



## Original Article

## Comparison of Participation in Life Habits in 5–11-Year-Old Blind and Typical Children

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### ABSTRACT

**Background:** Participation is defined as involvement in life situations leading to skill development, experimentation, and socialization. Children with visual impairment seem to be at risk because of their limitations when it comes to taking part in daily activities. This study aimed to compare the participation in life habits of children with blindness with their normal peers.

**Methods:** This study is quantitative, cross-sectional, and comparative, and used convenience sampling for a pilot study. Eleven children with blindness and nine normal children were evaluated with a life-habit questionnaire. The data were analyzed by SPSS-21 software with the Mann-Whitney statistical test.

**Results:** There are meaningful differences between these two groups in overall participation, nutrition, communication, participation at home, mobility, responsibility, interpersonal relationships, education, and recreation. No statistical differences in health, personal care, social life, and work were obtained.

**Conclusion:** Blind children had lower participation in most areas of life habits compared to their normal peers. The differences can be attributed to differences in the necessary education and training, differences in the social contexts of both groups, and also hearing loss in some children, and improper items for activity according to the age of these children.

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### Introduction

Participation is defined as involvement in life situations, which includes life habits and social roles. The International Classification of Functioning, Disability and Health (ICF) has heeded to participation in a special way. A benefit of children's participation is to provide the conditions in which their skills and capabilities develop, enabling them to socialize [1] and helping them learn how to have friendly relations and improve skills to succeed at

home, in the community, and in life [2]. Young children are active social beings and active participants in life [3]. Although participation may mean different things to different people [4], improving participation in everyday life is one of the most meaningful rehabilitation outcomes for children with disabilities [5].

Vision plays an important role in a child's development especially in the first three years of life. Children use this sense to improve different skills, such as motor skills, stability and balance, and even communication. Children with visual impairment may show different problems, such as poor daily performance, decreased motivation, and even dropping out of school. In some cases, visual impairment leads to learning disability and attention

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deficit disorder [6], and all these problems seem to affect a person's social participation.

The World Health Organization (WHO) terms any visual disorder that hampers any daily function and is not reversible with glasses and conventional lenses as a visual impairment [1]. Visual impairment affects the visual system due to defects, diseases, or dysfunction [6], and it has been estimated that blindness in the world occurs every five seconds. Accordingly, there were 40 to 45 million blind people in 2004, while there were three times more incidents of other types of visual impairment, a large number of them occurring in low-income countries [7,8].

Few studies have been done on the participation of children with visual impairment. Bedell compared social and environmental factors affecting the social participation of 282 disabled children and 294 normal children (5 to 17 years) with the help of the "Participation and Environment Measure—Children and Youth" questionnaire, encompassing many subscales of participation, involvement, and the desire to change the set of normal activities at home, school, or community. The results revealed that there were significant differences in the rate of participation in social, physical, and cognitive activities among disabled and normal children [9]. Engel-Yeger and his colleagues compared the participation patterns among 70 children with visual and hearing impairments with normal children in the age group of 6–11 years. The results of this study suggested that children with visual impairment showed certain limitations in outside activities at school compared to peers and performed most of the duties with the help of others. Moreover, greater participatory limitations were observed among visually impaired children than hearing-impaired ones. The study also found that social factors such as age, maternal education, socioeconomic level of the family, and the environment of participation had important impacts on the participation and could help encourage children to increase their participation [1].

Owing to limited studies on the impact of blindness on the participation of children, especially in Iran, in the context that people have specific beliefs about persons with disability and the limited environmental accessibility of such people, the researchers decided to compare the participation of children with blindness and normal children of 5–11 years in Shiraz, Iran. Shiraz has only a limited number of special schools for children with any form of disabilities and that is why we based our study there.

## Methods

This study was quantitative, cross-sectional, and comparative in nature. The statistical population of this study included all normal and blind children who studied in primary schools in Shiraz city. Convenience sampling was used, and 11 children with blindness and nine normal children (20 participants in all) were selected.

The participants were those children studying at both Shouride Shirazi (special school for visually impaired children) and Nabovat (school for normal ones) in Shiraz.

The inclusion criteria for vision comprised having a visual acuity of more than 6.6 for healthy children and less than 3.6 for visually impaired children for both eyes; age between 5 and 11 years; and the children and their parents' desire to participate in the study. The exclusion criteria included physical problems and severe chronic mental problems, such as cerebral palsy, mental retardation, and visual acuity of more than 3.6 in one eye in the group of blind children. After filling a written consent form by parents, they were instructed how to complete the questionnaires. The questionnaires were delivered to the researcher the same day.

The demographic questionnaire included personal and family characteristics, such as age, gender, seizures, other sensory disabilities, educational level, number of family members, and the profession and educational levels of parents.

In addition, life-habit questionnaires were completed by parents. The overall purpose of these questionnaires was to collect information about the common habits of children at home, school, and in the neighborhood to evaluate 12 normal life habits, including nutrition, health, personal care, communication, participation at home, mobility, responsibility, interpersonal relationships, social life, education, work, and leisure. Parents responded to two questions per item; the child pointed to the degree of difficulty (easy, hard, with assistant, does not do, and non-applicable) and how much help a child needed (without help, assistive aides, adaptation of environment, with other person's assistance). The second question related to the rate of a child's care giver or child's own satisfaction regarding the performance of these activities (very unsatisfied, unsatisfied, moderately satisfied, satisfied, very satisfied). The scores were calculated for each field separately and the total score was arrived at using the formula  $(\sum \text{scores of each item} \times 10) / (\text{number of applicable items} \times 9)$ . All items except two acquired acceptable scores in content validity. All items had meaningful and good correlations with their part score ( $r > 0.39$ ). All parts also showed high correlation with the total score of the questionnaire ( $r > 0.5$ ). The ICC was more than 0.6 for all parts and acquired 0.87 for the total score of the questionnaire [2].

The statistical results were evaluated by SPSS-21 software, using a descriptive and analytical statistical non-parametric test (Mann-Whitney) with attention to a significance level below 0.05.

## Results

Seven boys and two girls along with three boys and eight girls participated in groups of normal and blind children, respectively (Tables 1 and 2).

The non-parametric test (Mann-Whitney) was used in addition to comparing the mean variables in the two groups, keeping in mind the small sample size. The results are shown in the following table (Table 3).

There were differences between typical children and children with visual problems. Children with blindness had lower nutrition, communication, participation in the

**Table 1:** Educational level of mothers and fathers in groups

| Status                       | Blind   |           | Normal  |           |
|------------------------------|---------|-----------|---------|-----------|
| Mother's education level     | Percent | Frequency | Percent | Frequency |
| Middle school or less        | 63.6    | 7         | 22.2    | 2         |
| Diploma or associated degree | 36.4    | 4         | 77.8    | 7         |
| Father's education level     | percent | Frequency | percent | Frequency |
| Under diploma                | 63.6    | 7         | 44.4    | 4         |
| Diploma or Associate Degree  | 36.4    | 4         | 55.6    | 5         |
| Total                        | 100     | 11        | 100     | 9         |

**Table 2:** Auditory and speech problems in groups

| Status             | Blind   |           | Normal  |           |
|--------------------|---------|-----------|---------|-----------|
| Hearing impairment | Percent | Frequency | Percent | Frequency |
| Hard of hearing    | 27.3    | 3         | 11.1    | 1         |
| No problem         | 72.7    | 8         | 88.9    | 8         |
| Speech problems    | Percent | Frequency | Percent | Frequency |
| Speechless         | 9.1     | 1         | 0       | 0         |
| Low problem        | 36.4    | 4         | 11.1    | 1         |
| No problem         | 54.5    | 6         | 88.9    | 8         |
| Total              | 100     | 11        | 100     | 9         |

**Table 3:** Statistical difference between two groups

| Scales  | Overall participation | Nutrition | Communication | Participation in the home | Mobility | Education                   | Responsibility |
|---------|-----------------------|-----------|---------------|---------------------------|----------|-----------------------------|----------------|
| P value | 0.001                 | 0.002     | 0.003         | 0.0001                    | 0.0001   | 0.024                       | 0.0001         |
| Scales  | Recreation            | Health    | Personal care | Social life               | Work     | Interpersonal relationships | -----          |
| P value | 0.001                 | 0.067     | 0.19          | 0.06                      | 0.211    | 0.004                       | -----          |

home, responsibility, and recreation levels, and a lower overall participation. It seems that gender and health conditions were not related to overall participation.

## Discussion

The main goal of this study was to compare the participation in the life habits of children with blindness and their normal peers. As emphasized earlier, participation is an important part of human life that makes people social beings. Statistical analysis showed that there were differences between two groups in the overall participation rate and also within parts of nutrition, communication, mobility, responsibilities, relationships, education, recreation, and participation in home affairs. However, there were no significant differences between the two groups in the case of self-care, social life, health, and work.

Communication skills are important for any form of participation. They help people get along in society and are essential for forming interpersonal relationships. The importance of mobility is also emphasized for participation, for, as we move we may participate more. Previous research had shown that difficulties in these spheres may result in lower life satisfaction among children with visual impairment [10].

Eriksson studied the participation in daily activities at school through a simplified version of the Ability Index of normal and visually impaired children, and there was no significant difference in the social partnership between the two groups. He compared children's functional ability,

including visual function, motor function, muscle tone, public health, social skills, cognitive function, behavioral problems, and communication skills [11]. Celeste compared the play behavior and social participation of a Slovenian visually impaired child with a similar but normal group in the American by Play Observation Scale. The results showed that the child had no restriction on play behavior and social participation, and had been exposed to social isolation less than American children [12]. Tadić and his colleagues used a qualitative research method to study children's own perspectives on living with a visual impairment and found that the importance of family and peer support, balancing independence, support and safety, the emotional burden and adjustment of living with a disability, concerns about education and job prospects in the future, functional restrictions and limitations, and an ongoing management of eye conditions were key issues for visually impaired children aged 12–17 years for social relationships, participation and acceptance, independence and autonomy, psychological and emotional well-being, aspirations and concerns about the future, functioning in the home, at school, and at leisure, and treatment of eye condition [13]. Gronmo reported significant differences between blind students and students without visual impairment in school and community physical activities [14].

On the other hand, the parents of children with visual impairment have mentioned some barriers to the participatory activities of their children. Hand reported that parents of blind children were concerned about their children's fear of injury, lack of available activities,

inability of physical educators to include blind children, lack of transportation, and the children's inability to see instructions. The parents of visually impaired children also mentioned the lack of trained physical educators, opportunities for physical participation, and peers with whom to participate [15]. Silva mentioned that visual loss (at any level) led to functional impairment, limiting participation and everyday performance, and could interfere with independence, autonomy, and the quality of life but environmental adaptations could be beneficial and could increase functions. He investigated participation through group activities [16]. Woodmansee reported that a higher percentage of children with disability reported not participating in their preferred activities [17]. Monbaliu and colleagues assessed the participation and activities of children with physical disability with the Gross Motor Function Measure (GMFM), the Functional Mobility Scale (FMS), the Jebsen Taylor Hand Function Test (JTT), the ABILHAND-Kids Questionnaire (ABIL-K), and Life Habits Kids. Their results indicated lower functional abilities and participation with increasing dystopia in children with dyskinetic CP. Field reports and colleagues indicated that the enabling of independent mobility could improve participation in everyday life [18,19].

It seems that the parental educational level and income have an effect on a child's achievements [20-22]. The more success you achieve, the more likely you are to participate [23,24]. So, we believe that parental education and income are effective factors for children's participation.

Nutrition has an important effect on school participation. In 2012, Phyllis showed that better nutrition led to better participation in school [25].

In the present study, no differences were observed in certain participatory items between the two groups of children. One of the possible causes was probably related to the different needs of people, as each person naturally took the necessary measures for self-care and health maintenance. This indicated that both blind and normal children were able to take care of themselves, although it seems that participation in life habits in children with blindness were performed specially as compensatory skills. On the other hand, considering the different aspects of participations, each school had modified students' activities according to the students' abilities. Hence, it was indicated that these two groups were not under the same education and training programs at school.

In addition, concerning the subscale of work (job) and according to Nobakht's study, it was stated that one reason could be the lack of anything equivalent to this item in relation to the children's age. Generally, in Iranian culture, children of this age do not engage in jobs; in this study, none of the children in the two groups had any job other than education [26].

Besides, three out of 11 blind children had hearing impairments (unilateral or bilateral hearing loss). Accordingly, it can be assumed that the lower participation rate of children of this category in a particular activity can also be due to blindness accompanied by hearing loss, and this, as a confounding factor, affected the final result.

It needs more attention in future research.

Considering that an individual's participation is an important factor in improving the quality of life, it affects many aspects of people's life. Specialists must provide the necessary training to families with such children. It is also required that teachers, as effective people in schools, also pay special attention to children's social development as well as their scientific development.

Among the limitations of the present study, small sample size, and the lack of some parents' assistance should be mentioned. For that reason, it is suggested that a larger sample size should be used in future studies.

## Conclusion

Blind children have lower participation in most areas of life habits compared to normal peers. Indifferences were seen in the health, personal care, social life, and working subscales. The differences can be attributed to differences in education and training, differences in the social contexts of both groups, and the existence of hearing loss in some children, as well as inappropriate work items, given the age of these children.

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**Conflict of interest:** None declared.

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