

Chapter 11

Parents' knowledge and awareness of development and care in the case of postural defects in children

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Abstract

Introduction: Healthy child development is vital for their future. Neglecting care can harm development and physical health. Parental awareness and early detection of abnormalities can prevent later issues. Our study aims to assess parental knowledge of childcare, development, and posture defects, considering factors such as education, residence, parental age and attendance at antenatal classes.

Material and Methods: We used a self-administered questionnaire with demographic questions, questions that assessed knowledge, and questions about parents' childcare practices, involving 190 participants.

Results: Our research reveals insufficient parental knowledge of child development and care, with only 25.3% showing a high level of understanding and 30% showing the lowest. In childcare knowledge, 44.7% had a high level, while 33.2% had the lowest. In terms of causes of posture defect, 81.6% attributed them to incorrect posture.

Conclusions: Continuous education and the promotion of antenatal schools are essential in preparing parents to conscientiously and safely support their child's proper development.

Key words: childcare, parental awareness, child development

Introduction

Understanding child development allows us to monitor whether a child's development is progressing correctly. In the case of any deviations from the norm, it is essential to consult a specialist and obtain appropriate support. Parental education is a critical factor that helps parents prepare for pregnancy, monitor prenatal development, and support their growing child both before and after birth [1]. Having knowledge about infant care, changing nappies, carrying methods, or even changing their position during the day is incredibly important. Incorrectly performing these activities can negatively affect a child's health and disrupt the mechanics of hip and shoulder joints. As the child grows, there are many changes in the musculoskeletal system. This can lead to the development of postural problems, which, if detected in the early stages, can be corrected [2].

Normal motor development in a child is the ability to perform various activities that enable gradual independence in daily life. Developmental disorders can be noticed both before birth and in the first few months of life. Deviations from the norm can manifest as a lack of age-appropriate skills or improper movement execution. Incorrect responses to stimuli or the absence of expected reactions are also signs of a developmental issue [3]. Stimulating a child is an essential factor in shaping a child's motor skills. Several caregiving activities that an infant undergoes affect their development. These include carrying methods, bathing, changing nappies,

the way they are lifted, fed, and the positions they are placed in. Every parent may have a different way of carrying their child. However, it is essential to ensure that the positions a child assumes during these activities are appropriate for their developmental stage. It is crucial to distribute the weight evenly. During carrying, one should avoid positions that allow the child to lean too far backwards. The hip joints should be externally rotated, abducted, and slightly flexed. The child's head should be in line with their torso, and their upper limbs should be close to the front of the chest. In the newborn and early infancy periods, the child should be kept in a horizontal position, gradually transitioning to an upright position as their head control improves. The positions and method of lifting the infant have a significant impact on their motor development. For proper development, it is recommended to change the child's position and stimulate them from both the right and left sides. This helps maintain symmetry in movements and learn proper weight transfer. Varying the child's orientation relative to the source of light, the sound of the mother, and toys is also essential. During sleep, parents should ensure different positions such as lying on the back, stomach, and sides. Nappies should be changed carefully to correctly align the child's hip joints and avoid improper movements. Lifting and the dressing process should be performed with care for the child's shoulder joints. It is advisable to turn the child on their sides to maintain symmetry and prevent the risk of injury. When dressing the child, parents should not force them but dress them gently. Ensuring the proper position and caregiving techniques is crucial for a child's proper development [4,5].

Body posture is a personal characteristic that changes over time and is related to well-being. Correct posture ensures stability, smooth movements, and the absence of pain. It is evaluated on the basis of the curves of the spine, head positioning, pelvis, legs, and feet, as well as the chest. Postural problems in children result from various musculoskeletal disorders and are visible when standing. Screening examinations have revealed that one of the most common health problems in children is postural abnormalities. These problems are influenced by environmental factors such as a sedentary lifestyle, lack of physical activity, and heavy backpacks [6-9].

Due to its supportive function, the human spine allows an upright body posture to be maintained. In the sagittal plane, the spine is not straight and exhibits characteristic curves. Starting from the upper part of the spine, there is cervical lordosis, thoracic kyphosis, lumbar lordosis, and sacral kyphosis. In lordosis, the curve is convex anteriorly, while kyphosis is convex posteriorly [6,10].

One of the most well-known spinal disorders is scoliosis, a structural deformation of the spine that occurs in three planes. In the frontal plane, there is lateral deviation, and in the transverse plane, vertebral rotation occurs. In the sagittal plane, it leads to an increase or decrease in lordosis or kyphosis, depending on the affected segment. Scoliosis brings many adverse changes to the body, affecting the musculoskeletal system, cardiovascular and respiratory systems, and the functioning of internal organs [7].

Thoracic hyperkyphosis is a spinal deformity commonly referred to as rounded shoulders. It is characterised by protruding shoulder blades, forward bending, and a dropped chest. This condition can have various causes, such as poor posture, vision problems, low self-esteem in children, conditions like Scheuermann's disease, rickets, or joint inflammation. Weakened muscles in the thoracic region are a major contributing factor to its development.

Rounded shoulders can also be caused by a general kyphosis of the spine. On the other hand, an increase in physiological lumbar lordosis leads to a condition informally called hollow back, which can affect the functioning of the internal organs. Lumbar hyperlordosis can be congenital or acquired and is often associated with muscle dystonia, which weakens some muscles and excessively contracts others.

If a child loses the physiological spinal curves, it is referred to as a postural problem known as flat back. This increases the risk of scoliosis and weakens the spine, potentially leading to degenerative changes. A child with flat back may appear to have a protruding head and a flattened chest. Some muscles, like the chest and buttock muscles, are weakened, while others, such as the neck and buttock muscles, are excessively shortened [11].

Disorders of the lower extremities can significantly affect the alignment of the pelvis and spine. These disorders can affect both knee joints and feet.

In the knee joint area, we can distinguish between “knock-knees” and “bowlegs”. Knock-knees occur when there is an open outward angle between the axis of the thigh and the axis of the lower leg, and the distance between the inner ankle joints, with the knee joints together, is more than five centimetres. However, it is important to remember that in children, knee knocking is physiological at around four years of age. If knee knocking persists beyond this age, it may be considered pathological. The child's gait is then incorrect, the child's feet are widely spaced, and the knees rub against each other. The stability of the child's knee joint is also compromised. If any irregularities are observed in a child, it is advisable to consult a physiotherapist or a doctor to take appropriate therapeutic measures. The other postural problem concerning the knee joint is “bowlegs”. This occurs when the angle between the thigh and shin axis is inwardly open. The distance between the knee joints, with the child's inner ankle joints together, indicates whether the child has this problem. If this distance reaches five centimetres, it indicates pathology and requires consultation. As with knock-knees, it is important to consider that knee bowing is a physiological phenomenon at certain stages of a child's life. In infancy, children's knee joints exhibit physiological bowing, which reaches its highest point between the sixth and twelfth month of life. In the next stage of development, as the child begins to move independently, the degree of bowing decreases. Around the age of three to four, it transitions to a knocked-knee or correct position [8,12].

A properly formed and functioning foot typically has three points of support, including the head of the first metatarsal, the head of the fifth metatarsal, and the heel bone's tuberosity. The arch of the foot is formed by three arches: the longitudinal medial arch between the first metatarsal and the heel, the lateral longitudinal arch between the fifth metatarsal and the heel, and the transverse arch extending between the first and fifth metatarsals [13].

Among foot deformities in children, there are several types, including flat feet, high arches, clubfoot, and in-toeing. Flat feet are characterised by the lowering of the longitudinal arch of the foot and can result from improper functioning of the ligament-muscle apparatus or inadequate preparation to bear weight. Flat feet in infants and young children are physiological, but after the age of three, they may be considered pathological. High arches, on the other hand, represent the opposite of flat feet, with the plantar arch deepened. This deformity occurs in a supine position and forms an angle of approximately twenty-five to thirty degrees in relation to the heel axis. It is important to note that proper care and possible correction of foot problems in children are important to ensure proper development and future foot function. Another foot problem in children is clubfoot, characterised by a three-dimensional deformity. It involves the foot being positioned in adduction, restricting outward foot movement, and the heel being turned inward. This deformity is often associated with equinus positioning, causing the heel to be higher than the forefoot, and the foot is in a dorsiflexed position. Another issue is the “pigeon-toed” feet, where the foot is positioned in dorsal flexion. The prognosis depends on the severity of this deformity. In some cases, it may improve spontaneously as the child strengthens their calf muscles. However, in other cases, surgical treatment may be necessary. Monitoring a child’s foot development and consulting a doctor or paediatric orthopaedic specialist if necessary is crucial for an accurate diagnosis and potential treatment [13,14]. Our study aims to assess parental knowledge of childcare, development, and posture defects, considering factors such as education, residence, parental age, and attendance at antenatal classes.

Materials and Methods

A total of 190 individuals who were parents of children of various ages residing in Poland participated in the study. The research was conducted from December 2020 to April 2021. To carry out the study, a custom

questionnaire was employed, which was distributed electronically. Each participant voluntarily completed the questionnaire on their own electronic device while remaining anonymous. Ethical approval for the research was granted by the Bioethical Committee at the Wrocław Medical University (Approval No. KB-281/2021).

The classification criteria were being a parent and having a general knowledge of their child's development.

The research method used was a custom questionnaire. The questionnaire consisted of fifteen sections. At the beginning of the questionnaire, general questions were included regarding the place of residence, personal information, and information about the number of offspring.

The second part of the questionnaire, comprising four sections, focused on questions related to the course of pregnancy, childbirth, and any potential complications. It also contained questions to assess the parents' knowledge of the proper care of a newborn, gather information about where the parents acquired this knowledge, and obtain information related to breastfeeding. The following four sections of the questionnaire contained questions about the proper course of child development. These questions concerned the acquisition of motor skills appropriate for each month of a child's life. The final section of the questionnaire verified the parents' knowledge about the development of posture defects, the reasons for their formation, and the consequences of not treating them. It also included questions about any posture defects in their children and general questions related to physical activity.

Variables expressed at the ordinal or nominal level were analysed using tests based on Chi-square distribution. For 2×2 tables, a continuity correction was applied. In cases where the conditions for using the Chi-square test were not met, Fisher's exact test with extensions for tables larger than 2×2 was employed. The significance level was set at $p = 0.05$. The test accepted the null hypothesis H_0 : Variables are not dependent and the alternative hypothesis H_1 : There are significant dependencies between the variables. The calculations were performed using the statistical software R ver. 3.6.0, the program PSPP, and MS Office 2019.

Results

When asked about the age at which the majority of mothers gave birth to their children, as many as 70.5% indicated the age range of 21–30 years. Significantly fewer women gave birth between the ages of 31–40, at just under 23.7%. The smallest percentage of mothers giving birth was above 40 years old, with just over 1%.

Approximately 30.5% of the respondents declared that they lived in rural areas, while 69.5% indicated that they resided in urban areas.

Respondents were also asked about the educational background of both mothers and fathers. Among mothers, the largest percentage, as many as 66.3%, reported having higher education. The fewest women admitted to having achieved only primary education, with 2.1% of the respondents.

The results for fathers were somewhat different. Just under 48% reported having higher education, while 6.3% had only completed primary education.

Participants were also asked to provide information about the number of children they had. Half of them indicated having only one child, and more than four children were reported by only 0.5% of the survey participants (Figure 1).

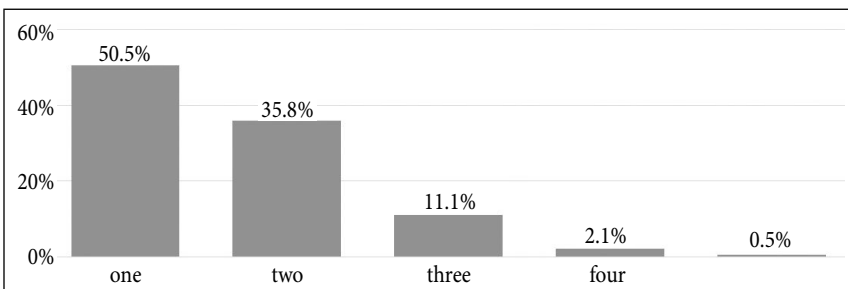


Figure 1. Number of children of respondents

Source: compilation based on authors' own research.

In the surveyed group of respondents, the level of knowledge regarding child development, breastfeeding, and childcare was assessed. To achieve this, the answers in the questionnaire were summed up and analysed. After the analysis, the results were presented in Table 1.

Table 1. Knowledge level of parents regarding child development, care, and breastfeeding

Level of knowledge about development	Frequency	Percentage
Lowest	57	30.0%
Average	85	44.7%
Highest	48	25.3%
Level of knowledge about childcare	Frequency	Percentage
Lowest	63	33.2%
Average	42	22.1%
Highest	85	44.7%
Level of knowledge about breastfeeding	Frequency	Percentage
Lowest	106	55.8%
Average	30	15.8%
Highest	54	28.4%

Source: compilation based on authors' own research.

We examined whether there is a relationship between the mother's age and the level of knowledge about child development and care (Table 2). Women under the age of 30 most commonly represented an average level of knowledge about child development (42.7%), similar to women above the age of 30 (51.1%). The distribution of knowledge levels was very close, and the differences observed were minor. In terms of knowledge about childcare, women under 30 most commonly had the highest level of knowledge (44.1%), just like women above 30 (46.8%). The results were not statistically significant ($p > 0.05$).

Table 2. Relationship between the level of knowledge about child development and care and the mother's age

			Mother's age		Test result
			up to 30 years old	above 30 years old	
Level of knowledge about child development	lowest	N	45	12	$\chi^2 = 1.060$ df = 2 p = 0.589
		%	31.5%	25.5%	
	average	N	61	24	
		%	42.7%	51.1%	
	highest	N	37	11	
		%	25.9%	23.4%	

			Mother's age		Test result
			up to 30 years old	above 30 years old	
Level of knowledge about childcare	lowest	N	45	18	$\chi^2 = 2.027$ df = 2 p = 0.363
		%	31.5%	38.3%	
	average	N	35	7	
		%	24.5%	14.9%	
	highest	N	63	22	
		%	44.1%	46.8%	

χ^2 – test statistics; df – degrees of freedom; N – sample size; p – statistical significance

Source: compilation based on authors' own research.

The analysis also examined the level of knowledge about childcare and child development in relation to the mother's place of residence. Both women living in rural areas (39.7%) and those living in urban areas (47%) most commonly exhibited average knowledge about child development, and the differences between them were not statistically significant ($p > 0.05$) (Table 3).

Table 3. Relationship between knowledge level and the mother's place of residence

			Place of residence		Test result
			village	city	
Level of knowledge about child development	lowest	N	17	40	$\chi^2 = 1.596$ df = 2 p = 0.450
		%	29.3%	30.3%	
	average	N	23	62	
		%	39.7%	47.0%	
	highest	N	18	30	
		%	31.0%	22.7%	
Level of knowledge about childcare	lowest	N	25	38	$\chi^2 = 5.150$ df = 2 p = 0.076
		%	43.1%	28.8%	
	average	N	8	34	
		%	13.8%	25.8%	
	highest	N	25	60	
		%	43.1%	45.5%	

χ^2 – test statistics; df – degrees of freedom; N – sample size; p – statistical significance

Source: compilation based on authors' own research.

Rural residents most frequently exhibited both the lowest and the highest levels of knowledge about childcare – 43.1% each, while urban dwellers most commonly demonstrated the highest level of knowledge – 45.5%. Although women living in cities were notably less likely to display the lowest level of knowledge, the differences were too small to be considered statistically significant ($p > 0.05$).

Another relationship examined was the dependency between the level of knowledge about child development and care and the mother's education. Due to the extremely small sample sizes for the categories of basic and vocational education, they were combined with the category secondary education. This was necessary to conduct a reliable analysis of the relationship.

Women with both secondary or lower education (46.9%) and higher education (43.7%) most frequently represented an average level of knowledge about child development, and the differences observed were statistically non-significant ($p > 0.05$).

However, it is worth noting that women with higher education significantly represented a higher level of knowledge about childcare compared to women with secondary or lower education. Women with secondary or lower education most frequently (57.8%) exhibited the lowest level of knowledge about childcare, while women with higher education most commonly demonstrated the highest level (52.4%).

Another relationship examined concerned the level of knowledge of women who have one child compared to those who have more than one. In this study, the low-frequency categories of three, four, and more than four children were combined into the category of two or more children. Mothers with one child (43.8%) and mothers with more than one child (45.7%) most frequently displayed average knowledge about child development. The differences observed here were statistically non-significant ($p > 0.05$). In terms of knowledge about childcare, women with one child exhibited the highest level of knowledge (45.8%). Women with more than one child also most commonly demonstrated the highest level (43.6%), and the differences observed between them could not be considered statistically significant ($p > 0.05$) (Table 4).

Table 4. The relationship between the number of children and mother's knowledge about child development and childcare

		Number of children			Test result
		one	more than one		
Level of knowledge about child development	lowest	N	32	25	$\chi^2 = 1.184$ df = 2 p = 0.553
		%	33.3%	26.6%	
	average	N	42	43	
		%	43.8%	45.7%	
	highest	N	22	26	
		%	22.9%	27.7%	
Level of knowledge about childcare	lowest	N	27	36	$\chi^2 = 2.895$ df = 2 p = 0.235
		%	28.1%	38.3%	
	average	N	25	17	
		%	26.0%	18.1%	
	highest	N	44	41	
		%	45.8%	43.6%	

χ^2 – test statistics; df – degrees of freedom; N – sample size; p – statistical significance

Source: compilation based on authors' own research.

During the survey, respondents were asked whether they attended antenatal classes during their pregnancy. A significant portion declared that they did not participate in classes organised by antenatal schools – as many as 57.1%.

Therefore, this study aimed to investigate whether individuals who acquired knowledge from antenatal classes had a higher level of knowledge about childcare compared to those who did not attend such classes. The results proved to be statistically significant ($p < 0.05$). Women attending antenatal classes most frequently represented the highest level of knowledge about childcare – 52.4%, while women who did not attend antenatal classes most commonly represented the lowest level – 41.7%. The study demonstrated that women attending antenatal classes had a statistically significantly higher ($p < 0.05$) level of knowledge about childcare.

Parents were also asked about how their newborns were fed. The majority indicated that their child was breastfed – as many as 83.2%.

The analysis then focused on the relationship between the level of knowledge about breastfeeding among women who attended antenatal classes and those who did not. It was observed that women who attended

antenatal classes had a statistically significantly higher ($p < 0.05$) level of knowledge about breastfeeding (Table 5).

Table 5. The relationship between the level of knowledge about breastfeeding and attending antenatal classes

		Attending antenatal classes		Test result
		yes	no	
Level of knowledge about breastfeeding	lowest	N	37	$\chi^2 = 10.159$ df = 2 p = 0.006
		%	45.1%	
	average	N	12	
		%	14.6%	
	highest	N	33	
		%	40.2%	

χ^2 – test statistics; df – degrees of freedom; N – sample size; p – statistical significance

Source: compilation based on authors' own research.

Some of the participants reported using substances during pregnancy. The most common were coffee, with approximately 25% of the respondents, and cigarettes, with just over 3% (Table 6).

Table 6. Percentage of women using substances during pregnancy [%]

Substances used during pregnancy	Frequency	Percentage of observations
Cigarettes	7	3.58%
Alcohol	1	0.52%
Coffee	48	24.62%
None	139	71.28%

Source: compilation based on authors' own research.

Based on this data, the relationship between substance use and a normal course of pregnancy in women was examined. For the purposes of the study, the categories of alcohol, cigarettes, and coffee were combined, while for the course of pregnancy, the low-frequency categories were combined into the first trimester, the second trimester, and abnormal. Both among women who used substances (80.4%) and those who did not (83.5%), the course of pregnancy was most commonly normal, and the differences observed were so small that they should be considered statistically insignificant ($p > 0.05$) (Table 7).

Table 7. Relationship between the course of pregnancy and substance use during pregnancy

			Substance used during pregnancy		Test result
			used	not used	
Course of pregnancy	normal	N	41	116	$\chi^2 = 0.077$ df = 1 p = 0.781
		%	80.4%	83.5%	
	abnormal	N	10	23	
		%	19.6%	16.5%	
In total		N	51	139	
		%	100.0%	100.0%	

χ^2 – test statistics; df – degrees of freedom; N – sample size; p – statistical significance

Source: compilation based on authors' own research.

During the study, parents were asked whether they took their child to a physiotherapist in the first year of life. Most of them did not. In the group of individuals who saw a physiotherapist, over 40% of the children required therapy. The results are presented in the table below (Table 8).

Table 8. Utilisation of therapy during physiotherapy appointments

Application of Therapy	Frequency	Percentage of observations
Bobath Therapy	17	21.79%
Vojta Therapy	7	8.97%
Sensory Integration	5	6.41%
Not Applied	47	60.26%
Other	7	8.98%

Source: compilation based on authors' own research.

Thus, it was examined whether a parent's desire to consult a physiotherapist is related to the place of residence. The result was statistically insignificant ($p > 0.05$), and the differences in the distribution of visits to a physiotherapist based on the place of residence were minimal. Both women living in the countryside (58.6%) and those living in the city (59.1%) most often did not visit a physiotherapist in the first year of their child's life ($p > 0.05$) (Table 9).

Table 9. The relationship between the place of residence and consulting a physiotherapist about child development

			Place of residence		Test result
			village	city	
Physiotherapist visit	yes	N	24	54	$\chi^2 = 0.000$ df = 1 p = 1.000
		%	41.4%	40.9%	
	no	N	34	78	
		%	58.6%	59.1%	
In total		N	58	132	
		%	100.0%	100.0%	

χ^2 – test statistics; df – degrees of freedom; N – sample size; p – statistical significance

Source: compilation based on authors' own research.

During the study, parents were asked if they monitor their child's body posture. Over 77% of parents declared that they pay attention to their child's posture, 9% stated that they do not, and 14% of respondents mentioned that they do so rarely. Both rural residents (75.9%) and urban residents (78%) most commonly paid attention to their child's correct body posture – the difference here was slight and statistically insignificant ($p > 0.05$), as shown in Table 10.

Table 10. The relationship between the parents' place of residence and their concern with their child's proper posture

			Place of residence		Test result
			village	city	
Monitoring a correct body posture	yes	N	44	103	$\chi^2 = 0.402$ df = 2 p = 0.818
		%	75.9%	78.0%	
	no	N	6	10	
		%	10.3%	7.6%	
	seldom	N	8	19	
		%	13.8%	14.4%	
In total		N	58	132	
		%	100.0%	100.0%	

χ^2 – test statistics; df – degrees of freedom; N – sample size; p – statistical significance

Source: compilation based on authors' own research.

Among the most common reasons for postural defects indicated by parents, the responses were adopting an incorrect posture – as many as

81.6%, and genetic factors – 60% of responses. The exact results are shown in Table 11.

Table 11. Characteristics of the study group with a consideration of knowledge about the causes of postural defects

Causes of postural defects	Frequency	Percentage of observations
Genetic factors	114	60.00%
Chronic diseases	64	33.68%
Vision impairments	36	18.95%
Mechanical injuries	91	47.89%
Incorrect body posture	155	81.58%
Developed in the mother's womb	59	31.05%
Other	1	0.53%

Source: compilation based on authors' own research.

Another relationship analysed was the influence of the mother's education on knowledge of the consequences of untreated postural defects in children. The results are presented in Table 12.

Table 12. The relationship between the mother's education and knowledge of the consequences of untreated postural defects

		Mother's education		Test result	
		Lower or secondary	Higher		
Consequences of untreated postural deformities	Musculoskeletal pain	N	51	111	$\chi^2 = 21.168$ df = 6 p = 0.002
		%	79.7%	88.1%	
	Decreased physical fitness	N	17	57	
		%	26.6%	45.2%	
	Nervous system dysfunction	N	15	43	
		%	23.4%	34.1%	
	Digestive system disorders	N	11	44	
		%	17.2%	34.9%	
	Circulatory system disorders	N	17	47	
		%	26.6%	37.3%	
	Deformities	N	33	77	
		%	51.6%	61.1%	
χ^2 – test statistics; df – degrees of freedom; N – sample size; p – statistical significance					

Source: compilation based on authors' own research.

The result of the study turned out to be statistically significant ($p < 0.05$). Therefore, there are significant differences in the distribution of knowledge about the consequences of postural defects based on education.

Women with medium or lower than medium education most often indicated musculoskeletal system pain (79.7%) and deformities (51.6%), similar to women with higher education (88.1% and 61.1% respectively). However, it was observed that women with higher education significantly more often ($p < 0.05$) pointed to a decrease in the body's efficiency and digestive system disorders.

The influence of education was also examined regarding the knowledge of the causes of postural defects in children. For the purpose of the study, the extremely small category "other causes" was excluded because there was only one observation within this category. In this case, the result also turned out to be statistically significant.

Women with medium or lower than medium education most often indicated prolonged, incorrect body position (73.4%) and genetic factors (53.1%). Women with higher education also most often indicated incorrect body position (84.9%) and genetic factors (63.5%). It should be noted that women with higher education significantly more often ($p < 0.05$) pointed to chronic diseases and defects acquired in the mother's womb.

Discussion

Being a parent is one of the most important roles in a person's life. It transforms an individual into someone responsible not only for themselves but also for their newborn child. This entails acquiring skills related to child-care and knowledge about child development. This knowledge and skillset are crucial for providing the child with the right conditions for proper development and ensuring their safety.

Based on this research, it can be concluded that parents' knowledge of child development is not satisfactory. The correlation between the level of knowledge about child development and the mother's age was examined. The results of the statistical analysis turned out to be statistically

insignificant ($p > 0.05$). Both women under 30 years of age and women over 30 years of age showed an average level of knowledge. However, delving deeper into the percentage values, it can be observed that women over 30 had a slightly higher percentage of correct answers, by less than 10%, compared to younger women. A similar comparison was made in the study conducted by Filipowicz and Rekowski. Their analysis did not show any statistical significance either ($p > 0.05$). When analysing the percentage indicators, they noticed a trend of lower knowledge about child development among women under 30 years of age. The results regarding the correlation between a mother's age and knowledge about childcare show a consistent pattern. In both our own research and the article by Filipowicz and Rekowski, the results of this correlation are not statistically significant. In our study, knowledge about childcare is at a high level in both age groups. However, among women over 30 years of age, the percentage of correct answers is slightly higher, by less than 3%, compared to younger mothers [1]. The results of the study presented in the article by Deluga *et al.*, show that mothers in the age range of 21 to 25 had the highest level of knowledge about the newborn period and child development. However, the difference in the average score between this age group and the age range of 36 to 40 years was only 0.5 points [2].

The data in the study also compared the place of residence and education with the results of the knowledge assessment. Based on the results of the questionnaire, it is not possible to definitively determine whether mothers living in rural areas or those in urban areas have a greater knowledge of child development, as the results are not statistically significant ($p > 0.05$). In terms of the percentage distribution of correct answers, a slightly higher level of knowledge can be observed among women living in cities (47%) compared to those living in rural areas (39.7%). Filipowicz and Rekowski also observed a similar relationship in their study. Their results were statistically significant ($p \leq 0.05$). They found that the level of knowledge among mothers living in rural areas was significantly lower than that of mothers in medium-sized and larger cities, with only 28.6% providing correct answers. Similarly, the relationship between the place of residence and knowledge about childcare

follows a similar pattern. In the analysis of the results of our own study, there is no statistical significance, even though women living in cities clearly less frequently exhibited the lowest level of knowledge. However, in the study by Filipowicz and Rekowski, statistical significance was observed in this regard, and the percentage of correct answers among mothers living in rural areas was only 23.8%, while it exceeded 50% for women living in cities [1].

The analysis conducted by us did not show significance in the relationship between the mother's education and her level of knowledge about child development. However, analysing the results, it can be inferred that mothers with higher education more frequently provided correct answers compared to mothers with vocational, elementary, and secondary education. Similar conclusions can be seen in the article by Deluga *et al.*, which indicates that mothers with higher education, including a master's degree, have more extensive knowledge than other mothers. However, no such relationship was presented by Filipowicz and Rekowski in their article, stating that knowledge of child development is not related to the mother's education [1,2].

Another factor examined was the relationship between attendance at antenatal classes and maternal knowledge regarding breastfeeding. Just under 43% of the respondents stated that they attended classes organised at antenatal schools. According to this survey, women attending antenatal classes represented a significantly higher level of knowledge about breastfeeding ($p < 0.05$). Olejniczak and Krakowiak [15] point out that too few women decide to attend antenatal classes; according to their research, only 32.71% of women. On the other hand, Filipowicz and Rekowski's work presents results indicating that antenatal classes increase parents' knowledge level [1,15]. They also point out the relationship between attending antenatal classes and knowledge about childcare. It was shown that among those who attended, over 62% of mothers had a higher level of knowledge, while among those who did not attend, the level of knowledge about childcare was low, at 35.7% [1]. The results of the statistical analysis in our study also showed a significant relationship between the level of knowledge about childcare and participation

in antenatal classes. Women who attended antenatal classes most often represented the highest level of knowledge about childcare (52.4%), while women who did not attend antenatal classes most frequently had the lowest level of knowledge (41.7%).

The last issue addressed in the paper was parents' knowledge about postural problems in children. The results showed that regardless of the mother's place of residence, parents are concerned about their children's posture. The percentage of people declaring an interest in postural problems in children, living both in rural and urban areas, was above 75%. Over 80% of the respondents living in rural areas indicated that they know the definitions of postural problems and are aware of what they entail and their consequences. Our research showed statistical significance in the relationship between education and knowledge about the causes of postural problems. Women with higher education pointed out the adoption of incorrect postures in 84.9% of cases, as well as genetic factors in 63.5%. In the study presented in the article by Motow-Czyż and Motow, the most commonly mentioned cause of postural problems by parents is maintaining incorrect positions, as many as 88.2% [8].

Conclusions

The level of mothers' knowledge about childcare largely depends on their level of education. Women with only basic or primary education tend to have a low level of knowledge about childcare. Conversely, women with higher education demonstrate a higher level of knowledge about caring for their children.

Additionally, those who participate in antenatal classes have a greater knowledge base. This highlights the benefits of attending antenatal classes.

Furthermore, women with higher education demonstrate a better understanding of the causes of postural problems. They are more likely to identify the most significant causes of postural issues. In contrast, mothers with lower levels of education have less awareness of the factors influencing postural problems in children.

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