

## Evaluation of the nearest development zone for children with a light degree of intellectual disability who live in an orphanage

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### Abstract

**Introduction.** The functioning of disabled children living in an orphanage remains little discussed in the scientific literature. Analysing this subject can undoubtedly improve assistance and revalidation\*, as well as helping them become independent. This was the main reason for our interest in this research topic. **Aim of Study.** The aim of this study was to try to answer the following question: do children with intellectual disabilities who live in an orphanage encounter an environment that is favourable for their development or unfavourable compared to children living in their family home? **Material and Methods.** Three groups of children aged 12-13 years with light intellectual disability were examined (n = 90). The three groups, each consisting of 30 children, included those who had lived in an orphanage for a short period of time, those who had lived in an orphanage for a long period of time, and those who lived in their family home. This research used a method developed at the school of L. Vygotsky to measure the area of nearest development, a clinical measure based on the determination of skillfulness. **Results.** The most important finding was that there are no differences in the area of nearest development between children living in orphanages and those living in their family home. The best developed zone was found to be motor development, with children living in orphanages scoring the highest in that area. **Conclusions.** Contrary to assumptions, the home environment did not adversely affect the development of the examined children. There was a similar current level of development in all three zones among children with a light degree of intellectual disability living in orphanages and in family homes. Therefore, the orphanage environment can be considered a positive developmental environment for these children.

\* Revalidation – the whole of the undertaken and systematized activities aimed at restoring the disabled person (also intellectually) as full as possible.

**KEYWORDS:** orphanage, light degree of intellectual disability, zone of nearest development, untapped development potential, exploited development potential, cognitive development, social development, motor development.

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### Introduction

Regardless of the economic and social status of a family, the situation faced by families with a disabled child is difficult. Before birth, the future parents create an idea about the child without considering whether the child might be disabled. Research indicates that future mothers have a more specific image of their child than future fathers, and they are also more emotionally connected to the unborn child [16]. This explains why the emotional shock felt by mothers after the birth of a disabled child is much stronger than the reaction of the father. The birth of a disabled child into

the family fundamentally changes its functioning. With the development of a disabled child, which may be accompanied by various psychosocial disorders, parents realise that their child's behaviour is very different from that of their peers. They often feel helpless because they find it difficult to communicate with the child. Often they do not know what the child is calling for when shouting or crying, and do not know how to respond to their poorly expressed needs. In addition, the child's unexpected and unpredictable reactions, coupled with their disabilities, may cause the parents to feel anxious about leaving home with the child. Resignation and reconciliation with fate appear, which may involve minimising expectations for the child as the parents feel it is impossible to engage in a dialogue with them. On one hand, parents minimise the child's abilities, and on the other, they assess themselves poorly as parents and educators [18].

Farber [6] emphasises that this is the cause of experiencing by parents a tragic life crisis, and then a crisis of organising the social roles. Faced with this difficult situation, parents are sometimes unable to properly care for the child as they have not created an emotional bond with them. The only solution they accept is placing the child in a closed facility. The second motivation for such a decision may be inadequate living conditions required to care for a disabled child in the family home. Small housing space, the lack of adequate finances to rehabilitate the child and a lack of knowledge about caring for such a child can prompt parents to place them in a care facility.

In Poland, about 20,000 children are under some form of institutionalised care, which is approximately 0.27% of the total population of children [13, 14]. For many years, it has been stated that these institutions should be abolished based on the idea that they negatively affect the development of the children who live there. Orphanages used to be primarily intended for biological orphans. Biological orphans currently make up only about 3% of children in orphanages, with the main reason for the existence of orphanages being to care for children whose parents have been deprived of parental rights due to alcoholism or substance abuse or inadequate care and education [14].

Among those children who are sent to an orphanage, a significant proportion are children with intellectual disabilities. In this case, it is not about educational failure, but the lack of sufficient care for these children. For these intellectually disabled children, it is thought that to remain living with their biological family will hinder their development. With this lies a dilemma.

On the one hand, there is an intellectually disabled child in the family home who needs special care and developmental stimulation and, on the other or such a child in an orphanage. The question is how do we best solve this dilemma, specifically, in which environment will such a child develop better? They require a lot of development stimulation because of their small intellectual potential, thus, it is necessary to obtain maximum support so their development is not delayed any further and the child's potential can be developed to its maximum extent.

While the impact of living in an orphanage on the development of the cognitive zone of children has been studied by researchers for over 70 years, studies focused on the effect on intellectually disabled children in this environment are more recent. It has been reported that the sooner such a child is placed in an orphanage, the lower his or her level of cognitive development. Furthermore, the longer they stay there, often without specialised care, the smaller the chance of development in this zone [7, 11]. This has also been confirmed by two studies conducted on children with a light degree of intellectual disability living in an orphanage. These children showed a lower level of cognitive development the earlier they were sent to this institution. In addition, difficult experiences with their relationship with parents (e.g., alcoholism or psychophysical violence) intensifies the already visible deficits in this developmental zone during the initial period of the child's stay in the institution [10, 11]. Thus, as a consequence of this doubly difficult situation, reception and reaction to stimuli is less effective. In addition, the child does not have regular support from a guardian (with whom he or she has an emotional bond) in the process of learning and acquiring knowledge about their environment. Imitation is one of the primary methods of learning about their environment, and children most often imitate people with whom they have a strong emotional connection. In an orphanage environment they lack 'worthy authorities', and this can significantly limit the cognitive development of a child with intellectual disabilities, which is already difficult due to their intellectual disability.

In the area of social development, the child's dissimilarity is of great importance, both in the context of psychosocial behaviours (related to their disability) as well as in the areas of external appearance, their manner of moving and any additional uncontrollable nervous tics and reflexes [4, 6]. These specific manifestations of the motor function of a mentally disabled child may cause their peers to become reluctant to communicate with them, which may lead to social rejection or withdrawal from

certain situations such as the school class community. In addition, the fact that the home of the intellectually disabled child is an orphanage also contributes to alienation from their peers as it is perceived as inferior and socially unacceptable. This is based on the theory of double stigmatisation, firstly due to their intellectual disability, and secondly as they have been brought up in an orphanage. Similar to the cognitive development zone, imitative actions in relation to people with whom the child is emotionally involved are of great importance for learning processes and for the assimilation of new social skills. This difficult situation, combined with the experience of specific rules of collective life and learned helplessness, as a result of making even the simple decisions for the child, may inhibit the acquisition of new skills in this zone [21]. Intellectually disabled children who are brought up in care facilities often fall into conflicts with their peers, for example, permanent mocking by their peers may cause either unjustified outbursts of anger (in inadequate situations) or, depending on life experiences, total submissiveness. Research by Lyle [18] assessed the impact of living in care and education centres on the social development of children with intellectual disabilities. He studied intellectually disabled persons living in closed institutions and those living at home. In his research he took into account, among others, the following personality traits: physical activity (hyperactivity or low activity), emotionality (emotional lability or emotional stability), assertiveness (domination or submission), anxiety (timid or sociable), neurotic mannerisms (grimacing, convulsions, infantile behaviour, immaturity, tics, etc.), and distraction (distraction or persistence). It turned out that people with intellectual disabilities who were raised in closed centres were less assertive than those living in family homes. This was due to the experience of the rules of collective life, meaning that their needs are less noticeable as they are one of many in a similar life situation. Butterfield et al. [3] showed that disabled persons living in closed establishments have a permanently unmet need for social contact and approval by adults and non-disabled people, and their negative reactions in social situations are the result of prior negative experiences with adults [14]. In addition, intellectually disabled children staying in an orphanage are more likely to have a traumatic experience than their non-disabled peers, and their carers are less likely to learn about it due to communication difficulties [11].

The stay of an intellectually disabled child in an orphanage also has negative consequences for their motor development. Their developmental disorder causes

difficulties in receiving and processing (analysing) arriving stimuli and, consequently, giving an adequate response to the stimuli. Therefore, the acquisition of new knowledge, its processing and use for the acquisition of new motor skills is also significantly impaired. For example, in an Iranian orphanage caring for both disabled and non-disabled children, for safety reasons the pupils are tightly covered with a quilt during the day which makes it difficult for them to move. In this way, children are deprived of the tactile sensations necessary for their development, which are required to fully explore the world and is an irreplaceable, most natural stimulus, mobilising to natural motor reactions [9]. The authors of these studies also emphasise the importance of establishing contact with the child, communicating their emotions with the child and influencing their mood through touch (understood as a natural stimulus).

Not wanting to be one-sided, it is worth referring to a study by Davids et al. [5] involving HIV-infected children in South Africa who were staying in care facilities. Of these children, 21 were significantly delayed in development when compared to their peers, including those placed in foster families. Both groups of children underwent intense multilateral therapy for 6 months. Children staying in orphanages performed much better in developmental tests (Peabody Development Motor Scale, PDMS II) after the 6-month period when compared to the children living in foster homes. Researchers found that the reason for these rather surprising results in this region of the world was low home stimulation compared to children staying under an institutionalised form of care. The inadequate developmental stimulation for the children cared for at home with parents or foster families was due to insufficient specialist knowledge about the proper course of child development, which was in contrast to the knowledge of qualified personnel in care facilities. While the foster parents provided good social care, they were unable to provide the necessary continuous incentives to stimulate the development of the children. The variation within the scientific literature surrounding this topic further justifies research on the impact of a child's living environment on their development. However, it should be emphasised that most of the available research (both Polish and foreign) suggests that staying in a natural living environment, such as a family environment, is more beneficial for the psychophysical development of children with intellectual disabilities. Taking this into account, the most important theoretical assumptions of the work were formulated, which will be discussed in the following paragraph.

**Aim of Study**

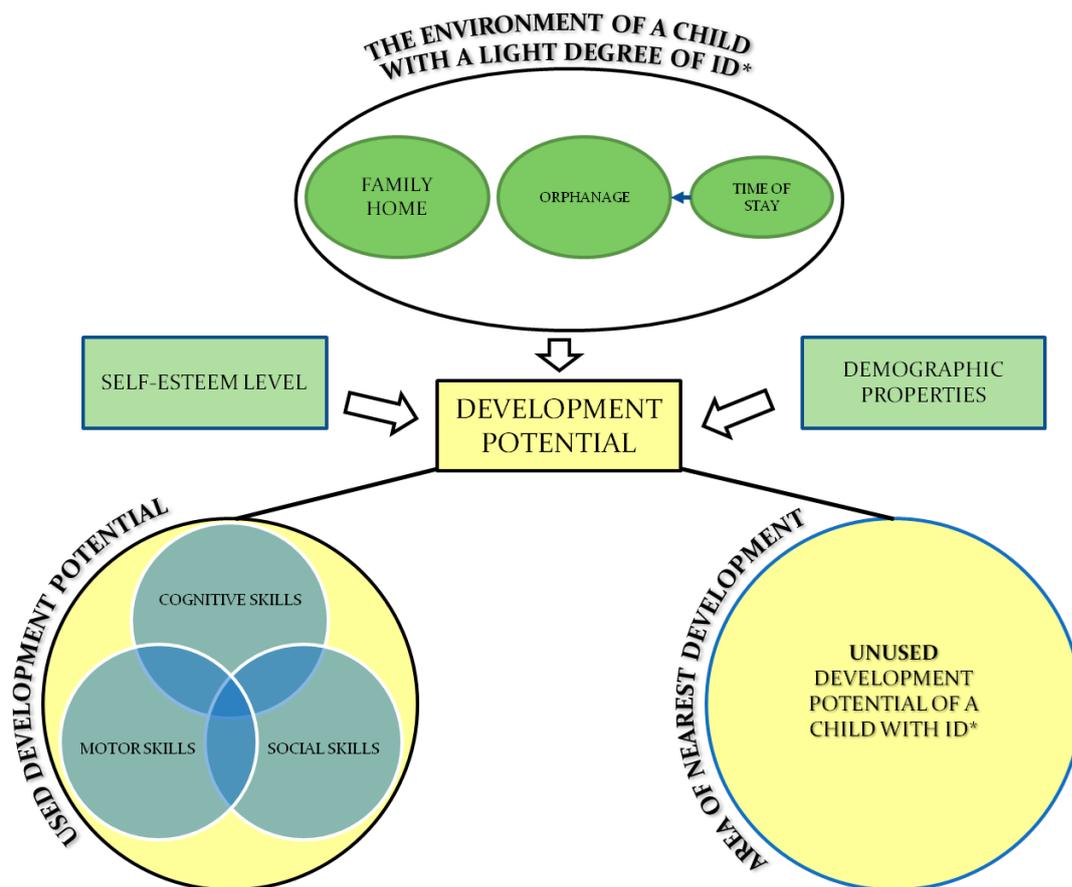
The aim of this study was to try to answer the following question: Do children with intellectual disabilities who live in a children’s home encounter a more favourable environment from the point of view of their development, or is this environment unfavourable compared to a home environment? As discussed above, the results of previous research on this issue are not conclusive. Some studies suggest that caring for an intellectually disabled child at home is better for their development compared to an orphanage. However, as also been reported, as the orphanage environment may be worse in terms of developmental stimulation when compared to the child’s home environment.

The basic criterion for assessing the developmental value of the environment, which is an orphanage in the current study, was established by Vygotski [24]. The Neighborhood Development Zone is based on the child’s untapped development potential. A large area of

undisclosed developmental potential was negative for the child’s living environment. Assessment of these parameters was made globally and in three specific areas of development: cognitive, social, and motor. While determining the zone of nearest development, the current level of development, termed ‘used development potential’ in the current study, was also determined.

At this point, it is worth presenting the specificity of the research problem, i.e., the criteria used to assess the impact of the facility on development. The theoretical model of work will serve this purpose (Figure 1). Opportunities that could be used or unused were defined as the potential for development. The difference between the used and unused developmental potential is based on what the child shows and what they can demonstrate with the help of other people.

The dependent variable, the zone of the nearest development in relation to children staying in orphanages, was used to evaluate whether the child has a certain



\* intellectually disabled to a light degree

**Figure 1.** Theoretical model of connections between the dependent variable, unused development potential, and the independent variables (child’s place of life, length of stay in the orphanage, level of self-esteem, and demographics)

potential that is fully utilised or whether it is simply unused. On this basis, the value of the institution (orphanage) was assessed.

The next group of variables included the independent variables. We recognised that the environment of the orphanage, which is different from that in which children grow up in family homes (with their biological parents), can influence the child's development. Therefore, the child's living environment was considered the first independent variable. The length of stay was also taken into consideration, as whether a child stays in the institution for a short or long period can affect their development. The longer the stay, the greater the influence of this environment on the child's development. Therefore, duration of stay represented the second independent variable. Demographic information including the sex and age of the child, as well as the age of the child when they arrived at the institution was also collected.

According to the above model of theoretical connections between variables, the research questions posed in the study were formulated:

1. How does the orphanage environment influence the use of developmental potential of a child with a light degree of intellectual disability?
2. What is the role of the length of stay in the orphanage in terms of use of development potential?

### Material and Methods

The analysis included 90 children with a light degree of intellectual disabilities who were either staying in their family home or in an orphanage. There were 41 girls and 49 boys, all aged 12-13 years old. We decided that examining children at this age would be the simplest way to answer the research questions. The first group consisted of children with a light degree of intellectual disability who were living in an orphanage. We divided these children into two subgroups: children who had been staying in the orphanage for a long period (from 4.5 to 5.5 years), and children who had been staying in the orphanage for a short period (no longer than 1 year). Each of these groups consisted of 30 children (total of 60 children). A separate third group, the control group, consisted of 30 intellectually disabled children who lived in their family home with their biological parents. This group was selected in such a way that children, depending on their age and gender, would be suitable for comparison to the experimental group.

The experimental method was used to measure the dependent variable, which was the unused development potential. Three sets of tasks were prepared to evaluate each zone. The tasks were varied depending on difficulty

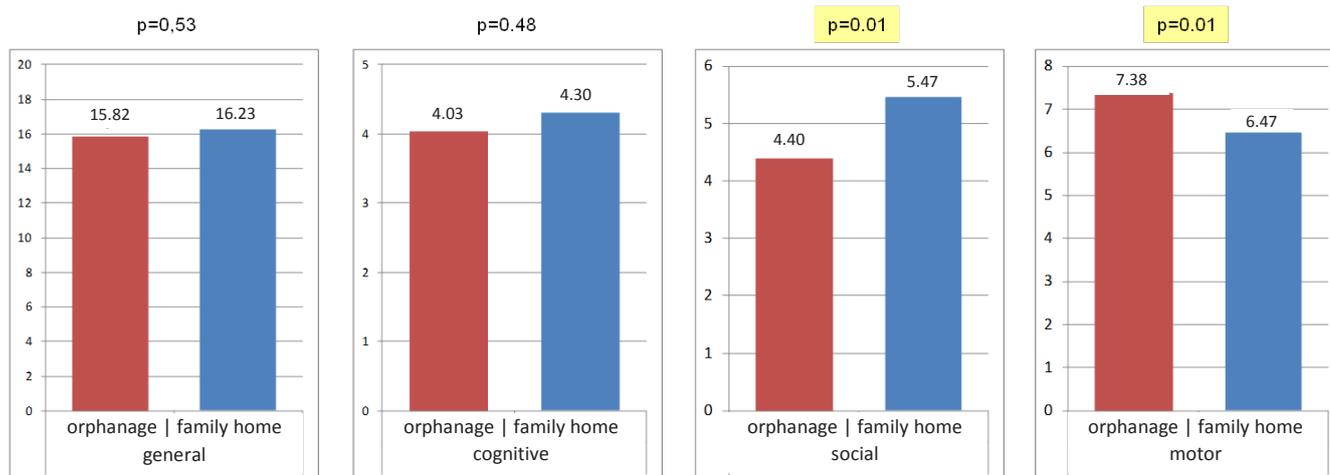
level (easy, medium and difficult). In order to transition to the next task, the child needed to give the correct answer to the previous task. In case of difficulties, two hints were prepared for each of the tasks. While determining the unused development potential, the current development zone was also determined. The measurement took place using an experiment based on the methodology described by Wygotski et al. [23, 24] to determine skillfulness. For each level of difficulty, starting from the easiest tasks, the procedure proceeded as follows. The child was firstly presented with the starting task which they attempted to independently complete or give an independent answer (depending on which zone was being examined). At this stage, the zone of current development was determined. If the child performed the task correctly, they moved onto a more difficult task. If the child did not carry out the task correctly or did not give the correct answer they were given the first hint, after which they attempted to perform the task again. If after receiving the hint the child completed the task correctly, they could proceed to the more difficult task. If the child still did not perform the task correctly, i.e., did not achieve a higher level of demonstrated skills, they were given a second hint and asked to continue to solve the task independently. If after the second hint there was no improvement in completion of the task, the diagnostic testing process was terminated on the basis of the difference in the task performance before and after the hints, and the unused development potential was determined as a value.

It should be emphasised that the greater the progress in performing tasks for all development zones after the obtained hints, the larger the zone of unused development potential. With the method used it was possible to determine the unused development zone in the cognitive, social and motor dimensions.

In order to measure the above-mentioned independent variables, information on the child's living environment length of stay and age at which the child arrived at the orphanage were collected using a data sheet. In addition, information on the sex and age of the child was obtained. The empirical data collected in this manner were subjected to calculations and statistical analysis. These included tests to determine differences between means, so-called simple statistics and complex statistics. StatSoft's Statistica version 10 software was used for all analyses.

### Results

The first research question, how does the orphanage environment affect the development of intellectually

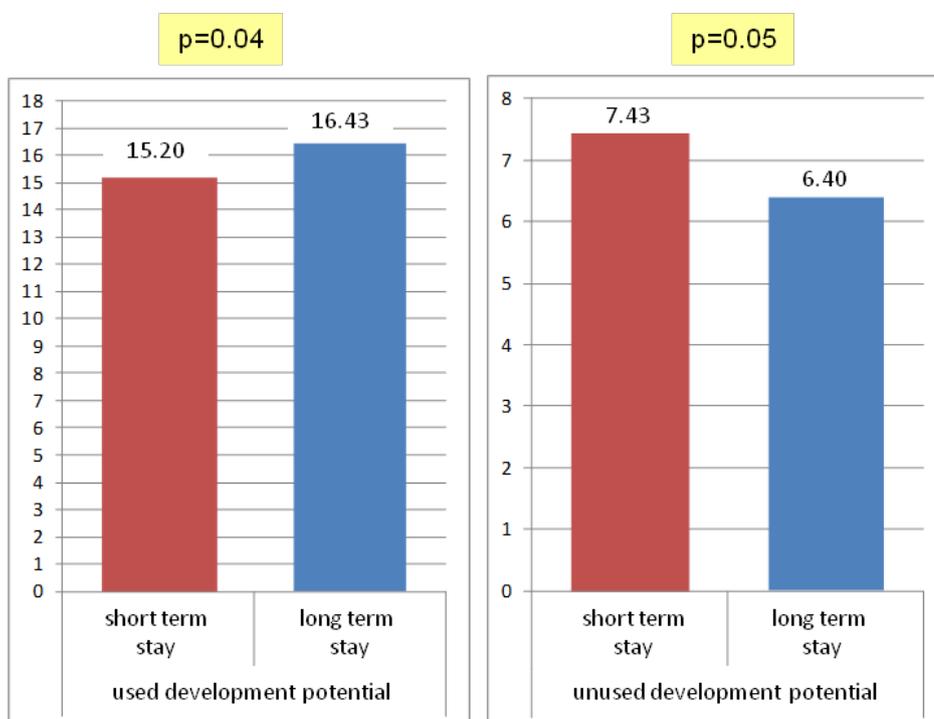


**Figure 2.** Distribution of the utilised development potential of two groups of children with intellectual disabilities

disabled children, was addressed by measuring the level of development as a real achievement in the individual experimental tasks. The results are presented in Figure 2, in which red columns represent the results of children living in an orphanage and blue columns represent children living in their family home.

The cumulative results from the three developmental dimensions, presented in the first panel of Figure 2, show that there were no statistically significant differences

in the level of development between children. There was a statistically significant difference in social development in favour of children living in their family home, but an opposite effect on the motor development zone in favour of children living in orphanages. As evident from the data, it cannot be clearly stated that the educational institution, in this case the orphanage, had a negative impact on the development of children with a light degree of intellectual disability. Furthermore, the



**Figure 3.** Distribution of the total used and unused development potential for the two groups of children with intellectual disabilities, differentiated according to time spent in the orphanage

obtained data does not show that living in an orphanage negatively affected the development of children with a light degree of intellectual disability in terms of their nearest development zone. It is worth noting that the best developed development zone for children from orphanages and children from family homes was the motor development zone.

The second research question, what role does the length of the child's stay in the orphanage have on the use of development potential, is addressed in Figure 3.

For both the used and unused developmental potential, those children who had spent a longer time in the orphanage appeared to have benefitted from this situation. Our results show that the longer the child had spent in the institution, the more it had affected their development. As seen in the first panel of Figure 3, children who had stayed in the orphanage for a shorter period of time differed significantly from children who had stayed there for a long time in terms of general development. Therefore, it can be concluded that the duration of stay, surprisingly, had a positive influence. This represents the second indicator that the orphanage environment had a positive effect on the development of the children in this study.

### Discussion

In our study, the level of utilisation of possessed development potential by intellectually disabled children was considered a measure of the extent that the child's development was stimulated by their environment. It was assumed that environmental conditions (orphanage or family home) and the length of time spent in these conditions could significantly affect the development of children with intellectual disabilities.

The most important and surprising result of our research was that children who lived in an orphanage did not differ significantly in terms of the use of developmental potential when compared to those who lived in their family home. Thus, the basic social stereotype that children from orphanages have impaired development, at least for children with a light degree of intellectual disability, was not confirmed by our research. However, there were differences in two development zones. Specifically, the area of social development was better in those living in their family home, and the motor development zone was better in those who lived in the orphanage.

To justify these results, we refer to the five basic psychosocial needs (safety, love, belonging, self-esteem and self-fulfilment). Realisation of these needs influences the social development of children, among

others, which has been the topic of studies by Akuoko et al. [1] and Matejcek [20]. According to some researchers, the development of children under institutional care is primarily dependent on the level of satisfaction of these previously mentioned needs, which could explain the results obtained in the current study [2, 8, 19, 22].

Secondly, the family plays the most important role in the child's social development. Therefore, the family is the most important source to shape social behaviour, with the parents acting as role models, especially during the first period of life. Families also influence the child's social functioning in everyday life situations, such as how they solve conflict situations with their peers. It can be assumed that placing a child with a light degree of intellectual disability in an orphanage is, to a large extent, the result of ineffective care and education of the parents, who may suffer from alcohol or substance abuse, or an impaired relationship with parents resulting from a lack of acceptance of their child's disability, among other reasons. Thus, the patterns of social behaviour experienced by the child in the family home may be unusual, likely not falling within the 'framework' of norms and principles that are socially recognised as being correct. It can also hinder the child's social development in a new living environment.

Thirdly, a child with a light degree of intellectual disability has difficulties in cognitive and, consequently, social development due to their disability. An intellectually disabled child who is sent to an orphanage experiences a significant amount of stress related to this new and difficult situation, mainly in terms of social development as they must quickly learn new rules and rules of collective life. For a child with a difficult course of development, any new living environment is likely to have a negative impact on their development. In addition, in the case of intellectually disabled children, the rules of collective life may hinder the acquisition of many important social skills [21]. This is as important because a disabled child has the chance to function alone in the future, living outside the 24-hour care centre (in a closed system, in the group) and finding employment in a workplace (adapted to their needs and abilities) giving them financial and living independence. In addition, the initial developmental difficulties of an intellectually disabled child living in an orphanage, in particular, may also be associated with reduced 'flexibility' of the mind of these children. In a situation with constantly changing conditions and rules, such as an orphanage environment (dictated by frequent rotation of both staff and mentors), mental stiffness of intellectually disabled children limits their social functioning. The sense of

temporariness in establishing relationships with carers and the lack of worthy authority figures to imitate may disturb their social development. In addition, frequent inadequate assessment of the situation is probably the cause of unpleasant experiences in relationships with peers, especially in the new situations presented by life in an orphanage [21].

Fourthly, previous negative experiences in relationships with adults have an impact on the establishment of new relationships. New guardians and educators bring mistrust and reluctance. The source of these behaviours is often a deep sense of injustice experienced from parents, who – because of the fact of being parents – are endowed with the unlimited trust and love of their children. With the appearance of an intellectually disabled child in the institution comes tremendous destabilisation. In such a situation, it is difficult to talk about the adequacy of behaviours or acquiring new social skills with a child with a difficult course of development. This explains the weaker social development of children with intellectual disabilities to a light degree who live in orphanages when compared to their peers living with their biological parents.

Our research revealed a surprising result related to the motor development of the examined children. Contrary to the conclusions of many other scientists including Bolt et al. [2], Fischer [8], Matejcek [19] and Richardson and Young [22], who discuss the inadequate motor skills of children living in orphanages, our research shows that the motor development of these children is very good compared to children living in their family home. Perhaps this is related to the need to show greater autonomy in this institution and, therefore, engage in more self-guided activities. Their doubly difficult life situation (e.g., too few educators for a large group of pupils and difficulties in satisfying their individual needs) forces the children to perform motor tasks in a more independent way. This, in turn, develops their motor skills (e.g., small motor skills) from attempting to perform certain activities. Disabled children from orphanages must actively develop their motor skills. It can also be concluded that learned helplessness more often affects children living in family homes. This may be due to parental over-care driven by parents feeling the need to provide exaggerated care while performing basic everyday activities due to the inability of the child or their desire to protect the child against failure.

Related to the second research question, we found that the length of the child's stay in the orphanage can be an important variable affecting the development of these children in the three development zones (cognitive,

social and motor). It turns out that the longer the child lives in the orphanage, the more beneficial the effect on the development of children with a light degree of intellectual disability in all three development zones. This is quite surprising, and therefore a very interesting result. This indicates that perhaps the experience associated with their sudden placement in the orphanage (shock, loneliness and a huge longing for a family home, regardless of the conditions in which the child lived) may block their development for some time. As time passes, their development appears to return to the right track as a result of finding support in educators and establishing a strong relationship with both them and their peers. This finding also demonstrates a certain plasticity of the intellectually disabled child who, despite their development difficulties, is able to develop their skills in a difficult living condition after getting used to their new situation.

Our research also shows that the first period of the child's stay in the institution is the most difficult. This is confirmed by noticeable differences in development between children who had lived in the orphanage for a short period of time and those who had stayed longer. Therefore, it is necessary for caretakers to intensify the activities in order to compensate for existing developmental shortcomings so that these children, despite their difficult situation, show the best possible development.

### Conclusions

The most important conclusions from the research are listed below:

1. There were no differences in the untapped development potential between children living in orphanages and those living in their family homes. Thus, staying in an orphanage does not adversely affect the development of children with a light degree of intellectual disability.
2. The current level of development in all three zones of development of children with a light degree of intellectual disability is similar between those living in orphanages and in family homes. This finding suggests that the orphanage can represent a positive development environment for these children.
3. The best developed zone in all three groups of children examined was motor development.
4. Initially, staying in an orphanage has a negative impact on the child's development, but as their period of stay increases they return to a normal development path.

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