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Article

Health of Family Members of Road Transport Workers: Evaluation of Perceived Stress and Family Effectiveness

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Abstract: There is a lack of studies on the level of stress and health of families of workers in road transport. This study aimed to evaluate the perceived stress level and Family Effectiveness of family members of road transport workers. A quantitative study was carried out with family members of road transport workers in the southern region of Brazil. For the data collection, a sociodemographic form, the Perceived Stress Scale (PSS), and the Evaluation of Family Effectiveness Strategies were used. The data were analyzed by simple frequency, Spearman correlation coefficient (ρ) ($p < 0.05$), and descriptive analysis from the perspective of the Systemic Organization. 49 family members of road transport workers were participants. Perceived stress was higher in family members who had more than nine years of schooling, the targets of Control and Growth were higher in the evaluation of Family Effectiveness. The Control target was also higher in families with more than three people. The Coherence dimension had higher levels in families with health problems and whose income was less than \$792.00 US dollars per month. In the Individuation dimension, income over \$792.00 had better results. The Maintenance dimension of the system was higher in families whose drivers' activity was as an intercity driver, as well as in the Stability target. In conclusion, the social factors such as schooling, income, diseases, type of worker activity in road transport, and number of people in the family influenced perceived stress and Family Effectiveness, which demonstrates the need to increase the promotion of health care of the families of road transport workers.

Keywords: Family Health; Health Promotion; Nursing; Public Health; Systemic Organization; Stress; Road Transport Workers; Truckers

1. Introduction

Road transport workers may have their health affected by behavioral, environmental or occupational risk factors, considering that the work of urban bus drivers or LHTD (long-haul truck drivers) involves repetitive, monotonous, stressful activities, work overload, long journeys, long-term work, irregular hours, pressures regarding schedules, insecurity due to violence and distance from home for long periods, as in the case of LHTD [1–6].

As a consequence, these common factors among road transport workers, increase the risk of illness among workers due to chronic diseases such as hypertension, diabetes mellitus and obesity [6–8], and change the work-life-family balance [9] which can influence the quality of family relationships and impact the people well-being [10].

1.1. Family Systems

Family system studies date back to the General Theory of Systems, by Austrian Biologist Ludwig von Bertalanffy, and was widely adopted by Gregory Bateson, Anthropologist, Epistemologist and Cyber, founder of Family Therapy and Systemic Thinking [11]. Bateson, in 2024, celebrates 120 years of his birth and although his studies on family communication date back to the 1950s, they have been enthusiastically revisited by researchers from Anthropology, Nursing, Communication and Psychiatry [12]. Probably, by interest in the opportunities for interpreting interactions that emerge from the conversation with the family, provided by the systemic approach.

From the systemic perspective, the family is a complex system, in mutual interaction, consisting of member (subsystems), and inserted in other larger systems [13]. These individuals who have decided to live and interact emotionally with the main objective of supporting each other may not have consanguinity, but to be emotionally linked through resources, common or complementary talents that allow them to fulfill certain roles, which contribute to the functioning of the family as a total unit and for the constant exchange with the environment [14]. Thus, family functioning refers to the set of interpersonal relationships that occur in each family, which gives them their own identity [14].

Based on cultural factors, the arrangements and family roles are socially defined and families are organized to meet the health needs of their members. From the systemic perspective, family health is seen as a dynamic process, whose effectiveness can be evaluated with the use of theoretical instruments and models [14], as well as its structure through different family arrangements [15], and its development can be classified into cycles, whose unique characteristic of each stage, proportional to the professional understanding of the stage(s) allowing to guide the family to the characteristic challenges of a certain stage of the life cycle [16]. This approach enables the health professional to know the organizational structure of families and their operating systems [17].

1.1. The Framework of Systemic Organization

The Framework of Systemic Organization was developed by the North American nurse, Marie-Luise Friedemann. The framework aims to achieve four targets to find congruence (harmony), however, congruence is not fully achieved, being a constant search for the maintenance of family health. Thus, family effectiveness is the result of a set of situations and conditions, which include the individual and the environment, since the assessment of the family health level concerns a quality, which indicates how a certain function is developed. Therefore, the functionality is considered a health component, considering the environment as a facilitator or as a barrier to activities performance [14].

To measure how the family is organized to function effectively, as a system and to respond to the demands of each member and the environment, Dr. Friedemann developed an instrument, The Assessment of Strategies in Family Effectiveness ASF-E, supported by the Framework of Systemic Organization [18], which has been used to assess the family effectiveness in different contexts, as in Germany, Brazil, Colombia, Chile, Finland, Mexico, Portugal and Switzerland [19].

To respond to system requirements, operation is maintained by the values and beliefs developed in family processes. The Framework of Systemic Organization defines that, to reach the balance of the family system, four targets defined as—Stability, Growth, Control, and Spirituality, which make up the dimensions (subscales), defined as System Maintenance, System Change, Individuation, and Coherence [14]. The System Maintenance dimension is to use decision-making strategies, problem negotiation, ritual and traditional setting, communication patterns, standards, values, financial management and approach to the future in order to maintain family harmony providing the sense of security and autonomy. The System Change dimension refers to family actions to incorporate new events inside, as their priorities change over time. The Individuation dimension is related to personal identity, which includes roles and responsibilities, where talents, initiatives and knowledge are reinforced that allow the incorporation of knowledge to bring behaviors against personal/family pressures and the environment. It is represented by attitudes assumed by family members to achieve particular interests and make sense of life. The Coherence dimension considers that harmonious relationships between family members provide a sense of unity and family belonging through the

internalization of respect, love, concern for the other; sharing values and beliefs that allow the creation of emotional connections necessary for the survival of the system. It also includes attitudes and strategies to maintain affective ties evidenced in shared activities in different scenarios and must correspond to the definition of values and principles established by the family [14].

1.2. Characteristics of LHTD Families

The literature pointed to the lack of studies addressing family health from the perspective of family members of road transport workers, exploring the worker's perspective on their lifestyle, risk of diseases [20], work-life-family balance [9,21,22], psychological stressors, such as loneliness and loss of family conviviality [23], and the relationship with the family and coping strategies to overcome family isolation [24].

In this study, the characteristics of the families of road transport workers were described from studies carried out with the workers and showed that the majority were married [25–27], belonged to nuclear families (88.4%) [9], composed of three or more members (66%) [27], average income of \$80,000 per year (54%), however, of this value, about 95% of this revenue was used for truck maintenance and work-related expenses [28]. These studies also revealed that road transport workers worked more than 13 hours per day (37.5%) [5], and for long-haul drivers in particular, the period of time away from home ranged from more than 14 days (33%) [2] to more than 21 days (84%) [7]. Because of this, these workers lost family conviviality and induced a feeling of loneliness, which was responsible for increased stress and anxiety [23].

In view of road transport workers' everyday work schedules and its implications for the health of them and their families, it is relevant to evaluate the stress and health of the family, considering that stress can negatively impact health and contribute to the development of chronic diseases [29]. According to the theoretical model of the systemic organization [14], stressful situations can destabilize the harmony of family systems and the balance of relationships is fundamental to reduce stress.

This study presents previously unpublished factors that interfere with the perceived stress and family effectiveness of Brazilian family members of road transport workers. Considering that perceived stress and family effectiveness may be impacted by the physical and mental stressors that interfere with the health of road transport workers [2,7–9,21–23]. Therefore, the hypothesis of this study is that the level of stress and family effectiveness of the family members of road transport workers will be influenced by social determinants of health such as years of schooling, income, diseases and number of people in the family. This study aimed to evaluate the perceived stress level and the Family Effectiveness of the family members of road transport workers.

2. Materials and Methods

2.1. Study Design, Participants, and Setting

A cross-sectional, quantitative and descriptive study was conducted with 49 family members of road transport workers from the Southern region of Brazil. This is a non-probabilistic sample, for convenience, with voluntary participation, whose data collection took place from March to July 2023.

The inclusion criteria in the study were to be a family member of road transport worker as a driver of an urban bus, an intercity and/or long-haul truck driver, to be over 18 years old; to know how to read in Portuguese. The exclusion criteria were to be a family member of a retired road transport worker, orphan or widower.

The participants were only one family member per family, they were approached by the researcher (first author), accompanied by a psychology undergraduate student, and three nursing graduate students, all of whom were trained prior to data collection. The approaches to the participants occurred in the waiting room of a health service of a union of road transport workers, located in the south of Rio Grande do Sul, Brazil. This health service includes the following providers: dentist, general physician, urologist, gynecologist and pediatrician for workers and their family members (spouses and children). During workers' visits to the health clinic, the objectives of the

study were presented and the type of participation was explained, the Free and Informed Consent Form was read and participants signed two copies, one for the researcher and the other for each participant. Data collection instruments were presented to be completed by participants, however, some participants needed support in reading the items.

2.2. Data Collection

For data collection, a sociodemographic form containing 13 items, the Perceived Stress Scale (SSP) with 14 items, the Assessment of Strategies in Family-Effectiveness (ASF-E/Brazil) instrument with 20 items, for an overall total of 47 items. Each participant completed the questionnaires on paper, and took an average of 20 minutes to complete the data set. The data were then entered in a Google form and then created an Excel file that later was imported into SAS for analysis.

The Perceived Stress Scale (PSS) was developed and validated for use in Brazil [30]. PSS measures the intensity at which people perceive situations as stressful, so it measures perceived stress. It is one of the most cited scales in the literature for estimating stress and can be used in different age groups, because it does not have questions with contextual specificity. Answers are marked by a Likert scale with five points (0—never, 1—almost never, 2—sometimes, 3—often and 4—very frequent) and the total results may vary between 0-56. Half of the items are formulated positively, which are designated in the literature as positive items, and half are negative. To perform the final score, it is necessary to consider that several items refer to positive situations, and it is necessary to reverse the quotation of the answers to items 4, 5, 6, 7, 9, 10 and 13 as follows 0=4, 1=3, 2=2, 3=1, 4=0. The other negative questions should be added directly. The higher the sum, the higher the perceived level of stress [31]. The authors of the PSS do not recommend the practice of framing the scores into categories, such as: Low, medium, and high because of loss of precision in statistical analysis [30].

The instrument for the Assessment of Strategies in Family-Effectiveness (ASF-E/Brazil) was developed by the American nurse, Marie-Luise Friedemann [18]. The instrument of ASF-E was developed in Detroit, MI for use with multicultural families at various educational levels. It has 20 items and measures family health (effectiveness). Its 4 subscales refer to the targets of the framework: Stability, Growth, Control, Spirituality. This instrument is based on the theoretical model of the Systemic Organization ([14]. The ASF-E/Brazil was adapted to the Portuguese language of Brazil and validated to be used with Brazilian families [32]. It is a self-applicable instrument and its 20 items, measure the level of health or family functionality. Each item has three alternatives worth one, two, or three points. Alternative three is considered to be high family effectiveness; the two, average family effectiveness; and alternative one, low family effectiveness. The 20 items evaluate coherence (five items); system change (six items); individuation (three items) and system maintenance (six items). The minimum value is 20 points and the maximum total value of the instrument is 60 points. The overall classification is as follows: High level of family effectiveness with score between 48 and 60; intermediate level of family effectiveness with score between 34 and 47, and low effectiveness of family functioning with score between 20 and 33 points [14,18,32]. The 20 items of the ASF-E/Brazil are classified into four dimensions: coherence (item = 1, 10, 15, 18), individuation (item = 3, 5, 7, 12), system maintenance (item = 4, 8, 13, 17,19) and system change (item = 2, 6, 9, 11, 14, 16, 20). These dimensions comprise the four targets of the family system: Stability target (composed of the System Maintenance and Coherence dimensions) (item = 1, 2, 6, 9, 10, 11, 14, 15, 16, 18, 20); Control (System Maintenance and System Change) (item= 2, 4, 6, 8, 9, 11, 13, 14, 16, 17, 19, 20); Growth (individuation and change in the system) (item = 3, 4, 5, 7, 8, 12, 13, 17, 19) and Spirituality (Coherence and individuation) (item = 1, 3, 5, 7,10, 12, 15,18).

The data were analyzed in the Statistical Analysis Software Program (SAS, version 9.4), from a database built through the Excel application. The data were described by means of tables of absolute and percentage frequencies. To measure the difference, between the scores attributed to latent variables and sociodemographic variables, the sum score was used for each variable and the Wilcoxon-Mann-Whitney or Kruskal-Wallis test (ANOVA) was applied, followed by the Dunn post

hoc multiple comparisons test for the cases in which the observed variable had more than two categories. A confidence level of 95% ($\alpha = 0.05$) was set.

2.3. Ethics Considerations

In this study, ethical principles of research involving human beings were respected, according to Resolution of the National Health Council No. 466 of December 12, 2012. The Free and Informed Consent Form was delivered and read to the participants on the day of the interview, signed in two copies by the participant and the researcher, ensuring the freedom of spontaneous participation and the right of withdrawal at any time of the research. The study was approved by the Ethics Committee, process number 5.892.602.

3. Results

3.1. Characteristics of the Sample

The questionnaires were given to 49 family members of road transport workers. Sociodemographic characteristics of family members of road transport workers showed that (97.96%) were female, of which (89.80%) were wives, being (87.76%) married; (61.22%) in the mean age group of 40 years; (73.47%) had nine years or more of schooling; (73.47%) self-declared white and almost a quarter (24.49%) of the participants were evangelical, 32.65% were Catholic, 16% without religion, 16% spirit, 4% traditional African, and 6% other. The existence of some health problems were reported by 38% of the family members of road transport workers (22% reported having a diagnosis of hypertension, 8% diabetes mellitus, 6% depression, 4% hyperthyroidism, 2% anxiety, asthma and spine problem), considering that some participants cited more than one health problem. About COVID-19 vaccination, 83.7% received more than three doses of the COVID-19 vaccine. Regarding the work modality developed by the family/driver, almost half (48.98%) of family members reported that their family were working as drivers in the urban sector, followed by long-haul truck drivers (32.65%); only 18.37% were intercity drivers. With prevalence of transportation of people (51.02%), as an activity developed by the transport workers. See Table 1.0 for a full description of demographical information on our 49 participants.

Table 1. Sociodemographic characteristics of family members of road transport workers, Pelotas, RS, Brazil, 2023.

Features	N	%
Sex		
Female	48	97.96
Male	1	2.04
Age group		
Up to 39 years	19	38.78
40 years or +	30	61.22
Degree of kinship		
Wife	44	89.80
Others*	5	10.20
Civil status		
Married	43	87.76
Others**	6	12.24
Years of schooling		
Up to 8 years	13	26.53
9 or +	36	73.47
Ethnicity		
White	36	73.47
Other***	13	26.53

Religion		
Catholic	16	32.65
Evangelical	12	24.49
Other****	21	42.86
Family income*****		
From 1 to 3 m.w.	31	64.58
More than 4 m.w.	17	35.42
Health problems		
Yes	14	38.60
No.	35	71.40
Doses of COVID-19 vaccine		
None	2	4.10
1 to 2	6	12.20
3 to 5	41	83.70
Number of residents		
Up to 2	10	20.41
From 3 to 4	36	73.47
More than 4	3	6.12
Type of worker activity*****		
Intercity driver	9	18.37
Long-haul truck driver	16	32.65
Urban sector	24	48.98
Type of transport		
Loads	24	48.98
People	25	51.02

*Son/Daughter, father, mother, brother/sister. ** Stable union, single, widowed, divorced/separated. ***Black, brown. ****Spiritist, without religion, traditional African religion. ***** 1 Brazilian minimum wage in 2023 = R\$1,320.00 or U\$258.00 per month. ***** of the worker in road transport.

The average family income was R\$ 4,276.73 or U\$ 855,34. On average, in each residence there were 3.24 residents, resulting in a per capita income of R\$ 1,431.93 or U\$ 286,38, two thirds (64.58%) received between, 1 to 3 times the minimum wage. In almost three quarters (73.47%) of the residences lived from 3 to 4 people.

In the evaluation of perceived stress using the 14-item perceived stress scale, scores ranged from 7 to 38, the mean of the scores was 23.96 -- the minimum means were 0.94 and the maximum means were 3.35 (Table 2).

Table 2. Frequency distribution of data from the Perceived Stress Scale (PSS) (n =49 2023) of family members of road transport workers, Pelotas, RS, Brazil.

Item/Number	Mean	Standard deviation.	CV	Median	Minimum	Maximum
Item 1	1.80	1.02	56.81	2	0	4
Item 2	1.35	1.11	82.38	1	0	4
Item 3	2.22	1.01	45.20	2	0	4
Item 4	2.22	1.01	45.20	2	0	4
Item 5	0.94	0.90	95.79	1	0	4
Item 6	1.00	1.00	100.00	1	0	4
Item 7	1.67	1.14	68.34	2	0	4
Item 8	2.04	1.04	50.96	2	0	4
Item 9	1.24	1.05	84.46	1	0	4
Item 10	1.35	0.78	57.81	1	0	3
Item 11	1.86	1.14	61.20	2	0	4
Item 12	3.35	0.88	26.27	4	0	4

Item 13	1.59	1.17	73.57	2	0	4
Item 14	1.33	1.13	84.83	1	0	4
Total	23.96	6.45	26.91	24	7	38

In the evaluation of family effectiveness with the Instrument Assessment of Strategies in Families—Effectiveness (ASF-E/Brazil), most participants scored at level 3 corresponding to the best level of health, which is equivalent to the high effectiveness of family functioning. At this level, item 19 related to special dates, recorded the highest percentage (95.9%), followed by item 4 (89.8%), related to satisfaction with the place where they live. However, two items, the highest percentages were recorded at level 2, corresponding to the intermediate level of family effectiveness. This occurred for item 5 (83.6%), related to family pride and item 7 (61.2%), related to participation in community activities. At level 1, corresponding to the low level of family effectiveness, the highest percentage was for item 17 (53.0%), related to family consultation to make personal decisions (Table 3).

Table 3. General classification of items according to the levels of the dimensions of the ASF/Brazil instrument (n=49) of the family members of workers in road transport, Pelotas, RS, Brazil,2023.

Dimension / Item	Distribution of answers ASF-E/Brazil			Total
	Level 1	Level 2	Level 3	
	n (%)	n (%)	n (%)	
Consistency (C)				
Item 1	3 (6.12)	9 (18.37)	37 (75.51)	49 (100)
Item 10	4 (8.16)	20 (40.82)	25 (51.02)	49 (100)
Item 15	6 (12.24)	16 (32.65)	27 (55.10)	49 (100)
Item 18	1 (2.04)	22 (44.90)	26 (53.06)	49 (100)
Individuation (I)				
Item 3	3 (6.12)	6 (12.24)	40 (81.63)	49 (100)
Item 5	7 (14.29)	41 (83.67)	1 (2.04)	49 (100)
Item 7	8 (16.33)	30 (61.22)	11 (22.45)	49 (100)
Item12	4 (8.16)	7 (14.29)	38 (77.55)	49 (100)
System Shift (SC)				
Item 4	3 (6.12)	2 (4.08)	44 (89.80)	49 (100)
Item 8	3 (6.12)	8 (16.33)	38 (77.55)	49 (100)
Item 13	3 (6.12)	16 (32.65)	30 (61.22)	49 (100)
Item 17	26 (53.06)	12 (24.49)	11 (22.45)	49 (100)
Item 19	0 (0.00)	2 (4.08)	47 (95.92)	49 (100)
System Maintenance (SM)				
Item 2	3 (6.12)	10 (20.41)	36 (73.47)	49 (100)
Item 6	2 (4.08)	11 (22.45)	36 (73.47)	49 (100)
Item 9	3 (6.12)	3 (6.12)	43 (87.76)	49 (100)
Item 11	5 (10.20)	14 (28.57)	30 (61.22)	49 (100)
Item 14	1 (2.04)	8 (16.33)	40 (81.63)	49 (100)
Item 16	1 (2.04)	13 (26.53)	35 (71.43)	49 (100)
Item 20	2 (4.08)	5 (10.20)	42 (85.71)	49 (100)

No significant differences were found between perceived stress, dimensions and targets between, the family group up to 39 years old (n=19) and the age group. For marital status, there were no significant differences in those who were married (n= 43) and others (n=6). The number of residents, up to two people (n= 10) and more than two people (n=39) in the residence, did not change the perception of the participants in relation to perceived stress and the other dimensions investigated. For the level of education, a significant difference was observed (p= 0.0403) for

perceived stress. Participants (n= 36) with 9 years or more of schooling had a higher level of perceived stress (Figure 1).

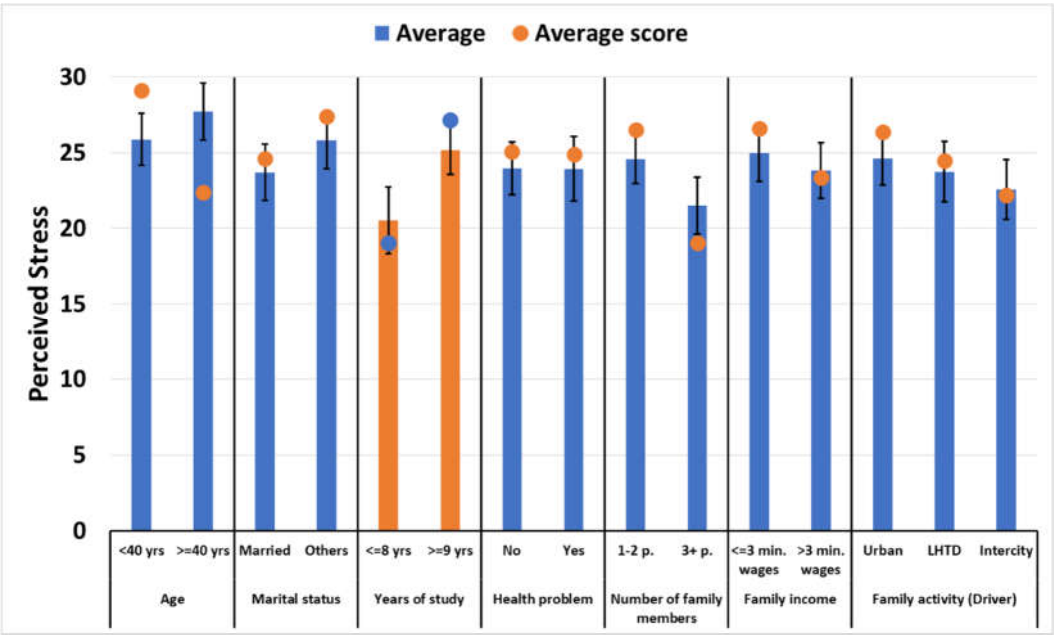


Figure 1. Mean (standard deviation) of perceived stress level of family members of road transport workers. Pelotas, RS, Brazil, 2023. *Significant at 95% confidence level; SSP= perceived stress scale.

Families with family income between, 1 to 3 times the minimum wage showed higher average level ($p= 0.0072$) in the Coherence dimension. Participants with an income greater than 3 times the minimum wage have a higher average score for the Individuation dimension ($p= 0.0138$). Participants with some health problem ($n= 15$) have a higher level of perception ($p=0.0244$), in relation to the Coherence dimension. The Coherence dimension also reflects concern for the other. The type of work activity that the family member exerts, presented a significant difference ($p= 0.0151$) for the System Maintenance dimension. This dimension brings together strategies to maintain family harmony, providing a sense of security and autonomy. The family members of the intercity drivers presented a higher average level of perception, in relation to the System Maintenance dimension (Figure 2).

The variable schooling showed significant differences between the meta-control ($p= 0.0325$) and the Growth target ($p=0.0360$). Participants who had 9 years or more of schooling have a higher average level of perception, for these two dimensions. The Control target was also influenced by the number of residents. In the residences, whose number of residents is equal to or greater than three people the Control target presented significance ($p= 0.0353$). The type of work activity variable presented significant difference ($p= 0.0196$) for the Stability target. Family members of intercity drivers presented a higher average score than family members of drivers in the urban sector and long-haul truck drivers. This target results from the Coherence and System Maintenance dimensions (Figure 2).

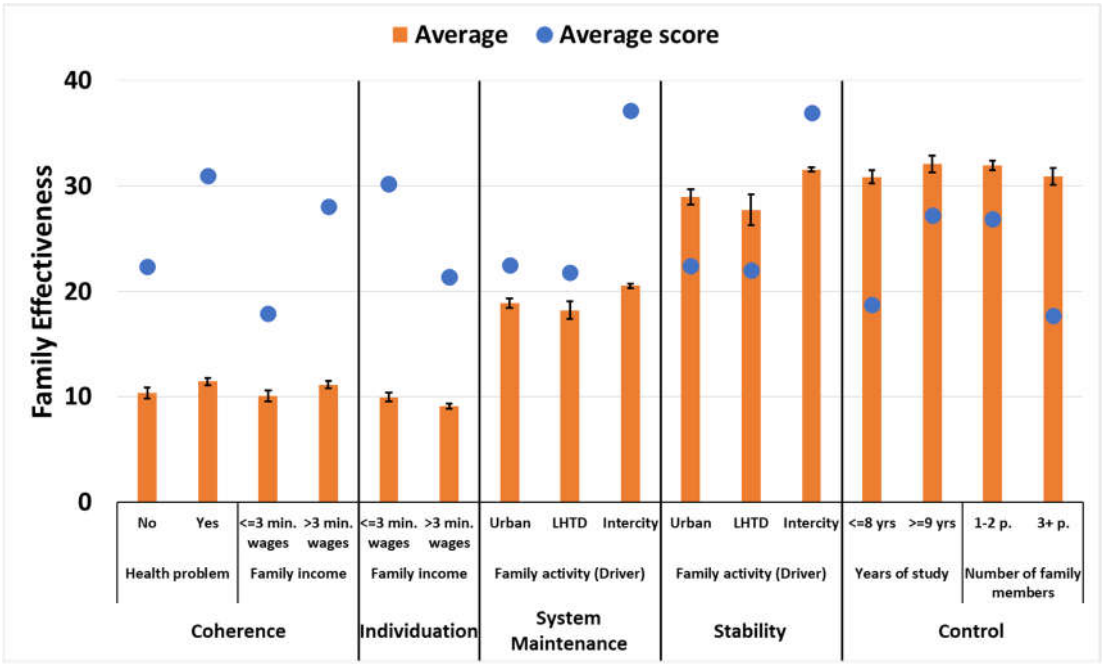


Figure 2. Mean (standard deviation) and mean score of targets and dimensions of the Family Effectiveness Assessment Instrument (ASF-E/Brazil) of family members of road transport workers. Pelotas, 2023. (Only results with significance). Significant at 95% confidence level; ASF-E/Brazil= Assessment of Strategies in Families— Effectiveness.

4. Discussion

This study presented the factors that influence the perceived stress level and the family effectiveness of family members of road transport workers, including years of schooling, family income, the number of members of the family group, the occurrence of diseases and the type of activity performed by the worker, as a driver. These results may be related to family contexts, social, environmental conditions and the complexity of family relationships, of the people who make up the family, in the post-COVID-19 pandemic period.

There was a predominance of female participants, because they were the wives of road transport workers (89%), attended at the health service where data collection was performed. Similarly, the age over 40 years of participating family members corresponds to the average age of road transport workers over 45 years [5,8,26].

The study time showed a significant difference in perceived stress of the road transport worker’s family member, demonstrating that the higher the education level, the greater the perceived stress. This result demonstrates the need to support people and families in stressful and deteriorating situations of the family system. On the other hand, in the evaluation of family effectiveness, the Growth and Control targets showed a significant difference for the years of education, with greater family effectiveness for participants with more than nine years of education. The significant difference with the years of education in the Growth target is consistent, considering that this target results from the dimensions of Individuation and System Change. It is represented by attitudes that promote new roles in response to critical situations experienced by families, which require adaptation processes and adjustments and promote family health. Demonstrating the influence of years of education on the processes of readjustment of beliefs and attitudes that allow humans to new behaviors as a healthy response to the crisis that leads to growth [14]. In this sense, people with lower education need greater attention from family nurses to evaluate and support the family in achieving the balance of the system aiming at promoting the health of the worker’s family.

Schooling also had significant results for Control target, which was higher in people with more than nine years of education. The Control target results from the dimensions of System Change and

System and Maintenance and aims to reduce anxiety, prevent and eliminate events that threaten the stability of the family, and break with congruence or family harmony [14]. In this study, items 19 and 4 presented the best results, at level 3 for this target. Item 19 is related to the way the family organizes itself for special dates, with 95.9%, demonstrating that families value their rituals. Item 4, on satisfaction with the place where they live, with 89.8% at level 3, demonstrated appreciation for people and the place where they live. The worst result of the Control target was for item 17, with 53% at level 1. Item 17 corresponding to the family consultation in personal decisions, demonstrating that the family members of road transport workers believe that they need to communicate and ask for family approval to make personal decisions. Previous studies have shown that the Control target protects against external and internal threats to the family system [33] and promote a sense of inner security by reducing the anxiety produced by insecurity and vulnerability, because it has strategies that allow to make the necessary adjustments for the maintenance of the system [34]. For family members of road transport workers, communication can be considered a strategy to reduce anxiety. A study with truck drivers identified that communication with family and friends is frequent, during hours off [25].

The number of people in each family showed a significant difference in the evaluation of family effectiveness—the Control target was more effective in families comprised of three or four members. This result may be related to the presence of children in the family, as this goal aims to reduce anxiety, prevent and eliminate events that threaten family stability or break with harmony. Demonstrates the concern to prevent and eliminate threatening events [14]. In this context, these events may be related to the routine of LHTD, as described in other studies with irregular, extensive journeys, long periods away from home and insecurity, due to urban violence [2,5,25], as with insecurity, due to urban and road violence, as reported informally by drivers to the researcher. Yosefl (2021) evaluated the family composition of road transport workers and found that most families were composed of three or more members (66%) [27] and most were nuclear families (88.4%), and the maintenance of the family was considered the largest motivation of drivers (35%) to continue working [9].

The existence of some health problem was reported by 38% of the participating family members, included chronic diseases such as hypertension, diabetes mellitus, depression, which according to the World Health Organization, affect two billion people and cause three quarters of the deaths worldwide [29]. Presenting some health problem was significant for the Coherence dimension, which concerns the stable components of a person, the body, its organs, self-esteem, body image, personal identity, self-confidence and sexual identity built since childhood and with reference to parents. This dimension is part of the Spirituality and Stability targets, and therefore provides a sense of unity and family belonging through the internalization of respect, love, concern for the other, sharing values and beliefs that allow creating emotional connections necessary for the survival of the system [14]. However, the reach of Coherence is different among people and can reduce tension with physical exercise, body consciousness practice, listening to music, appreciating nature, participating in cultural and artistic activities, meditating, and others. This result may be related to the strategies used by families in caring for people with some chronic disease, demonstrating that they have resources that allow strengthening the emotional bonds that correspond to the values and principles that govern the family system.

The average family income was R\$ 4276.73 or U\$ 831.00. Of these participants, two thirds (64.58%) received a salary that was 1 to 3 times the minimum wage, corresponding to up to R\$ 3,960.00 U\$760.00. Previous studies with drivers showed that income was less than \$220.00 per month (YOSEF et al., 2021) and the absence of appropriate increases in earnings caused additional stress in drivers because they were not able to provide adequate financial resources to their families [20]. In addition, financial problems prevented them from obtaining health care [28]. In the Coherence dimension, the significance was higher for families receiving up to three times the minimum wage. In this dimension, item 10, related to family work, had the worst result, with 49% at the low and intermediate level. This result may be related to the characteristics of the sample, composed of women, wives or daughters of road transport workers, revealing the need for support and participation of other members in household or family tasks and work. The item with the best result

was number 1, related to family happiness, with 75.5% at the high level, which according to the Systemic Organization, demonstrates the connection between the members and that allows the survival of the family system [14].

On the other hand, in the Individuation dimension the significance was higher in families whose income was higher than three times the minimum. This dimension is a structure in which personal identity is developed, which includes roles and responsibilities, in which talents are strengthened, as well as initiatives that allow the incorporation of knowledge to assume behaviors against personal/family pressures and the environment. It is represented by attitudes assumed by family members to achieve particular interests and give meaning to life [14]. The items of ASF-E/Brazil, belonging to this dimension with the worst results were 5 and 7, which are related to family pride. Item 5, with only 2% at high level and participation in community activities, item 7, with 22% at high level. The best results for items 3 related to help and 12 related to solving problems with 81.6 and 77.5% respectively, at high level.

The lower family pride and low involvement in community activities, may be related to cultural aspects and as described by previous study, the road transport worker perceives the lack of recognition of truck driver activity, poor image of this professional category due to low salary, lack of career progression, and time away from family [35]. As intellectual and physical activities expand personal horizons, it is understood to recognize prejudice and social support network can strengthen pride and participation in community activities, with the recognition of the unique characteristics and resources available in the family unit, attitudes such as the availability to help in the community, identified in item 3 and the ability to solve problems, item 12, favors the survival of the family system through the adjustments of values.

Among the working modalities, the families of the intercity drivers, who carry people or cargo presented a significant difference in the evaluation of family effectiveness, in the System Maintenance dimension and in the Stability target. In this study, being an intercity driver involves the transport of cargo or people, with a characteristic in common to urban drivers, of returning home daily after the working day. However, LHTD may face greater stress in interpersonal relationships due to long periods of home absence and irregular hours. Prior studies evaluated the impact of long periods of home absence, due to worker activity in remote places, family health, revealed high levels of depression, anxiety, stress in workers' families, who presented as greater concern, good -Gest from their partners/workers [36]. As well as the distancing of the father caused greater impact on the mental health of the children of a military father [37].

The System Maintenance dimension use strategies for decision making, negotiation of problems, establishment of rituals and traditions and definition of roles, communication patterns, norms, values, financial management and future approach in order to maintain family harmony, providing the feeling and security and autonomy. This dimension obtained better results in items 9 and 20. Item 9 related to how the family faces problems, with 87% at level 3, demonstrating better management in solving problems. Item 20, related to freedom, with 85% at level 3, has shown that members feel free to be themselves. The Stability target also showed significant difference for the activity of the family member, as an intercity driver. This target results from the dimensions of Coherence and System Maintenance and concerns the continuity of routines, structure, organization, traditions and values assumed by the family and transmitted from generation to generation, which promote unity and development of values, attitudes and beliefs [14]. This result is related to the lowest level of anxiety, possibly related to the opportunity to return home daily, which improves the communication pattern, favors the fulfillment of papers, experienced by the families of intercity drivers.

From the results obtained in this study it is possible to affirm that the type of activity performed by the worker in road transport affects the health of the family, being better for family members of workers in intercities transport, whose activity allows you to return home daily. The work routine of long-distance drivers and or buses in the urban sector, for involving a stressful work process, irregular times, high workload and fear of violence, which can affect personal relationships by compromising communication, provoking anxiety and hindering the driver's participation in family events and activities.

A previous study showed that worker health was affected by the imbalance between work and family and led to a higher level of sleep-related problems [22]. In addition, the need to work at times that do not coincide with those of family and friends, as on a night scale, can be considered a stress trigger [21] and compromise their support systems as a result of long family separations, work demands, lack of energy when they are at home, and often lead to a breakdown of relationship or divorce [24]. For drivers, due to the nature of the work, which requires long hours, last minute demands, the separation of the family was composed of guilt for needing to stay long periods away from home, compromised parenting, caused the loss of monitoring the growth of their children [20,21] and prevented participation in family events [20,24].

Implications for Practice

The families of workers in road transport have as characteristic the need to adapt the routines of irregular schedules, absences for long periods, concerns about the health and safety of their relatives while they are at work. These factors need to be considered by nurses to evaluate the health of the families of workers in urban and or long-haul transport and intervene to meet their needs. The data of this study can guide the practice of the team in the health care of this high-risk population for chronic diseases, due to stress and other factors that involve working and living conditions such as years of education, income and health problems. Considering that family harmony is broken by situations of stress or imbalance in people's relationships, evaluation approaches using instruments such as the Perceived Stress Scale, the Evaluation Instrument of Family Effectiveness Strategies (ASF-E/Brazil), supported by the systemic approach can be timely recommendations, aiming at interventions that promote the reduction of stress and improve the health of the family by contributing to the increase of family congruence.

Limitations

One limitation of this study is the absence of information that allowed to describe the organization and types and ages of persons in the family, and the stage of the family cycle, about the origin of the family income sources and the working time in road transport of the family member of the participants. However, this did not reduce the quality of the result on the evaluation of perceived stress and family effectiveness. We encourage other studies, exploring this and other aspects related to the health of workers and their families in the prevention of chronic diseases.

Conclusions

This study evaluated the perceived stress level and the Family Effectiveness of the family members of road transport workers and showed that perceived stress was higher in family members with more than nine years of study, as opposed to the ASF-E/Brazil instrument, in which, Control and Growth targets were positively influenced by the variable schooling. The Control target was higher in families with more than three people in the family. Income positively influenced the dimensions of Coherence and Individuation and the Coherence dimension was also influenced by the variable health problems. The type of occupation of the driver positively influenced the System Maintenance dimension and the Stability target for workers in intercity transport.

These results allow us to infer that higher education despite increasing perceived stress, allows the family to create strategies to maintain family harmony. The activity of the family member as an intercity driver, allows to return home daily, demonstrated to improve the health of the family, possibly due to the greater ability to seek solutions to adversity and the availability of the driver to engage in family activities. This demonstrates the ability of family members to adjust and create strategies to deal with adverse situations such as health problems, prevent stressors, adjust the needs of members and maintain family harmony. In addition, it indicates the need for greater support and professional attention to the health of workers' families in urban and long-haul truck drivers, especially in relation to perceived stress to create strategies that allow the reduction of stressors. However, it is not possible to make generalizations from these results and other studies are necessary

to better understand the influence of sociocultural factors involving work and life on the health of families.

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