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# Body awareness in children with mental retardation

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### ABSTRACT

The body awareness of 124 toddlers with mental retardation and of 124 children developing normally matched to them on age and gender was examined. Twenty-nine of the children with mental retardation were diagnosed as Down syndrome (DS). The 'Pointing and Naming' Test of Bergès and Lézine [Bergès, J., & Lézine, I. (1978). *Test d'imitation de gestes [Imitation test of gestures]* (2nd ed.). Paris: Masson] was used to measure vocabulary skills on body parts. Results indicated that (a) the test used is reliable in terms of internal consistency; (b) children developing normally performed better than children with mental retardation on this test; (c) there were no significant differences in performance on this test between genders for the whole group; (d) children with DS performed as well as children with mental retardation of unknown origin on receptive vocabulary. On expressive vocabulary, they performed worse.

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## 1. Introduction

Researchers disagree on the content of the term body scheme. This becomes clear through the multiplicity of terms used in the literature. This study is based on the trilogy of Kugel (1989) to explain the term body scheme. Kugel (1989) divides the body scheme in 3 components: body plan (motor), body idea (emotional) and body awareness (cognitive).

The *body plan* is the organised total of all sensorial and motor structures which determines the automated human behaviour (Kugel, 1989, p. 27). The human behaviour occurs thus partially unconscious and automated. Through a long learning process of repetition to conditioning or habituation and custom formation the behaviour is learned. Many of our behaviours and

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motor activities are automated. That's why we sometimes do not even realise how we do them (Kugel, 1989).

*Body idea* is the subjective judgement, which the child makes through the – positive or negative – criticism of somebody else concerning: the own capacities and the boundaries of the own capacities; and the qualities or specialties of the own physical figure and appearance (Kugel, 1989, p. 115). The subjective opinion is the most important factor for developing the body idea. This opinion can differ from the objective reality.

The *body awareness* is the information a child receives through perception, or through representation or mental picture which a child can obtain. This information involves aspects of: (a) the own physical appearance; (b) movements, as currently performed, respectively can or wants to perform concerning direction, performance and intensity; (c) the position of the body and the body parts in space, and their position towards each other; and (d) the own way of perceiving of what is and happens in his environment (through feeling, hearing or seeing) (Kugel, 1989, p. 69).

In this study we focused on one component of the body scheme, namely on body awareness among 3–6-year-old children with intellectual retardation. These children visit schools which are adapted to the specific educational needs of children with moderate to severe intellectual retardation. The importance of body awareness in this group of children appears from the curricula of motor development and physical education of these schools for toddlers. One of the aims of the curricula is that children are capable of pointing, recognizing and/or naming body parts of their own body, on other people's body or on a picture (Flemish Ministry of Education, 1998). Through moving and acting, impressions and experiences are acquired which help to form body awareness (Simons & Lemmens, 2005).

### 1.1. Language development

Next to sensory-motor experiences, language development is an important aspect of learning which is closely connected to the development of body awareness (Vallaey & Vandroemme, 1995). Conscious moving and language are coherent concepts. Involving the language development in connection with body parts Gallahue (1982) stated that 3-year-old children who are developing normally can point out and name the most important parts of the head (ears, eyes, nose, mouth, teeth and hair), the trunk (stomach, back, buttocks, bottom and genitals) and the limbs (arms, hands, fingers, thumbs, legs, knees, feet and toes). By age 4, children who are developing normally, can point out and name more differentiated parts of the head (face, nostrils, cheeks, chin, tongue, lips and throat), the trunk (chest, navel and shoulders) and the limbs (elbows, little fingers, knuckles, nails, thighs, ankles, big toes and little toes). Five-year-old children who are developing normally can point out and name almost all parts of the head (forehead, eyebrows, eyelashes, earlobes, nostrils and neck), the trunk (stomach, hips, loins and waist) and the limbs (palm of the hand, back of the hand, index finger, middle finger, ring finger, forearm, wrists, calves, heels, soles and insteps) (Gallahue, 1982). According to Bergès and Lézine (1978) 3-year-old children can name the hairs, hands, feet, mouth, ears, eyes, nose, back, stomach, arms, legs and head. The parts of the lower limbs are more easily pointed out by these children. In addition, Bergès and Lézine (1978) mention that 3-year-old children name the body parts more easily on a doll than on their own body. Three-year olds often mime when asked to point at a specific body part: they close their eyes or open their mouths for example. Body parts which are not well known, are vaguely pointed at. Four-year-old children can correctly point at and name their teeth, shoulders, knees, forehead, throat, cheeks, thumbs, chin, nails, lips and heels. For 5-year olds, pointing at and naming of elbows, eyelashes, eyebrows, wrists and nostrils goes without problems. Eyelashes and eyebrows are often swapped by these children (Bergès & Lézine, 1978).

There were no specific wordlists found in relation to body awareness for children with intellectual retardation.

Delays in language development are highly prevalent in persons with intellectual disability, whatever the conditions of assessment are (comprehension or production) or the area considered (e.g., vocabulary, semantics, syntax, or morphology) (Facon, Facon-Bollengier, & Grubar, 2002). Abbeduto, Davies, and Furman (1988) found that children with mental retardation had serious deficits in receptive linguistic competence in comparison to children who are developing normally. These results

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