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**ORIGINAL RESEARCH PAPER**

## **SELF-ASSESSMENT OF PARENTS' COMPETENCES IN INFANT FLOATING**

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### **Abstract**

*Many parents are keen to swim with infants, but they often misunderstand the nature of infant floating and are unable to do it properly. Some of parents lack the knowledge, skills and practical abilities to properly and appropriately handle the aquatic environment. The self-assessment of parental competence plays an important role in determining the weaknesses and strengths of various components of parent competences in infant swimming. Therefore, our study was aimed at studying and analyzing the self-assessment of parents' competences in infant floating. Based on the research results it would be possible to develop a more accurate model for the enhancement of the parents' competences required for infant floating and put forward recommendations for improving parents' competences. A self-assessment of the parents' competences in infant floating was conducted from the beginning of September 2017 until the end of October. 112 parents' participated voluntarily in the self-assessment of parents' competences in infant floating. The results of the self-assessment of parents' indicate that all of the components proposed by the scientists that influence parents' competences in infant floating play an important role. It could also be surely concluded that at present, the overall level of parents' competence in infant floating in the opinion of parents' is middling or some components of competence is little above middling. In general, all the parents' are of the opinion that parents should definitely supplement or acquire additional knowledge, skills and abilities in order to increase their level of competences in infant floating in order to be able to effectively apply their competences during independent lessons with their infants.*

**Keywords:** *parents' competences, self-assessment in infant floating.*

## **Introduction**

The beneficial effects of water on the human body have been known since ancient times. No other physical activity can be compared to lessons in the aquatic environment, since weightlessness and the horizontal position of the body help to relieve the spine. Frequent movements in such a position help the spine to feel a completely different load than in a vertical position in which human spends 2/3 of his life and it relieves the back and the tension between nerve endings (Barczyk, Skolimowski & Zawadzka, 2005). In addition, all regular swimming lessons have a multifaceted effect on human physical development, CNS and respiratory systems, helping to improve one's stance. Slow and rhythmic movements in the water improve blood supply and metabolism, strengthen the blood vessel system (Ahrendt, 1997; Sigmundsson & Hopkins, 2009).

Nowadays activities where children and parents participate together are becoming increasingly popular. It is a good opportunity to be together, socialize and enjoy the health benefits. (Francoise, 2014). One cannot always find the time, place, and the desire to do it. Therefore, the child's age could be highlighted here, as infants cannot handle themselves independently without parental assistance and presence (Meredith, Hicks, & Stephens, 2001). There are a variety of physical activities but in this article we pay particular attention to swimming.

The water environment is not alien to infants, since they had already been spent about nine months in such an environment. (Johnson, 1996). And if there is an opportunity to attend classes with an infant in the pool, parents often use it. It is also important to emphasize not only the well-being, but also the therapeutic benefits, since classroom activities are conducted under the guidance of a physiotherapist. It is very important how parents feel during these lessons and how they are able to complete the exercises with the infant independently and orient themselves in such a specific aquatic environment. (Ahrendt, 2002; Zhao et al, 2005; Федулова, 2011). Many parents are keen to swim with infants, but they often misunderstand the nature of infant floating and are unable to do it properly. They lack the knowledge, skills and practical abilities to properly and appropriately handle the aquatic environment. (Stallman, 2014).

The concept of competence has many different explanations, but in general we can relate it to abilities who based on knowledge, choose the most appropriate means for the given situation, act properly and act appropriately in concrete situation (Koçe, 2003).

It is important to help parents learn the proper infant swimming techniques so that they can apply it independently in the future during the child's development with a sense of security and conviction (Meredith, Hicks, & Stephens, 2001; Jovanovich, 2002). The self-assessment of parental competence plays an important role in determining the weaknesses and strengths of various components of parent competences in infant swimming (Stallman, 2014). Therefore, our study was aimed at studying and analysing the self-assessment of parents' competences in infant floating.

During the study, there was a theoretical possibility that the self-assessment structured based on the notions and opinions of different scientists and authors regarding competence in infant floating could produce significantly differing assessments in terms of parents' self-assessment. Based on the research results it would be possible to develop a more accurate model for the enhancement of the parents' competences required for infant floating and put forward recommendations for improving parents' competences.

### **Material and methods**

A self-assessment of the parents' competences level in infant floating was conducted from the beginning of September 2017 until the end of October and was organised at various branches of Riga Health Centre: RHC Kengarags, Imanta, Bolderaja and Ilguciema branch. 112 parents participated voluntarily in the self-assessment. It was found that 5 self-assessments from parents were invalid as they did not follow the proper instructions. As a result, 107 self-assessments from parents' were finally processed and analysed. The parents were on average  $30.8 \pm 0.5$  years old. 91.8% of the parents were women and 8.2% were men. The self-assessment on parents' competences was published on the Internet where each parent could voluntarily complete and submit the self-assessment online at a convenient for them time.

In order to enable the objective self-assessment of Parents' responses to the self-assessment and process the statistics mathematically, each item has five variants of responses expressed on a five-point scale (Raščevska, 2004; Kroplijs & Raščevska, 2010). The arithmetic mean for each item was determined by gathering the responses given on a five-point scale and carrying out a statistical analysis. The mean, standard deviation and mode was used to process the numerical data gathered from the responses.

**Table 1**

Self-assessment statement content of theoretical argument about parents' competence in infant floating

AUTHORS	COMPETENCE IN INFANT FLOATING					
	Knowledge of infant floating classes content and its understanding	Knowledge of the significance infant floating and their impact of infants' health	Knowledge of infant floating	Skills in infant floating	Practical abilities in infant floating	Observance of safety in infant floating
Johnson, 1996	X	X	X			
Ahrendt, 1997		X				
Meredith et al, 2001	X		X	X	X	
Ahrendt, 2002	X	X	X	X	X	X
Jovanovich, 2002	X		X			X
Zhao et al, 2005	X	X	X			
Sigmundsson, & Hopkins 2009	X	X	X			
Федулова, 2011	X	X	X	X	X	X
Francoise, 2014	X	X		X		X
Stallman, 2014				X		X
Items of self-assessment	4, 5, 6, 8, 12, 13	4, 7, 16, 23, 27	8, 9, 14, 15, 24, 28	10, 17, 18, 19, 25, 29	11, 20, 21, 26	22, 23, 24, 25, 26,30

The choice of the items posed, and the design of the self-assessment was based on the works, opinions and methodological concepts worked out by various scientist and authors. The scientific concepts have been summarized and illustrated in the form of a table (refer Table 1),

- Knowledge of infant floating class's content and its understanding (Johnson, 1996; Meredith, Hicks, & Stephens, 2001; Ahrendt, 2002; Jovanovich, 2002; Zhao et al, 2005; Sigmundsson & Hopkins, 2009; Федулова, 2011; Francoise, 2014).
- Knowledge of the significance infant floating and their impact of infants' health (Johnson, 1996; Ahrendt, 1997, 2002; Zhao et al, 2005 Sigmundsson & Hopkins, 2009; Федулова, 2011; Francoise, 2014).

- Knowledge of infant floating (Johnson, 1996; Meredith, Hicks, & Stephens, 2001; Ahrendt, 2002; Jovanovich, 2002; Zhao et al, 2005; Sigmundsson & Hopkins, 2009; Федулова, 2011).
- Skills in infant floating (Meredith, Hicks, & Stephens, 2001; Ahrendt, 2002; Федулова, 2011; Francoise, 2014; Stallman, 2014).
- Practical abilities in infant floating (Meredith, Hicks, & Stephens, 2001; Ahrendt, 2002; Федулова, 2011).
- Observance of safety in infant floating (Ahrendt, 2002; Jovanovich, 2002; Федулова, 2011; Francoise, 2014; Stallman, 2014).

## Results

Components and their significance that impact the competences of parents' in infant floating and their self-assessment we can see in figure 1 and table 2.

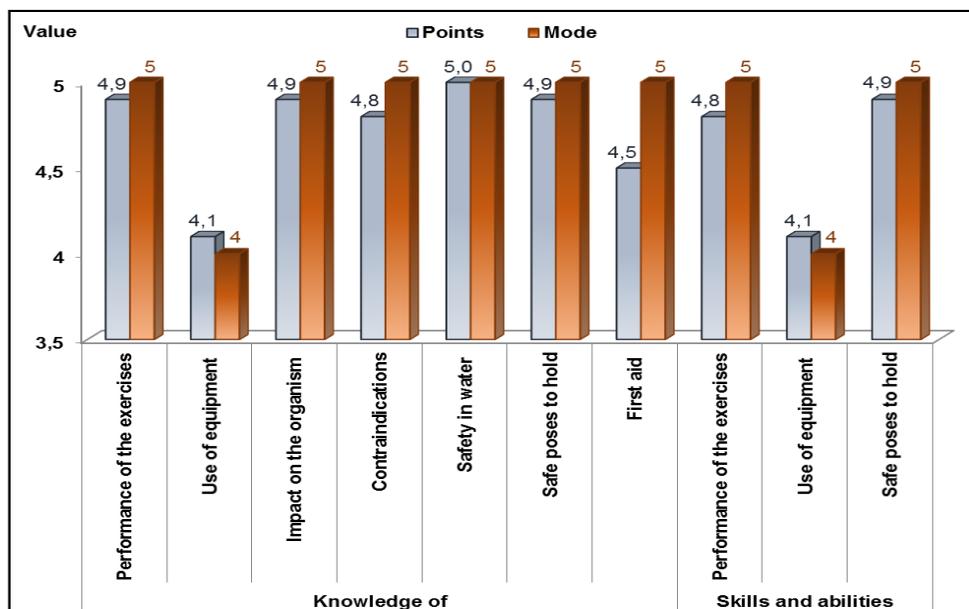
The self-assessment of importance of competence components according to the results were ranked on a scale of 5 points where 1 was unimportant, 2 – less important, 3 – more or less important, 4 – rather important and 5 – very important (Figure 1, Table 2).

**Table 2**

Components and their significance that impact the competences of parents' in infant floating according to results of parents' self-assessment (n=107)

Components of competence		Mean arithmetical (points) ±standard deviation	Mode
Knowledge about	performance of the exercises	4.9±0.04	5
	use of equipment	4.1±0.1	4
	impact on the organism	4.9±0.03	5
	contraindications of floating	4.8±0.04	5
	observance of safety in water	5.0±0.01	5
	baby safety of to hold in water	4.9±0.03	5
	first aid	4.5±0.1	5
Skills and abilities	performance of the exercises in water	4.8±0.04	5
	to use of equipment and means	4.1±0.1	4
	performance of safe poses to hold in water	4.9±0.03	5

According to the parents' self-assessment. They should pay a great deal of attention to safety on the water while carrying out infant floating lessons independently on their own.



**Figure 1.** Components and their significance that impact the competences of parents' in infant floating (n=107)

The level of competence of parents in infant floating according to their own self-assessment can be seen in figure 2 and table 3.

**Table 3**

Level of parents' competences in infant floating according to results of parents' self-assessment (n=107)

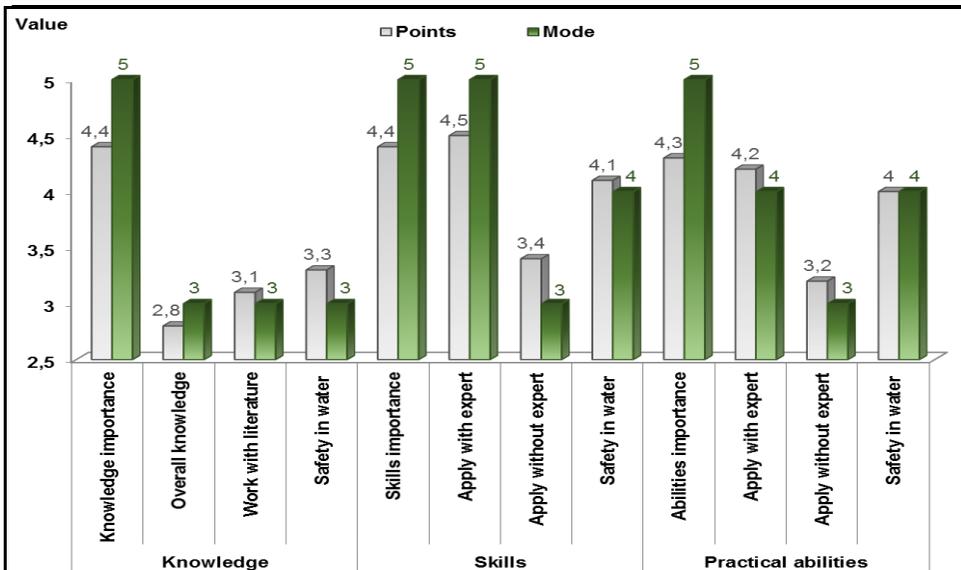
Components of competence		Mean arithmetical (points) $\pm$ standard deviation	Mode
1.		2	3
Knowledge	the importance of parents' knowledge of infant floating that impacts their ability to independently perform exercises with infants	4.4 $\pm$ 0.1	5
	overall knowledge of infant floating	2.8 $\pm$ 0.1	3
	additional knowledge acquired by parents through gathering of information on the internet and literature on infant floating that describe the exercises and provide methodological instructions	3.1 $\pm$ 0.1	3
	parents' theoretical knowledge of observance of safety in water	3.3 $\pm$ 0.1	3
Skills	the importance of parents' overall skills in infant floating that impacts their ability to independently perform exercises with infants	4.4 $\pm$ 0.1	5
	parents' skills in using those independently during infant floating lessons in the presence of an expert	4.5 $\pm$ 0.1	5
	parents' skills in using those independently during infant floating lessons in the presence without expert	3.4 $\pm$ 0.1	3
	parents' skills in following safety procedures in water while independently carrying out lessons in infant floating	4.1 $\pm$ 0.1	4

**Table 3 (Continued)**

1		2	3
Practical abilities	the importance of parents' overall practical abilities in infant floating that impacts their ability to independently perform exercises with infants	4.3±0.1	5
	parents' practical abilities in using those independently during infant floating lessons in the presence of an expert	4.2±0.1	4
	parents' practical abilities in using those independently during infant floating lessons in the presence without expert	3.2±0.1	3
	parents' practical abilities in following safety procedures in water while independently carrying out lessons in infant floating	4.0±0.1	4

Level of competence of parents in infant floating according to the self-assessment results were ranked on a scale of 5 points where 1 was low, 2 – under middling, 3 – middling, 4 – above middling 5 – good (Figure 2, Table 3).

Many parents have marked their level of knowledge as "middling" during the self-assessment. This middling level of knowledge, skills and practical abilities as well can significantly affect them in carrying out infant floating lessons independently.



**Figure 2.** Level of parents' competences in infant floating according to mean results of parents' self-assessment (n=107)

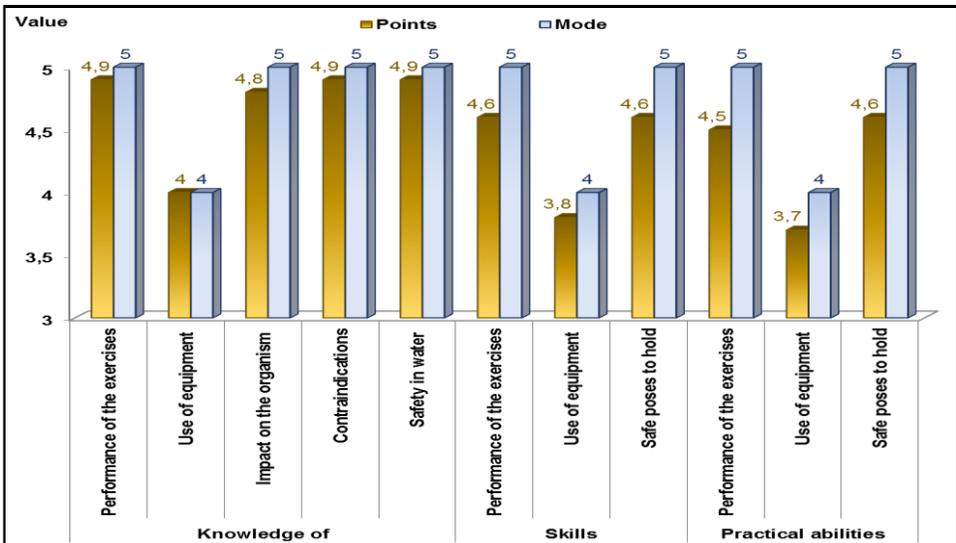
Components to be additionally acquired or enhanced in order to improve the level of parents' competences in infant floating according to the results of parents' self-assessment can be seen in figure 3 and table 4.

**Table 4**

Competences components of infant floating in order to improve the level of parents' competences in infant floating according to results of parents' self-assessment (n=107)

Components of competence		Mean arithmetical (points) ±standard deviation	Mode
Knowledge	about performance of the exercises	4.9±0.04	5
	about use of equipment	4.0±0.1	4
	about impact on the organism	4.8±0.05	5
	about contraindications of floating	4.9±0.05	5
	about observance of safety in water	4.9±0.03	5
Abilities	to performance of the exercises in water	4.6±0.1	5
	to use of equipment and means	3.8±0.1	4
	to performance of safe poses to hold in water	4.6±0.1	5
Skills	to performance of the exercises in water	4.5±0.1	5
	to use of equipment and means in infant floating	3.7±0.1	4
	to performance of safe poses to hold in water	4.6±0.1	5

Analysing the self-assessment results the components that need to be enhanced for improving the parents' competences have been ranked on a scale of 5 points where 1 was no, 2 – rather no, 3 – minimum, 4 – rather yes and 5 – yes (refer figure 3 and table 4).



**Figure 3.** Competences components of infant floating in order to improve the level of parents' competences in infant floating (n=107)

Parents have responded positively during the self-assessment regarding enhancing their knowledge and therefore feel that they should definitely supplement their theoretical knowledge. Parents also believe that attending

lessons with specialists would help them further apply the knowledge acquired and information received in further practice during their lessons with infants independently. Parents believe that the more lessons they attend with professionals. The better they enhance their practical skills in infant floating.

## Discussion

Analysing the self-assessment of significance of competence components according to the parents' self-assessment it can be seen that the only difference in the self-assessment are components related to the use of additional equipment and accessories as in all cases in terms of knowledge. Skills as well as practical abilities parents have rated this component as "rather important" and not "very important" Very important self-assessment was given to the components related to safety procedures and holding the infant safely in the water. It means that practically all the 107 respondents indicated that it is an important component that significantly affects the parents' competence in infant floating. The authors (Ahrendt. 2002; Zhao et al. 2005; Федулова. 2011) also emphasize in their literature that it is very important for parents to orientate themselves in a specific water environment and to be safe when they are in the water with infant.

All other components range between 4.5 and 4.9 points. That can on the whole be interpreted as very important and their self-assessment "rather important" and "very important" is very close to the maximum self-assessment (refer figure 1 and table 2).

Reviewing the mode values of significance of competence components, was found that the results are quite similar to the arithmetic mean. According to the modes it could be concluded that the component related to the use of additional equipment and accessories (knowledge, skills and abilities) is 4. It indicates that the most common response was "rather important". On the other hand, modes for all the other components were 5 which mean that the most common self-assessment was "very important" (refer figure 1 and table 2).

Analysing the level of competence of parents in infant floating according to their own self-assessment it can be seen that the significance of the competences (significance of knowledge, skills and practical abilities) that is necessary for parents have been rated as more than the "above middling" – 4 points i.e. knowledge. Skills and practical abilities have been rated from 4.3 to 4.4 points. The self-assessment of parents overall theoretical knowledge of infant floating was the lowest. The arithmetic mean was 2.8 points, which is between "under middling" and "middling". Among knowledge of components additional knowledge acquired by

parents through independent gathering of information on the Internet and literature on infant floating (3.1 points), as well as theoretical knowledge of observance of safety procedures in water (3.3 points), were also assessed just a bit above the self-assessment “middling”. A similar self-assessment can be seen also for skills and practical abilities related to independently using skills and practical abilities during infant floating lessons in the absence of an expert – 3.4 points and 3.2 points. self-assessment of skills and practical abilities of components related to following safety procedures in water while independently carrying out lessons in infant floating was also relatively similar – skills 4.1 points and practical abilities 4.0 points. On the other hand respondents assessed the usage of skills and practical abilities independently during infant floating lessons in the presence of an expert a lot higher than the other competences. Parents evaluated the usage of skills in the presence of an expert as 4.5 and the usage of practical abilities as 4.2. It meant that the arithmetic mean of the parents’ self-assessment was between “above middling” and “good” (refer figure 2 and table 3). Similarly, authors (Meredith, Hicks, & Stephens, 2001; Jovanovich, 2002) write that it is important to help parents learn the correct new-born swimming skills in these common activities with infant swimming specialists.

Analysing the mode results of parents’ self-assessment of competences one can observe a picture similar to that of the results of the arithmetic mean. The lowest mode value – 3 was for the component related to overall knowledge of parents of infant floating, additional knowledge acquired by parents through independent gathering of information on the Internet and literature, theoretical knowledge of observance of safety procedures in water and skills and practical abilities related to working independently during infant floating lessons in the absence of an expert. It could be concluded from the mode values that the most common response value was “middling”. Parents’ self-assessment of skills and practical abilities of components related to observance of safety procedures in water as well as use of practical abilities independently during infant floating lessons in the presence of an expert were rated as 4 which indicates that the most common response of this component was “above middling”. On the other hand, usage of skills independently during infant floating lessons in the presence of an expert has been rated in the parents’ self-assessment with a mode 5. This means that the most common response in the parents’ self-assessment was “good”. The overall opinion of parents regarding significance of overall knowledge, skills and practical abilities in infant floating that impacts their ability to independently perform exercises with infants was assessed with a mode of 5 which once again emphasises the

very high importance of the level of this competence (refer figure 2 and table 3). Analysing the results of the parents' self-assessment of components to be additionally acquired or enhanced in order to improve the level of parents' competences in infant floating it can be seen that the self-assessment of enhancement of the competence related to the use of equipment and accessories ranges between 3.7 to 4.0 points according to the arithmetic mean i.e. "rather yes". All the other competence components in the parents' opinion were rated from 4.5 to 4.9 points which in accordance with the self-assessment scale is between "rather yes" and "yes". On the other hand, parents would be willing to additionally acquire and enhance their knowledge of such competence components such as knowledge of performance of exercises, of contraindications of swimming and of observance of safety procedures in water. The arithmetic mean of the responses is 4.9 points which is maximally close to "yes we need to additionally acquire or enhance" (refer figure 3 and table 4).

Analysing the mode values of components to be additionally acquired or enhanced in order to improve the level of parents' competences in infant floating it can be seen that the most common response of parents for knowledge, skills and practical use of equipment and accessories is "rather yes" with a value of 4. In turn the majority of parents have expressed a "yes" to additionally acquire or enhance all the other components to improve their competences in infant floating. This is affirmed by the mode value of 5 highlighting the necessity for their enhancement (refer figure 3 and table 4).

## Conclusions

Having analysed the results of the research, we can draw conclusions about the importance and level of parents' competence in infant floating.

The results of the self-assessment of parents indicate that all of the components proposed by the scientists and authors that influence parents' competences in infant floating play an important role. It could also be surely concluded that at present, the overall level of parents' competence in infant floating in the opinion of parents' is middling or some components of competence is little above middling. In general, all the parents are of the opinion that parents should definitely supplement or acquire additional knowledge, skills and abilities in order to increase their level of competences in infant floating in order to be able to effectively apply their competences during independent lessons with their infants.

According to the results of the research we can conclude that in order to increase the level of parents' competence in the infant floating, it is necessary to pay attention to the acquisition or improvement of the

following main components: Knowledge about performance of the exercises, about impact on the organism, about contraindications of floating, about observance of safety in water, skills and abilities to performance of the exercises in water, to performance of safe poses to hold in water.

Based on the research results it would be possible to develop a more accurate model for the enhancement of the parents' competences required for infant floating and put forward recommendations for improving parents' competences.

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