Rural (n=100,%)	P value
Worry about the child's future	Yes	312(76,1%)	244(78,7%)	68(68,0%)	<0,001
	No	54(13,2%)	28(9,0%)	26(26,0%)	
	not sure	44(10,7%)	38(12,3%)	6(6,0%)	
Curious to know more	Yes	130(31,7%)	96(31,0%)	34(34,0%)	0,066
	No	170(41,5%)	122(39,4%)	48(48,0%)	
	not sure	110(26,8%)	92(29,7%)	18(18,0%)	
Indifferent	Yes	82(20,0%)	52(16,8%)	30(30,0%)	0,008
	No	229(55,9%)	176(56,8%)	53(53,0%)	
	not sure	99(24,1%)	82(26,5%)	17(17,0%)	
Pity for the child	Yes	199(48,5%)	148(47,7%)	51(51,0%)	0,007
	No	127(31,0%)	88(28,4%)	39(39,0%)	
	not sure	84(20,5%)	74(23,9%)	10(10,0%)	
Would feel sorry for a friend (p=0.002)	Yes	213(52,0%)	165(53,2%)	48(48,0%)	0,002
	No	113(27,6%)	73(23,5%)	40(40,0%)	
	not sure	84(20,5%)	72(23,2%)	12(12,0%)	
Wouldn't know what to do (p=0.015)	Yes	175(42,7%)	124(40,0%)	51(51,0%)	0,015
	No	124(30,2%)	91(29,4%)	33(33,0%)	
	not sure	111(27,1%)	95(30,6%)	16(16,0%)	
Embarrassment (p=0.023)	Yes	135(32,9%)	93(30,0%)	42(42,0%)	0,023
	No	158(38,5%)	119(38,4%)	39(39,0%)	
	not sure	117(28,5%)	98(31,6%)	19(19,0%)	
Proud that my friend is looking for a diagnosis (p<0.001)	Yes	199(48,5%)	143(46,1%)	56(56,0%)	<0,001
	No	110(26,8%)	76(24,5%)	34(34,0%)	
	not sure	101(24,6%)	91(29,4%)	10(10,0%)	
Ask how I can help them	Yes	274(66,8%)	221(71,3%)	53(53,0%)	<0,001
	No	84(20,5%)	51(16,5%)	33(33,0%)	
	not sure	52(12,7%)	38(12,3%)	14(14,0%)	
The family, in which the autistic child was born, moved to a neighboring house	Very concerned	83(20,2%)	48(15,5%)	35(35,0%)	<0,001
	Concerned	111(27,1%)	72(23,2%)	39(39,0%)	
	Indifference	113(27,6%)	100(32,3%)	13(13,0%)	
	Very indifferent	31(7,6%)	27(8,7%)	4(4,0%)	
	Not sure	53(12,9%)	47(15,2%)	6(6,0%)	
	I prefer not to speak	19(4,6%)	16(5,2%)	3(3,0%)	
The autistic child was in class with a child from your family	Very concerned	37(9,0%)	11(3,5%)	26(26,0%)	<0,001
	Concerned	151(36,8%)	109(35,2%)	42(42,0%)	
	Indifference	107(26,1%)	92(29,7%)	15(15,0%)	
	Very indifferent	57(13,9%)	47(15,2%)	10(10,0%)	
	Not sure	42(10,2%)	38(12,3%)	4(4,0%)	
	I prefer not to speak	16(3,9%)	13(4,2%)	3(3,0%)	
A child in your family befriended a autistic child	Very concerned	63(15,4%)	38(12,3%)	25(25,0%)	<0,001
	Concerned	135(32,9%)	87(28,1%)	48(48,0%)	
	Indifference	109(26,6%)	95(30,6%)	14(14,0%)	
	Very indifferent	46(11,2%)	40(12,9%)	6(6,0%)	
	Not sure	39(9,5%)	35(11,3%)	4(4,0%)	
	I prefer not to speak	18(4,4%)	15(4,8%)	3(3,0%)	
Your child's new best friend was autistic	Very concerned	49(12,0%)	22(7,1%)	27(27,0%)	<0,001
	Concerned	143(34,9%)	102(32,9%)	41(41,0%)	
	Indifference	112(27,3%)	95(30,6%)	17(17,0%)	
	Very indifferent	45(11,0%)	39(12,6%)	6(6,0%)	
	Not sure	42(10,2%)	36(11,6%)	6(6,0%)	
	I prefer not to speak	19(4,6%)	16(5,2%)	3(3,0%)	

Discussion

Based on the answers of the respondents, it can be seen that many of them have heard about ASD and many of them are familiar with ASD. Many respondents, in particular in rural areas, note that the behavior of a child with autism can be dangerous. This result is consistent with other similar studies [13, 14, 15]. Despite the fact that many respondents are ready to help parents of children with ASD, there is low awareness of how to do this. The low awareness of population about ASD and their needs in education and other activities indicated in researches provided by Anwar et al., Alsehemi et al., Wei et al. [6, 8, 16]. In addition to the population, limited knowledge and self-efficacy in working with autistic people is noted among health care and social service professionals [17].

Children with ASD, depending on the severity of the condition, can study at school along with neurotypical children. The results of the study showed that parents prefer to send their children in a regular classroom, but the main factor is directed to the learning experience and skills of the teachers [18, 19]. In this regard, the early detection of children with ASD and their adaptation to society is important [20]. For example, Roula Choueiri et al. presented strategies for healthcare professionals to find culturally appropriate ways to address family problems associated with ASD and ensure early identification of children with ASD [21]. The reforms carried out in the educational sector in Kazakhstan allow children with ASD to study in inclusive classes. The introduction of teacher-assistant and psychological-pedagogical support service supposes the improvement of the educational skills of children with ASD in schools. The above-mentioned events are the steps to develop the inclusive society. However, our results show that the society is not sufficiently prepared for the contact of neurotypical children with children with ASD, especially in rural areas.

For the effective implementation of programs (health, education and social services) in providing complex support to children with ASD in the country, it is necessary to take measures to improve public awareness of ASD, as well as their behavior in relation to the perception of families with children with ASD. According to the authors, educational activities can be provided through primary health care (by early symptoms of the disease for families of planning children), through educational organizations (at parent-teacher meetings of schools) and through local executive bodies.

In the world practice (The All Party Parliamentary Group on Autism report 2017) teachers and leaders are called to consider autism as a difference, not a deficit. Institutions are to conduct peer education and raise awareness by celebrating Autism Awareness Week and focus on embracing difference and see it in positive light, which increases public awareness and acceptance of children with ASD.

Conclusion

Families with children with ASD go through different steps when receiving assistance from various agencies, public and private. Society is an integral part of the life of children with ASD, and early socialization is the key to their successful immersion in society. The

ASD perception and level of understanding of the population is a key factor in the readiness to accept people with ASD, which should be an indicator of the activities of structures that form public opinion. It is necessary to consider the inclusion of information and educational activities about autism at the level of local executive bodies, continuous monitoring of the level of acceptance by society of persons with disabilities. Various channels for shaping public opinion such as the use of the media, social media, direct learning and campaigns need to be included in the action plans of the entities.

Appendix 1.

Questionnaire to population perception of children with ASD
Dear respondent!

We invite you to take part in the study on "Integration of children with autism spectrum disorder into the socio-educational environment based on comprehensive support: challenges and advantages". The purpose of our survey is to examine public awareness of autism spectrum disorders. The project is carried out by the research group of Institution "SDU University". Participation in the survey will take approximately 30 minutes. This survey is devoted to study the public opinion. There are no right or wrong answers. Participation in the survey is completely voluntary. The study was approved by the local ethics committee.

If you would like more information about the project, please contact Lead Researcher – Lyazzat through +7 705 120 4652. Your responses will be de-identified and stored under data protection requirements and will not be disclosed to other organizations for marketing or research purposes. Responses from everyone participating in the survey will be combined for analysis. Consent form: click the "Agree" button to confirm: your voluntary participation and you are over 18 years old.

You can end your participation at any stage of the survey

Please, choose the appropriate answer:
1. Sex
a) Male
b) Female
2. Your age
a) 18-24
b) 25-34

c) 35-44
d) 45-54
e) 55-64
f) 65-74
g) 75 age and above
3. Choose your region
a) Astana city
b) Almaty city
c) Akmola oblast
d) Aktobe oblast
e) Almaty oblast
f) Atyrau oblast
g) West-Kazakhstan oblast
h) Zhambyl oblast
i) Karaganda oblast
j) Kostanai oblast
k) Kyzylorda oblast
l) Mangystau oblast
m) Turkestan oblast
n) Pavlodar oblast
o) North-Kazakhstan oblast
p) West-Kazakhstan oblast
q) Shymkent city
r) Abai oblast
s) Zhetysu oblast
t) Ulytau oblast
4. Residence type:
a) City
b) Rayon level
5. Degree of education
a) University degree
b) Secondary-specialty degree (college, etc.)
c) High school (grade 11 completed)
d) Secondary school (grade 9 completed)
6. Your activities
a) Employed (full-time, part-time, self-employed)
b) Unemployed
c) Retired
d) Student
e) Housewife
f) Other (please, specify) _____

7. Do you know anyone who diagnosed with autism (or autism spectrum disorder)?
a. Me/myself
b. Close relative
c. Another family member
d. Friend
e. Familiar one
f. Colleague
g. Somebody else _____
h. No such acquaintances
i. Prefer not to speak

8. Do you think there are many children or adults with autism (or autism spectrum disorder), would you say that you have...?
a. Many people I know (more than five) with autism or autism spectrum disorder
b. Few acquaintances (less than 5) with autism or autism spectrum disorder
c. No such acquaintances
d. Not sure
e. Prefer not to speak

9. Now we will ask you to imagine yourself in the following situation

You are shopping for a new TV at a hardware store and notice at the end of the corridor a mother with a boy/girl who is around 12 years old. The boy/girl seems slightly worried, and <his/her> mother continues to speak to <him/her> in a soothing tone. Suddenly, a demonstration of a vacuum cleaner begins near the mother and child, and <boy/girl> reacts to the noise by covering <his/her> ears, falling to the floor, squealing uncontrollably and rocking back and forth. The salesman rushes to the mother and child to ask what's wrong, which further upsets <boy/girl> and <he/she> starts hitting <himself>.

9.1 People may experience different thoughts and emotions when they find themselves in such a situation. If you were in this situation, how likely is it that you would feel...?

	Extremely likely	Very likely	More likely	Hardly	Not sure	I prefer not to talk
Frightened						
Confusion						
Curiosity						
Irritation						
Sympathy						
Astonishment						
Threat						

9.2 You are still thinking about the situation...How likely is it that you think...?

	Extremely likely	Very likely	More likely	Hardly	Not sure	I prefer not to talk
<boy/girl> seems like an interesting child						
<boy/girl> looks dangerous						
<boy/girl> is upset and I would like to help						
<boy/girl> looks like most other boys [girls] this age						
boy/girl> is spoiled and his/her parent allows the child to get away with bad behavior						
I have no idea what to do						

9.3 You are still thinking about the situation...How likely is it that you think...?

	Extremely likely	Very likely	More likely	Hardly	Not sure	I prefer not to talk
Smile mother						
Comment on another customer's behavior						
Offer help to mother and/or child						
Leave the store quickly						
Focus on studying the assortment of televisions on display and pretend not to notice						
Invite mom to bring water						
Complain about the store staff						

9.4. Why do you think <boy/girl> behaved this way?

	Extremely likely	Very likely	More likely	Hardly	Not sure	I prefer not to talk
<he/she> acted like most other <boys/girls> of that age						
<He/She> has anxiety disorder						
<He/She> suffers from Attention Deficit Hyperactivity Disorder (ADHD)						
<He/she> suffers from obsessive-compulsive disorder (OCD)						
<He/She> has a mental retardation						
<He/She> has schizophrenia						
Not sure						
Prefer not to speak						

10. Imagine that a close friend's child is diagnosed with autism...Which of the following, if any, do you think BEST describes your initial reaction? If one of your close friend's children has already been diagnosed with autism, please think about what your initial reaction was when you were told about it.

	Yes	No	Not sure
Concern for the child's future			
Curious to know more			
Disinterest			
Pity for the child			
I would feel sorry for my friend			
Wouldn't know what to do			
Embarrassment			
Proud of my friend seeking a diagnosis			
Ask how I can help them			

11. If one of your colleagues has already been diagnosed with autism, please describe your initial reaction when you were told this

a. Disbelief

b. Anxiety

c. Try to learn more about autism

d. Ask them (i.e. a colleague) about autism

e. Avoid them

f. I expect that I will receive autism training in my workplace.

g. I'm proud of them

h. Ask how I can help them

i. Other (SPECIFY)

j. None of the above

k. Not sure

l. I prefer not to talk

12. And, thinking about an autistic child, would you be concerned or not concerned if...

	Very concerned	Concerned	Indifference	Very indifferent	Unsure	Prefer not to say
A family with an autistic child moved into a neighboring house						
The autistic child was in a class with a child from your family						
A child from your family has become friends with an autistic child						
Your child's new best friend was autistic						

Thank you for participation!

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