Coping Strategies and Caregiver´s Anxiety in Pediatric Oncohematology

Estratégias de Coping e Ansiedade de Cuidadores em Oncohematologia Pediátrica

Marina Kohlsdorf* & Áderson Luiz Costa Junior
Universidade de Brasília, Brasília, Brasil

Abstract
The main goal of this paper was to investigate associations between sociodemographic data, patient's clinical condition, indicators of anxiety, and coping strategies adopted by caregivers during leukemia diagnosis in order to indicate which factors may influence anxiety and the adopted coping strategies. In this study, 44 caregivers were enrolled and submitted to the Ways of Coping Scale (Brazilian Version – EMEP), the Beck Anxiety Inventory (BAI), and a sociodemographic questionnaire. Results show associations among different coping categories, caregiver's age, education, and the presence of a spouse, as well as correlations related to anxiety, subject's gender, and the children's age. There was relevant association between anxiety and emotion-focused coping, suggesting the importance of interventions during the early stages of the treatment.
Keywords: Cancer; Coping; Anxiety; Leukemia.

Resumo
O objetivo do estudo foi investigar associações entre dados sociodemográficos, condição clínica pediátrica, manifestações de ansiedade e estratégias de enfrentamento adotadas pelos cuidadores ao diagnóstico de leucemia, para indicar fatores influentes relativos a manifestações de ansiedade e estratégias de enfrentamento adotadas. Participaram do estudo 44 cuidadores, que responderam a Escala Modos de Enfrentamento de Problemas – EMEP, Inventário Beck de Ansiedade (BAI) e questionário sociodemográfico. Os resultados indicam associações entre tipos de enfrentamento, idade do participante, escolaridade e presença de cônjuge, além de correlações entre manifestações de ansiedade, sexo do participante e idade da criança. Destaca-se uma associação importante entre manifestações de ansiedade e uso de estratégias de enfrentamento focalizadas na emoção, sugerindo a importância de intervenções nas fases iniciais de tratamento.
Palavras-chave: Câncer; Enfrentamento; Ansiedade; Leucemia.

The diagnosis of a pediatric oncologic and hematologic pathology represents an issue for the family in a way that it modifies the family subsystems, demanding adaptations in parental care and reassessment of family dynamics during treatment period (Kars, Duijnstee, Pool, Delden, & Grypdonck, 2008; Vrijmoet-Wiersma et al., 2008; Young, Dixon-Woods, Findlay, & Heney, 2002). Understanding the implications of the oncologic treatment for caregivers of patients under treatment is a vital element for the development of more efficient interventions by health professionals.

In spite of the significant increase in survival rates, pediatric cancer is still usually associated to a social representation of death, incurability, losses, and intense suffering (Rodrigues, Rosa, Moura, & Baptista, 2000). The family is advised to adapt to a new situation that involves hospital treatment periods, aggressive chemotherapy, changes in family roles and relationships, routine changes, and other emotional challenges that may hinder the performance of tasks inherent to the development of the child (Hoekstra-Weebers, Jaspers, Kamps, & Klip, 2001; McGrath, Paton, & Huff, 2005; Young et al., 2002).

The parents or caregivers of a child or adolescent under oncologic and hematologic treatment need to deal with potentially anxiogenic demands, such as: (a) handling psychological and emotional processes experienced by the sick child involving side effects of treatment, clinical events, and environmental restrictions (Björk, Wiebe, & Hallström, 2005; Kars et al., 2008; Klassen et al., 2007; Silva, Pires, Gonçalves, & Moura, 2002); (b) establishment of satisfactory relationship and communication within the medical-clinical scenario (Clarke, 2004; Clarke & Fletcher, 2003; McGrath, 2001); (c) maintenance of care for the healthy children (Clarke, Fletcher, & Schneider, 2005; Keegan-Wells et al., 2002; McGrath et al., 2005); (d) control of fear of relapses (Eiser & Eiser,

---

* Address: Universidade de Brasília, Campus Darcy Ribeiro, Asa Norte, Brasília, DF, Brasil, CEP 70910-000. E-mail: marinak@unb.br

2007; Silva et al., 2002). Under such conditions, the probability of manifestation of behavioral disturbances is very high, as for instance, depression, blaming, sleeping disorders, somatizations, diet changes, and physical and emotional overload, which lead to higher health risks, potential occupational damages and loss of quality of life (Gedaly-Duff, Lee, Nail, Nicholson, & Johnson, 2006; James et al., 2002; Silva et al., 2002; Young et al., 2002).

On the other hand, parents can satisfactorily adapt themselves to the new family condition, with very similar somatic symptoms and psychological disturbances to those experienced by parents of children not exposed to such treatment scenarios (Clarke & Fletcher, 2004; Greening & Stoppelbein, 2007). Researches in this milieu have not systematically pointed out the variables functionally related to the coping repertoire adopted by parents of children exposed to treatment of oncologic and hematologic pathologies, which justifies the relevance of the investigation of this theme.

The Impact of the Diagnosis and of the Pediatric Oncologic and Hematologic Treatment on Caregivers

Recent literature shows that the study of psycho-social impacts of pediatric cancer treatment on caregivers has focused on behavioral disturbances, such as depression (Gedaly-Duff et al., 2006; Steele, Long, Reddy, Luhr, & Phipps, 2003; Vrijmoet-Wiersma et al., 2008), anxiety (Gerhardt et al., 2007; Santacroce, 2002), post-traumatic stress symptoms (Dolgin et al., 2007; Kazak, Boeving, Alderfer, Hwang, & Reilly, 2005), and distress experiences (Boman, Lindahl, & Björk, 2003; Pai et al., 2007; Steele, Dreyer, & Phipps, 2004), not to mention financial expenses (Sloper, 2000), changes in matrimonial relationships (Hoekstra-Weebers, Jaspers, Kamps, & Klip, 1998), and satisfaction with social support (Gerhardt et al., 2007; Wijnberg-Williams, Kamps, Klip, & Hoekstra-Weebers, 2006).

The following factors, when appropriately related to the decrease and/or absence of symptoms, seem to work as a protection against the development of psychological disturbances: information availability and satisfaction with social and instrumental support, decrease in the number of hospital admissions, job stability, and reduced manifestations of anxiety to the diagnosis (James et al., 2002; Kerr, Harrison, Medves, & Tranmer, 2004; Klassen et al., 2007; Kylmä & Juvakka, 2007; Ljungman et al., 2003; McGrath et al., 2005; Sloper, 2000; Wijnberg-Williams et al., 2006). The availability of social support, be that emotional or instrumental (usually higher during diagnosis period and in the early stages of treatment), coming from the family, friends, colleagues and neighbors, as well as the satisfaction with such support, are considered by parents as overload relievers, reducing the probability of psychological and somatic disturbances (James et al., 2002; Kerr et al., 2004; McGrath, 2001; McGrath et al., 2005; Sloper, 2000; Wijnberg-Williams et al., 2006).

The conditions of family cohesion before the diagnosis, stress control, evolution of the treatment, and the family history of chronic diseases have also been pointed out as relevant influences to the experience of pediatric cancer (Kazak et al., 2004; Klassen et al., 2007; Kylmä & Juvakka, 2007; Vrijmoet-Wiersma et al., 2008). Providing information about the disease (compatible with the caregivers' needs), the child's physical status, the benefits and side effects of therapies, and factors that promote the child's well-being are referred by parents as functionally related to the most efficient way to cope with the disease (Kerr et al., 2004; Kerr, Harrison, Medves, Tranmer, & Fitch, 2007).

Differences in the Impact of the Treatment on Mothers and Fathers

Studies show that mothers and fathers of children under cancer treatment tend to take gender-biased responsibilities and deal differently with the challenges (Svavarsdottir, 2005). Usually, mothers take (or they keep playing) the child's or adolescent's primary caregiver's role, while fathers act as providers; for mothers, the main tasks focus on the administration of medicines, comforting, and supporting the child or adolescent and their healthy siblings, planning family activities, handling the children's behavioral problems, attention to fever occurrences and other events, and the supervision of daily house chores (McGrath, 2001; Svavarsdottir, 2005).

The child's or adolescent's father, more frequently, faces a conflict between working to support the house and accompanying the patient in the hospital, besides supplying demands of emotional support to the wife and the other children (McGrath, 2001; Svavarsdottir, 2005). Gender-related cultural roles influence more frequently the patient's father regarding suppressing the expression of feelings, fears, and expectations (Brody & Simmons, 2007).

Mothers tend to get more support than fathers, who, in turn, find it more difficult to look for and maintain social support (Hoekstra-Weebers et al., 2001; Sloper, 2000; Wijnberg-Williams et al., 2006). Variations in the duration and permanence of psychological disturbances between mothers and fathers have been reported in the literature. Levels of anxiety are usually higher among mothers (Norberg, Lindblad, & Boman, 2005; Sahler et al., 2005; Sloper, 2000; Svavarsdottir, 2005; Vrijmoet-Wiersma et al., 2008).

Coping with Difficulties and Treatment Demands

The term "coping" is defined by Lazarus and Folkman (1984, p. 141) as "cognitive and behavioral efforts in constant change, aiming at handling (minimizing, avoiding or tolerating) internal and/or external specific demands considered as overload or exceeding personal resources." According to the authors, the evaluation of a situation as overload characterizes two key elements: the need for the development of strategies to deal with the stressing event, and the presence of anxiety manifestations.

First, two functional categories of coping were pointed out by Lazarus and Folkman (1984): (a) strategies focusing the alteration of the problem (which usually happen when environmental conditions can be modified, with direct actions on the event, search for information, compliance of medical recommendations, and redefining the problem); and (b) emotion-focused strategies (which involve escaping, estrangement, relaxation, expression of emotions and protests, use of substances like tobacco, alcohol, and psychotropic drugs, distraction, attribution of fault, and distraction), used more frequently when the possibility of changing environmental conditions is reduced, and the subject tries to control their somatic tension levels. Based on different theoretical-philosophical principles, literature has shown several categories of strategies, such as use of spirituality or imaginative thoughts (beliefs or optimism), as well as the search for social support (Elkin et al., 2007; Greening & Stoppelbein, 2007; Klassen et al., 2007; Norberg et al., 2005).

Although many studies *a priori* point to strategies considered more or less adapted, it is not possible to set appropriate or inadequate behaviors, in universal terms, given the contextual specificity, and the theoretical variability that subsidizes the several concepts of coping (Lazarus & Folkman, 1984). However, to understand the relationship among factors to promote well-being, factors that trigger manifestations of anxiety and the development of coping strategies might allow the planning of psycho-social interventions that minimize behavioral costs associated to the diagnosis and the treatment.

Within this scenario, a study by Goldbeck (1998) verified that subjects who minimized their attitudes in relation to the treatment (which means fewer manifestations of problem-focused strategies) also presented low family cohesion, higher scores of depression and imaginative thoughts, higher irritability, and fewer manifestations of optimism. Norberg et al. (2005), in their turn, compared how parents of children with cancer and parents of children without chronic diseases face the situation. It showed that, among the former, the more frequent use of problem-focused strategies and a lower use of escapist reactions was associated to lower levels of anxiety and depression.

A review study by Klassen et al. (2007) pointed that the most efficient coping strategies to deal with demands of oncologic treatment were related to the presence of family cohesion, social support, and self-controlled stress. Low family cohesion and little social support were associated to parents' higher psychological disturbances. Yet, such disturbances were also associated to a more frequent use of emotion-focused strategies and a less frequent use of problem-focused strategies.

A study by Trask et al. (2003) on parents of adolescents under cancer treatment showed that the use of strategies such as imaginative thought and self-criticism was positively associated to the occurrence of psychological disturbances, such as anxiety and depression. The studies of Hoekstra-Weebers et al. (1998) and Sloper (2000) showed an association of emotion-focused strategies and the manifestation of psychological disturbances of anxiety and fear. In relation to coping strategies based on spiritual practices, a work by Elkin et al. (2007) showed that mothers with high levels of depressive symptoms reported lower levels of connection to beliefs and religious practices, whereas mothers who reported to be close to religious practices showed low or minimal levels of depression based on indicators.

A study by Greening and Stoppelbein (2007), however, showed that symptoms of psychological disturbances decreased due to the address of the problem and the search for social support. On the other hand, they increased because of the use of psychotropic substances and blaming reactions. Symptoms of depression, anxiety, and post-traumatic stress were positively associated to emotion-focused strategies (such as blaming), as well as the use of psychotropic substances. Social support, optimism, and problem-focused strategies were positively related.

It can be stated that manifestations of anxiety, characterized as a type of emotional response to the lack of immediate escaping as a result of the perception of a stimulus that precedes an aversive or even beneficial event (Coêlho, 2006), are common in the pediatric oncologic and hematologic scenario (Best, Streisand, Catania, & Kazak, 2001; Santacroce, 2002). Caregivers with very high levels of anxiety towards their diagnosis usually continue to experience important manifestations of anxiety, even after the treatment is over (Vrijmoet-Wiersma et al., 2008). Suffering expectations and uncertainties about the treatment outcomes have also been related to higher levels of anxiety (Kazak et al., 2004).

This paper considered the significance of a study about functional relationships among manifestations of anxiety, the adoption of coping strategies, and the favorable factors to psychological disturbances in children's and adolescents' caregivers under treatment of oncologic and hematologic pathologies. Thus, this study focuses on the associations among the caregivers' sociodemographic data and the patient's clinical condition, manifestations of anxiety, and the categories of coping strategies adopted by the caregivers immediately after the their children's diagnosis of leukemia was given.

Method

Participants

Forty-four caregivers took part of this study, their ages between 20 and 60 years old (*Avg*=34.25; *SD*=9.82). There were 32 females and 12 males, escorting patients with ages between nine months and 17 completed years old. Table 1 shows other sociodemographic characteristics of the sample, and the patients' clinical data.

Table 1

Subjects' Sociodemographic Characteristics and Patients' Clinical Data (N=44)

Sociodemographic characteristics and clinical data	Frequency
Caregiver's age	
20 to 30	16
31 to 45	22
46 to 60	6
Caregiver's marital status	
Married/in common-law marriage	32
Divorced/separated/widow	12
Caregiver's education	
Elementary school	24
High School or College	20
Place of Origin	
Federal District	29
Other Brazilian States	15
*Family's monthly income**	
B and C classes (R$ 4,461.00 to R$ 1,370.00)	21
D and E classes (R$ 776.00 to R$ 401.00)	23
Number of siblings living with the child	
0	12
1	17
2	7
3	4
4	3
5	1
Position of the child in the family	
First-born or only-child	23
Middle child	6
Youngest child	15
Child's age	
Under six years old	25
Over six years old	19
Diagnosis	
Acute Lymphoblastic Leukemia – High Risk (ALL HR)	27
Acute Lymphoblastic Leukemia – Low Risk (ALL LR)	9
Acute Myeloblastic Leukemia (AML)	8

Note. *In accordance with criteria adopted by the Brazilian Institute of Geography and Statistics – *IBGE*.

Instruments

The following instruments were used in this study:

Ways of Coping Scale (Brazilian version – EMEP). The EMEP version used was developed by Seidl, Tróccoli, and Zannon (2001). The EMEP assesses both cognitive and behavioral coping strategies, applied towards a specific stressor, and distributed in factors: (1) problem-focused coping (Cronbach's alpha=084), behavioral strategies to handle the problem, and cognitive strategies to reassess the stressor; (2) emotion-focused coping (Cronbach's alpha=081), involving avoidance, denial, episodes of rage or tension-related emotions, and guilt attribution; (3) coping based on religious practice or imaginative thoughts (Cronbach's alpha=074), strategies characterized by spirituality and unreal thoughts; and (4) coping based on the search for social support (Cronbach's alpha=070), strategies related to the search for social support (emotional or instrumental). The EMEP's answer criteria is based through on a five-point Likert scale (1=I never do it; 2=I do that a little; 3=I sometimes do it; 4=I do it a lot; 5=I always do it). The coping description is the result of the average of the factors.

The Beck Anxiety Inventory – BAI. The Beck Anxiety Inventory – BAI is a self-applicable instrument translated and adapted to the Brazilian population (Cunha, 2001) which assesses the levels and intensity of cognitive and behavioral episodes that indicate anxiety. This inventory shows 21 items related to anxiety behaviors, and the answers are based on four statements in degrees of intensity ranging from zero to three (0= not at all; 1=mildly, it didn't bother me much; 2=moderately, it was very unpleasant, but I could stand it; and 3=severely, I could barely stand it). The BAI shows high internal consistency (Cronbach's alpha=092) and the results are the sum of the item scores, with a total punctuation ranging from 0 and 63.

Sociodemographic Questionnaire. A sociodemographic questionnaire developed specifically for this study was used to describe the patients and their caregivers. The following data about the caregivers were collected: gender, age, education, marital status, and place of origin. The data collected about the patients involved age and education. The data collected about family were: monthly income, number of children, and the child's position in the family.

Procedure

In order to guarantee the correct application of the ethical norms in researches with human beings, stated in the 196/96 Resolution of the National Health Council, this project was submitted to the Research Ethics Committee (REC) at the Faculty of Health Sciences at the University of Brasília (UnB), accredited to the National Committee for Research Ethics (CONEP) at the National Health Council (CNS). It was approved in 2006 (registration number 142/2006). This study was carried out in the Department of Pediatric Oncology and Hematology of the Federal District, Brazil.

During the first week of the patients' medical treatment, after a leukemia diagnosis was reported to them, the subjects were invited to join this study. After signing the Free Informed Consent and after explanations about this research were given, the caregiver was asked to answer the sociodemographic questionnaire. Then, the EMEP form was filled out and, after that, the BAI form. The whole procedure lasted from10 to 60 minutes.

Data Analysis

Computer softwares were used to work on the data: the Excel 2000 and the SPSS for Windows – Version 15.0. Besides descriptive statistical analysis, data analysis included bivariate Pearson correlations, Student's *t-tests*, and analysis of variance (ANOVA), in order to study associations between anxiety scores and coping related to sociodemographic variables, as well as the differences between the averages obtained from subjects in anxiety scores and coping scores related to sociodemographic characteristics.

Results

Scores Obtained from Anxiety Measures and Coping Strategies

The participants assessed on manifestations of anxiety scored between 8 and 60 points, an average of 27.82 (*SD*=12.49). Moreover, the main coping strategies used were based on religious practices and imaginative thoughts (*Avg*=4.13; *SD*= .53), followed by problem-focused coping strategies (*Avg*=3.85; *SD*= .60), search for social support (*Avg*=3.51; *SD*= .79), and emotion-focused strategies (*Avg*=2.08; *SD*= .56).

Associations between the Caregivers' Sociodemographic Data, the Child's Clinical Status, Manifestations of Anxiety, and Coping Strategies

Table 2 shows the results of the bivariate Pearson correlation regarding the caregiver's age, number of siblings living with the subject, and the measures of anxiety and coping.

Table 2

Results of the Bivariate Pearson's Correlation for the Caregiver's Age, Number of Siblings living with the child, and Anxiety and Coping Measures

Variables	1	2	3	4	5	6	7
1. Caregiver's age	-						
2. Number of siblings	.256	-					
3. BAI	-.196	-.237	-				
4. Problem-focused coping	.208	.100	-.141	-			
5. Emotion-focused coping	.133	-.148	.378*	-.080	-		
6. Religious practice and imaginative thoughts	.315*	-.083	-.051	.644***	-.049	-	
7. Search for social support	.141	.016	-.167	.678***	-.197	.501**	-

Note. *$p < .05$; ** $p < .01$; ***$p < .001$.

Results pointed that the correlation between the caregiver's age and the use of coping strategies focused on religious practices and imaginative thoughts was positive, moderate, and statistically significant. Furthermore, manifestations of anxiety and the adoption of emotion-focused strategies had a positive, moderate and statistically significant correlation.

Another important result is that problem-focused strategies had a positive, moderate and statistically significant correlation to the use of coping strategies based on religious practices and imaginative thoughts, as well as on the search for social support. Coping based on religious practices and imaginative thoughts had positive, moderate and statistically significant association to the search for social support.

A series of Student's *t-tests* was carried out to describe the differences among averages in manifestations of anxiety and coping strategies based on other sociodemographic characteristics of the subjects (place of origin, gender, the child's age, education, marital status, and monthly income). Table 3 shows the averages obtained in each group.

A significant result shows that women obtained higher anxiety scores (*Avg*=30.66) when compared to men (*Avg*=20.25). That difference between the two averages was statistically significant (*t* [42] = 3.091; *p*= .004). Besides that, caregivers of children under six years old showed higher averages in manifestations of anxiety (*Avg*=3.164) when compared to caregivers of children over six years old (*Avg*=22.79). The difference between the two averages was also statistically significant (*t* [42] = 2.451; *p*= .019).

There were also studies on associations among manifestations of anxiety, coping strategies, and sociodemographic characteristics such as the caregivers' age, the child's position in the family, and clinical diagnostic status, based on analysis of variance (ANOVA). The obtained results are shown in Table 4.

Tabela 3
Results from Student's t-Test: Anxiety and Coping Averages and Sociodemographic Characteristics

	Place of Origin		*Gender*		*Child's Age*		*Caregiver's Education*		*Marital Status*		*Monthly Income*	
	Other States	F.D.	Male	Female	Under 6yrs	Over 6yrs	Junior High	High School College	Married	Single Widow	Higher Classes	Lower Classes
BAI	31.20	26.07	20.25**	30.66**	31.64*	22.79*	27.17	28.60	27.34	29.08	25.14	30.26
Problem Focused	3.96	3.79	3.70	3.90	3.80	3.90	3.88	3.81	3.86	3.83	3.87	3.84
Emotion Focused	2.15	2.05	1.96	2.13	2.01	2.17	2.14	2.01	1.99	2.34	2.02	2.14
Religious practice and imaginative thoughts	4.24	4.06	4.00	4.17	4.09	4.18	4.19	4.05	4.13	4.11	4.16	4.10
Search for Social Support	3.52	3.51	3.48	3.53	3.52	3.50	3.73	3.26	3.52	3.50	3.44	3.58

Note. *$p < .05$. ** $p < .01$.

Tabela 4
Analysis of Variance (ANOVA): Anxiety and Coping Averages, Related to Sociodemographic Characteristics

	Caregiver's Age			*Child's Position in Family*			*Diagnosis*		
	20-30	31-45	Above 46	First-born or Only-Child	Middle	Youngest	ALL AR	ALL RB	AML
BAI	31.94	25.68	24.67	31.04	19.67	26.13	27.63	28.00	28.25
Problem Focused	3.75	3.82	4.21	3.94	3.78	3.73	3.78	3.98	3.94
Emotion Focused	2.05	2.06	2.28	2.24	1.99	1.89	2.04	2.06	2.26
Religious practice and imaginative thoughts	3.90	4.21	4.43	4.22	3.93	4.06	4.08	4.06	4.34
Search for Social Support	3.42	3.50	3.80	3.73	3.07	3.37	3.38	3.70	3.78

Note. *$p < .05$. ** $p < .01$. ***$p < .001$.

It is important to highlight that the use of religious practices and imaginative thoughts was noticeably higher in the 46 year-old group and over (*Avg*=4.43), when compared to the group of subjects between 20 and 30 years of age (*Avg*=3.90) and caregivers between 21 and 45 years of age (*Avg*=4.21). However, the difference among the averages was just marginally significant (*F* [2.41] = 2.894; *p*= .067). Another significant result shows that caregivers of only-children or first-borns had higher scores in manifestations of anxiety (*Avg*=31.04) when compared to caregivers of youngest children (*Avg*=26.13) or middle children (*Avg*=19.67). However, the difference between the two averages was not statistically significant (*F* [2.41] = 2.313; *p*= .112).

Discussion

According to the studies of Best et al. (2001), Norberg et al. (2005), Santacroce (2002), and Vrijmoet-Wiersma et al. (2008), and verified by the high averages obtained in this study, the assessments of anxiety show that the moment that the diagnosis is given to the patient and the beginning of treatment are possibly a crucial stage for the implementation of psychosocial interventions to prevent psychological disturbances during treatment. All studies abovementioned show manifestations of anxiety as important elements to the diagnosis mentioned by the caregivers. The averages obtained in this study verify that they can be a potential psychological disturbance when the diagnosis is given.

The correlation among the use of problem-focused coping strategies, religious practices and imaginative thoughts, as well as the search by social support was also highlighted. It verified the results from a study by Greening and Stoppelbein (2007), which showed that the search for social support, optimistic attitude, and problem-focused strategies were positively correlated. On the other hand, the association between manifestations of anxiety and the use of emotion-focused strategies, showed in this study, points to a significant relationship between this coping category and a high level of anxiety. This is a similar result to the data obtained by Greening and Stoppelbein (2007), Hoekstra-Weebers et al. (1998), Norberg et al. (2005), Sloper (2000) and Trask et al. (2003).

If one considers sociodemographic characteristics as factors that influence the development of manifestations of anxiety, then some results should be highlighted. According to Brody and Simmons (2007), McGrath (2001), Sahler et al. (2005), Sloper (2000) and Svavarsdottir (2005), and already showed in this study, the subject's gender seems to be an essential element for the manifestation of indicators of anxiety. However it is necessary to verify whether such difference is due to socially established gender roles, which might allow women to express emotions, but might also indicate an overload of parental chores in charge of women (Best et al., 2001; Norberg et al., 2005; Santacroce, 2002; Vrijmoet-Wiersma et al., 2008).

Overall, according to the results of the studies by Greening and Stoppelbein (2007), Hoekstra-Weebers et al. (2001), Klassen et al. (2007), and Steele et al. (2004), there were not significant associations between coping and characteristics related place of origin, gender, the subject's age, monthly income, the position of the sick child in the family, and the type of diagnosis. However, some results in this study, described as following, seem to indicate that sociodemographic data might be significant, relevant variables which influence the adoption of coping strategies and the experience of anxiety in the early stages of the treatment.

There was relevant association between the caregiver's age and the preference of strategies based on spirituality and imaginative thoughts, as shown by the bivariate Pearson correlation and the analysis of variance. Moreover, low-educated subjects searched for more social support, although the difference among the groups' averages had no statistical significance. Separated, divorced or widow subjects showed higher averages related to emotion-focused coping when compared to married caregivers or in common-law marriage, although the difference among the averages was not statistically significant, either. The collected data suggest that there might be a functional relationship among certain coping types based on age, education, and spouse presence. Also, the data show the importance of matrimonial support both during diagnosis phase and the early stages of the treatment, which may influence the adoption of certain coping strategies over others.

According to the results, it is possible that caregivers of younger children have more chances to develop manifestations of anxiety, probably due to the higher care demands based on the patient's age. Besides that, subjects coming from other Brazilian States showed higher levels of anxiety when compared to caregivers living in the Federal District of Brazil. It must be pointed out that the geographical distance of the family – the other sons and daughters, and their spouse – might minimize social support and increase concerns about parental cares to their healthy children. Caregivers of only children or first-borns had higher scores in anxiety indicators when compared to youngest children's parents or middle children's parents. Considering the caregiver as a person in development, one must also point out that their probably first experience of parenting, associated to a context of exposure to medical treatment and higher care demands, might be a factor that influences the development of manifestations of anxiety.

Finally, the subjects' preference for coping strategies related to religious practices and imaginative thoughts, followed by problem-focused coping and the search for social support, are functionally relevant information to the planning of more efficient interventions, adapted to the caregivers' experiences. There is a clear need of more researches, with broader samples, which enable the systematic analysis of occasional relationships between the coping types adopted by caregivers and their given sociodemographic data. Thus, they could explain which factors can influence manifestations of anxiety and the adoption of coping strategies in pediatric oncology and hematology scenarios, then promoting effective psychosocial interventions.

References

Best, M., Streisand, R., Catania, L., & Kazak, A. E. (2001). Parental distress during pediatric leukemia and posttraumatic stress symptoms (PTSS) after treatment ends. *Journal of Pediatric Psychology, 26*(5), 299-307.

Björk, M., Wiebe, T., & Hallström, I. (2005). Striving to survive: Families´ lived experiences when a child is diagnosed with cancer. *Journal of Pediatric Oncology Nursing, 22*(5), 265-275.

Boman, K., Lindahl, A., & Björk, O. (2003). Disease-related distress in parents of children with cancer at various stages after the time of diagnosis. *Acta Oncologica, 42*(2), 137-146.

Brody, A. C., & Simmons, L. A. (2007). Family resiliency during childhood cancer: The father's perspective. *Journal of Pediatric Oncology Nursing, 24*(3), 152-165.

Clarke, J. (2004). Whose power/authority/knowledge? Conundrums in the experiences of parents whose children have cancer. *Social Work in Health Care, 40*(2), 13-35.

Clarke, J. N., & Fletcher, P. (2003). Communication issues faced by parents who have a child diagnosed with cancer. *Journal of Pediatric Oncology Nursing, 20*(4), 175-191.

Clarke, J. N., & Fletcher, P. (2004). Parents as advocates: Stories of surplus suffering when a child is diagnosed and treated for cancer. *Social Work on Health Care, 39*(2), 102-127.

Clarke, J. N., Fletcher, P. C., & Schneider, M. A. (2005). Mothers' home health care work when their children have cancer. *Journal of Pediatric Oncology Nursing*, *22*(6), 365-373.

Coêlho, N. L. (2006). *O conceito de ansiedade na Análise do Comportamento*. Unpublished master's thesis, University of Pará, Belém, PA.

Cunha, J. A. (2001). *Brazilian Manual for Beck Scale*. São Paulo, SP: Casa do Psicólogo.

Dolgin, M. J., Phipps, S., Fairclough, D. L., Sahler, O. J., Askins, M., Noll, R. B., et al. (2007). Trajectories of adjustment in mothers of children with newly diagnosed cancer: A natural history investigation. *Journal of Pediatric Psychology, 32*(7), 771-782.

Eiser, C., & Eiser, J. R. (2007). Mother's ratings of quality of life in childhood cancer: Initial optimism predicts improvement over time. *Psychology and Health, 22*(5), 535-543.

Elkin, T. D., Jensen, S. A., McNeil, L., Gilbert, M. E., Pullen, J., & McComb, L. (2007). Religiosity and coping in mothers of children diagnosed with cancer: An exploratory analysis. *Journal of Pediatric Oncology Nursing, 24*(5), 274-278.

Gedaly-Duff, V., Lee, K. A., Nail, L. M., Nicholson, H. S., & Johnson, K. P. (2006). Pain, sleep disturbance, and fatigue in children with leukemia and their parents: A pilot study. *Oncology Nursing Forum, 33*(3), 641-646.

Gerhardt, C. A., Gutzwiller, J., Huiet, K. A., Fischer, S., Noll, R. B., & Vannatta, K. (2007). Parental adjustment to childhood cancer: A replication study. *Families, Systems & Health, 25*(3), 263-275.

Goldbeck, L. (1998). Familial coping with cancer in childhood and adolescence: Possibilities for standardized assessment with a self-assessment method: Results of an empirical pilot study. *Praxis der Kinderpsychologie und Kinderpsychiarier, 47*(8), 552-573.

Greening, L., & Stoppelbein, L. (2007). Brief report: Pediatric cancer, parental coping style, and risk for depressive, posttraumatic stress, and anxiety symptoms. *Journal of Pediatric Psychology, 32*(10), 1272-1277.

Hoekstra-Weebers, J. E. H. M., Jaspers, J. P. C., Kamps, W. A., & Klip, E. C. (1998). Marital dissatisfaction, psychological distress, and the coping of parents of pediatric cancer patients. *Journal of Marriage and the Family, 60*(4), 1012-1021.

Hoekstra-Weebers, J. E. H. M., Jaspers, J. P. C., Kamps, W. A., & Klip, E. C. (2001). Psychological adaptation and social support of parents of pediatric cancer patients: A prospective longitudinal study. *Journal of Pediatric Psychology, 26*(4), 225-235.

James, K., Keegan-Wells, D., Hinds, P. S., Kelly, K. P., Bond, D., Hall, B., et al. (2002). The care of my child with cancer: Parent's perceptions of caregiving demands. *Journal of Pediatric Oncology Nursing, 19*(6), 218-228.

Kars, M. C., Duijnstee, M. S. H., Pool, A., Delden, J. J. M., & Grypdonck, M. H. F. (2008). Being there: Parenting the child with acute lymphoblastic leukaemia. *Journal of Clinical Nursing, 17*(12), 1553-1562.

Kazak, A. E., Boeving, C. A., Alderfer, M. A., Hwang, W. T., & Reilly, A. (2005). Posttraumatic stress symptoms during treatment in parents of children with cancer. *Journal of Clinical Oncology, 23*(30), 7406-7410.

Kazak, A. E., McClure, K. S., Alderfer, M. A., Hwang, W. T., Crump, T. A., Le, L. T., et al. (2004). Cancer-related parental beliefs: The Family Illness Beliefs Inventory (FIBI). *Journal of Pediatric Psychology, 29*(7), 531-542.

Keegan-Wells, D., James, K., Stewart, J. L., Moore, I. M., Kelly, K. P., Moore, B., et al. (2002). The care of my child with cancer: A new instrument to measure caregiving demand in parents of children with cancer. *Journal of Pediatric Nursing, 17*(3), 201-210.

Kerr, L. M. J., Harrison, M. B., Medves, J., & Tranmer, J. (2004). Supportive care needs of parents of children with cancer: Transition from diagnosis to treatment. *Oncology Nursing Forum, 31*(6), 116-126.

Kerr, L. M. J., Harrison, M. B., Medves, J., Tranmer, J. E., & Fitch, M. I. (2007). Understanding the supportive care needs of parents of children with cancer: An approach to local needs assessment. *Journal of Pediatric Oncology Nursing, 24*(5), 279-293.

Klassen, A., Raina, P., Reineking, S., Dix, D., Pritchard, S., & O´Donnell, M. (2007). Developing a literature base to understand the caregiving experience of parents of children with cancer: A systematic review of factors related to parental health and well-being. *Support Care Cancer, 15*(7), 807-818.

Kylmä, J., & Juvakka, T. (2007). Hope in parents of adolescents with cancer: Factors endangering and engendering parental hope. *European Journal of Oncology Nursing, 11*(3), 262-271.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.

Ljungman, G., McGrath, P. J., Cooper, E., Widger, K., Ceccolini, J., Fernandez, C. V., et al. (2003). Psychosocial needs of families with a child with cancer. *Journal of Pediatric Hematology/Oncology, 25*(3), 223-231.

McGrath, P. (2001). Findings on the impact of the treatment for childhood acute lymphoblastic leukaemia on family relationships. *Child and Family Social Work, 6*(3), 229-237.

McGrath, P., Paton, M. A., & Huff, N. (2005). Beginning treatment for pediatric acute myeloid leukemia: The family connection. *Issues in Comprehensive Pediatric Nursing, 28*(2), 97-114.

Norberg, A. L., Lindblad, F., & Boman, K. K. (2005). Coping strategies in parents of children with cancer. *Social Science & Medicine, 60*(5), 965-975.

Pai, A. L. H., Greenley, R. N., Lewandowski, A., Drotar, D., Youngstrom, E., & Peterson, C. C. (2007). A meta-analytic review of the influence of pediatric cancer on parent and family functioning. *Journal of Family Psychology, 21*(3), 407-415.

Rodrigues, M. A., Rosa, J., Moura, M. J., & Baptista, A. (2000). Ajustamento emocional, estratégias de *coping* e percepção da doença em pais de crianças com doença do foro oncológico. *Psicologia, Saúde e Doenças, 1*(1), 61-68.

Sahler, O. J. Z., Fairclough, D. L., Phipps, S., Mulhern, R. K., Dolgin, M. J., Noll, R. B., et al. (2005). Using problem-solving skills training to reduce negative affectivity in mothers of children with newly diagnosed cancer: Report of a multisite randomized trial. *Journal of Consulting and Clinical Psychology, 73*(2), 272-283.

Santacroce, S. (2002). Uncertainty, anxiety, and symptoms of posttraumatic stress in parents of children recently diagnosed with cancer. *Journal of Pediatric Oncology Nursing, 19*(3), 104-111.

Seidl, E. M. F., Tróccoli, B. T., & Zannon, C. M. L. C. (2001). Análise fatorial de uma medida de estratégias de enfrentamento. *Psicologia: Teoria e Pesquisa, 17*(3), 225-234.

Silva, S., Pires, A., Gonçalves, M., & Moura, M. J. (2002). Cancro infantil e comportamento parental. *Psicologia, Saúde & Doenças, 3*(1), 43-60.

Sloper, P. (2000). Predictors of distress in parents of children with cancer: A prospective study. *Journal of Pediatric Psychology, 25*(2), 79-91.

Steele, R. G., Dreyer, M. L., & Phipps, S. (2004). Patterns of maternal distress among children with cancer and their association with child emotional and somatic distress. *Journal of Pediatric Psychology, 29*(7), 507-517.

Steele, R. G., Long, A. L., Reddy, K. A., Luhr, M., & Phipps, S. (2003). Changes in maternal distress and child-rearing strategies across treatment for pediatric cancer. *Journal of Pediatric Psychology, 28*(7), 447-452.

Svavarsdottir, E. K. (2005). Gender and emotions: Icelandic parents experiencing childhood cancer. *International Journal of Nursing Studies, 42*(5), 531-538.

Trask, P. C., Paterson, A. G., Trask, C. L., Bares, C. B., Birt, J., & Maan, C. (2003). Parent and adolescent adjustment to pediatric cancer: Associations with coping, social support, and family function. *Journal of Pediatric Oncology Nursing, 20*(1), 36-47.

Vrijmoet-Wiersma, C. M. J., Van Klink, J. M. M., Kolk, A. M., Koopman, H. M., Ball, L. M., & Egeler, R. M. (2008). Assessment of parental psychological stress in pediatric cancer: A review. *Journal of Pediatric Psychology, 33*(1), 1-13.

Wijnberg-Williams, B. J., Kamps, W. A., Klip, E. C., & Hoekstra-Weebers, J. E. H. M. (2006). Psychological distress and the impact of social support on fathers and mothers of pediatric cancer patients: Long-term prospective results. *Journal of Pediatric Psychology, 31*(8), 785-792.

Young, B., Dixon-Woods, M., Findlay, M., & Heney, D. (2002). Parenting in a crisis: Conceptualizing mothers of children with cancer. *Social Science & Medicine, 55*(10), 1835-1847.

Recebido: 28/02/2009
1ª revisão: 21/01/2010
Aceite final: 30/04/2010