



## Assessment of Family Functionality from the Perspective of a Nurse and the Students of Medical Science

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### Abstract

The main topic of this article is the assessment of family functioning from the perspective of nurses and students of medical science. The evaluation of family functioning is most often carried out in communication with parents as well as with young adults during the visiting service in families and in the counseling activities of the community nurse, but it can also be used in other areas of social activity. The authors used APGAR family scores to assess family function. The study was attended by 151 respondents - students of the study programs physiotherapy and emergency health care. Of the total number, 117 families were evaluated as fully functional, 22 with mildly impaired function and 12 dysfunctional families. Using Fischer's exact test, the authors verified whether there was a significantly different assessment of the functionality of the respondents' families in relation to gender, age and study program and their mutual combinations. A statistically significant difference was recorded only in men aged 19 to 20 years, for whom the results of the evaluation of family function were significantly better ( $p=0.0116$ ) compared to other determining factors. In conclusion, the authors state that the results of the evaluation of the APGAR score functionality depend on the age of the respondent and show a highly subjective approach to evaluation. They recommend a combination of several methods to objectify the evaluation of family functionality.

**Keywords:** Cognitive impairment; Primary pediatric care; Primary health care

### Introduction

The family is a bio psychosocial system that is influenced by the development and state of society [1]. The family has several functions. Above all, it is reproductive, educational, economic and emotional. Part of the nurse's work in primary health care is to evaluate the functioning of the family, as the family has an irreplaceable place in the process of socialization of the child and all its members. The term healthy family is rather medical, which expresses the state of health of its members. A healthy and functional family ensures the optimal performance of all the functions that the family has in society. A nurse working in the field of primary health care focuses on:

- Assessment of family functioning,
- Clarification of family relationships,
- Identification of the family's strengths and weaknesses,
- An assessment of the overall level of health of the family and the health of its members,
- Assessment of the state of the family's environment,
- Identification of risk factors that may affect the health of the family and may lead to illness.

The evaluation of the functionality of the family, as well as the above-mentioned attributes, is carried out within the framework of communication with parents as well as with young adults during the visiting service in families and within the counseling activities of the community nurse. In their publication, A. Cox and A. Bentovin summarized questionnaires and scoring systems that serve as a tool for assessing family relationships and activities [2]. Goodman focused on assessing the emotional and behavioral problems of children and adolescents in families (The Strengths and Difficulties Questionnaires) [3]. Crnic and Greenberg developed a scale to assess the frequency and intensity of selected everyday parent's problems (The Parenting Daily Hassles Scale) [4]. Davie et al developed a Home Conditions Scale [5]. Smith created The Family Activity Scale [6]. An important Slovak pediatrician Prof. Svetozár Dluholucky created an evaluation of the social score of family functioning by assessing risk factors, which he identified as penalty points [7]. In

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**Table 1:** APGAR family score.

| Parameter description  | 2 points almost always          | 1 point sometimes                       | 0 points almost never       |
|--|---------------------------------|---|-----------------------------|
| I am happy with the help my family gives me when I have problems   | 2                               | 1                                       | 0                           |
| I am satisfied with the way my family handles common issues and how it helps me solve my problems                      | 2                               | 1                                       | 0                           |
| I have found that my family accepts my desire for new activities or life style changes                                 | 2                               | 1                                       | 0                           |
| I am satisfied with the way my family shows me affection and how it responds to my feelings, e.g. anger, love, sadness | 2                               | 1                                       | 0                           |
| Rating   | 10 – 7 Fully functioning family | 6 – 4 Slightly impaired family function | 33 – 0 Dysfunctional family |

1978, Gabriel Smilkstein introduced the APGAR Family Score to assess adult satisfaction with family social support. It drew its name from a 5-parameter measure of perceived family support in the areas of adaptation, partnership, growth, affection and resolution [8]. The position of the family in society is changing, but its undeniable importance for the upbringing and healthy development of its members remains and is still of interest to doctors, nurses and other health professionals.

### Material and Methods

In our study, we focused on finding out the functionality of the physiotherapy and emergency healthcare students families. We addressed 151 respondents - students of health sciences in the study programs physiotherapy and emergency health care. Respondents - physiotherapists accounted for 86.05% of the total number of respondents and 13.91% were paramedics - students of emergency care. 77.48% were women and 22.52% were men. The age of women ranged from 19 to 26 years, the age of men from 19 to 31. The average age of women was 19.57 years and men 20.00. The modus was 19 years old. The method of information collection was the APGAR family score methodology. In the process of analyzing the results, we monitored the frequency of responses to individual parameters. For the purposes of evaluating the functionality of families in relation to the sex, age and study program of the respondents, we used Fisher's exact test. We used a two-proportion match test to verify the significance of the differences in the percentage of the score achieved with respect to gender, age, and study program. At the end of the analysis, we evaluated the differences of the respondents in the individual parameters of the Marascuilo procedure (Table 1).

### Results

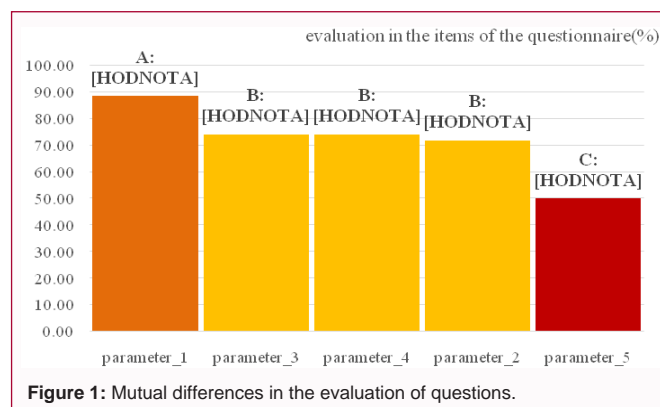
In the answers of the respondents, 117 (77.48%) families were diagnosed as fully functional, 22 (14.57%) families with mildly impaired functionality and 12 (7.95%) as dysfunctional families. The number of respondents from fully functional families is statistically the largest in the group, significantly exceeding the sum of respondents of the other two categories (test of the agreement of the share with the given value:  $z=16.1690$ ;  $skrit=2.3263$ ;  $p=4.171.10-59$ ). Using Fischer's exact test, we verified whether the evaluation of the functionality of the respondents' families in relation to gender, age and study program and their mutual combinations is significantly different.

We recorded a statistically significant difference only in men aged 19 to 20 years, for whom the results of the evaluation of family function were significantly better ( $p=0.0116$ ) compared to other determining factors. We did not find a dysfunctional family in this group of respondents. Four respondents (12.90%) showed slightly impaired functionality in families and 27 respondents (87.10%) were from fully functional families. In all other cases, we did not notice a significant difference in diagnosing family function with respect to

the given factors (Table 2). However, the evaluation of a 20-year-old woman from the physiotherapy study program, whose score is equal to 0, deserves attention. We used a two-proportion match test to verify the significance of the differences in the percentage value of the achieved score in each parameter of the APGAR score with respect to the sex, age and study program of the respondents. We recorded a statistically significant difference between the sexes in parameter 5, where men showed more significant degree of satisfaction with the amount of time their family spends together than women ( $p=0.0055$ ). When evaluating individual parameters in relation to the age of the respondents, we did not record statistically significant values.

Subsequently, we compared the evaluation of APGAR family score parameters in relation to the study program (Table 3). Physiotherapists receive significantly more support from their families than paramedics when they have problems ( $p=0.0163$ ). Physiotherapists are much happier with the way their families deal with common issues and how they help them solve their problems ( $p=0.00397$ ). However, families of physiotherapists are much less likely to accept their desires for new activities or lifestyle changes than families of paramedics ( $p=0.0332$ ). Physiotherapists are more satisfied with the way their families show affection and how they respond to their feelings, e.g. anger, love, sadness, as paramedics ( $p=0.0097$ ). They are also significantly more satisfied with the amount of time their families spend together ( $p=0.0191$ ).

Finally, we compared the differences in ratings between the individual parameters of the APGAR score. It tells the result of the Marascuilo procedure, a post hoc test in the share compliance test (Figure 1). The evaluation results in parameter 1 (88.41) greatly exceeded the evaluation in other parameters. Respondents expressed a high degree of satisfaction with the help provided by their family at a time when they were having problems. The evaluations of parameters 2, 3 and 4 (74, 17; 74.17; 71.85) are not statistically significantly different from each other, but the evaluations in all these items together are statistically significantly better than in item 5 (50.00), in which respondents expressed dissatisfaction with the amount of time



**Table 2:** Family functionality factors.

| Determining Factor |         | Fully functioning family | Slightly impaired family functionality | Dysfunctional family | P      |
|--------------------|---------|--------------------------|--|----------------------|--------|
| Gender             | Women   | 87                       | 16                                     | 10                   | 0.8906 |
|                    | Men     | 30                       | 6                                      | 2                    |        |
| Field of study     | PHYSIO  | 102                      | 20                                     | 8                    | 0.1455 |
|                    | EHC     | 15                       | 2                                      | 4                    |        |
| Age                | 19-20   | 106                      | 19                                     | 9                    | 0.1983 |
|                    | 21+     | 11                       | 3                                      | 3                    |        |
| Gender and Age:    | 19-20   | 79                       | 15                                     | 9                    | 10.000 |
|                    | Women   | 21+                      | 8                                      | 1                    | 1      |
| Gender and Age:    | 19-20 r | 27                       | 4                                      | 0                    | 0.0116 |
|                    | Men     | 21+ r                    | 3                                      | 2                    | 2      |
| Study and Age:     | 19-20 r | 93                       | 17                                     | 6                    | 0.1730 |
|                    | PHYSIO  | 21+ r                    | 9                                      | 3                    | 2      |
| Study and Age:     | 19-20 r | 13                       | 2                                      | 3                    | 0.6579 |
|                    | EHC     | 21+ r                    | 2                                      | 0                    | 1      |
| Study and Gender:  | Women   | 78                       | 15                                     | 7                    | 0.8599 |
|                    | PHYSIO  | Men                      | 24                                     | 5                    | 1      |
| Study/Gender:      | Women   | 9                        | 1                                      | 3                    | 10.000 |
|                    | EHC     | Men                      | 6                                      | 1                    | 1      |

**Table 3:** Evaluation in the questions of the questionnaire, field of study.

| 2-Proportionality agreement test | Test statistics | Critical field | P value |
|----------------------------------|-----------------|----------------|---------|
| Questions: Age: PHISIO vs. EHC   | t/z             | W              | p       |
| Item 1                           | 21,469          | <1,6499; ¥)    | 0.0163  |
| Item 2                           | 26,547          | <2,3263; ¥)    | 0.00397 |
| Item 3                           | -18,419         | (-¥; -1,6499 > | 0.0332  |
| Item 4                           | 23,376          | <2,3263; ¥)    | 0.0097  |
| Item 5                           | 20,729          | <2,3263; ¥)    | 0.0191  |
| Items together                   | 31,794          | <2,3263; ¥)    | 0.00074 |

families spend together.

## Discussion

The APGAR score for assessing family function is a method that is used in various areas, but especially in health care and can be used in all age categories. It turns out that the functionality of the family is closely related to the overall feeling of satisfaction, but also the health of its members. Camargo de Oliveira et al. published the results of their long-term study, which analyzed the relationship between family function and the manifestations of depression and cognitive impairment in the elderly. As many as 57% of the families surveyed showed a high degree of familial dysfunction and statistical significance was demonstrated between family function and the incidence of depression and cognitive impairment [9], compared to the results in our study, age is an important factor. With increasing age, the evaluation of functionality is worse. The reason for this phenomenon is the high degree of subjectivity, as well as the life experiences and developmental stages of the evaluated families. Da Silva et al. conducted a study in which they used APGAR family scores on a sample of 430 respondents. The aim was to analyze the functionality of families in the village of Fortaleza in Brazil. The measurement tool proved to be reliable and valid for population screening in the area of family functionality. The authors also used

the results of the study to validate the initial nursing diagnosis of "interruption of family processes" [10], which also revealed the possibilities of using the APGAR score in the nursing process, specifically in the field of nursing diagnostics. Gutieres Roman et al. stated in their conclusions that the use of the APGAR score leads to the possibility of studying in-depth relationships in the family and their impact on the health of its members. Subsequently, the results of the evaluation of family functioning are reflected in the creation of programs aimed at family studies, in order to support the health aspect and maintain good physical condition, which in turn helps in the process of building healthy and functional relationships in the family [11]. Gardner et al. conducted extensive research to determine family relationships and the occurrence of health problems in the families of children aged 4 to 15. They conducted the study at the first family visit and compared the results with subsequent repeated visits. Family dysfunction at the first visit to the family was in most cases not confirmed by repeated visits. Therefore, pediatricians did not recommend the APGAR family score as an appropriate method in the implementation of primary pediatric care [12]. Yi-Jin Feng et al. focused on monitoring the APGAR score in families with an orientation towards sexual satisfaction and quality of sex life in the period of COVID-19. 43.3% of participants reported a reduction in sexual frequency and significant differences were found between age, level of education and family function ( $p < 0.05$ ) [13]. The results of our study correlate only marginally with the results of the above studies. In general, medical sciences students are young people aged 19 and over and thus perceive family function mainly in terms of the satisfaction, emotional support and affection that their families provide.

## Conclusion

The APGAR score for the evaluation of family functioning is used in primary health care, in the area of social care and also with the aim of streamlining the provided health and nursing care for the family and its members. It can be assumed that a functional family is also a

healthy family, although this may not be the rule. However, it should also be noted that the APGAR family assessment score shows a high degree of subjective assessment, and when examining and using this tool in more depth, we assume that there would be differences between members of the same family. It is here that there is a large space for the work of a school nurse, who thus has in her hands an important tool for detecting the negative effects of a dysfunctional family on the health of children in schools. We also see another perspective on the use of family function assessment in the educational process, in comparison with study results and motivation to study future health care workers.

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