Supportive Care in Cancer

Do Parents of Children with Cancer Want to Participate in Treatment Decision-Making?

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Do Parents of Children with Cancer Want to Participate in Treatment Decision-Making?

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Abstract

Purpose: This study aimed to describe parents' preferences regarding their role in treatment decision-making when a child has cancer and examines whether their preferences were related to the parents (sex and education level), patients' characteristics (age group and treatment status), and healthcare context features (parents' perception of family-centered care).

Methods: Two-hundred and twenty-eight parents of children/adolescents with cancer were recruited from two Portuguese pediatric oncology wards. Participants provided sociodemographic and clinical information. The Control Preferences Scale for Pediatrics was used to assess the parents' preferred role in treatment decision-making. The Measure of Process of Care assessed the parents' perception of family-centered care (family-centered services and providing general information subscales).

Results: Results showed that parents preferred a passive-collaborative role (44.8%), followed by collaborative (27.8%), passive (20.9%) and active-collaborative (6.5%). None preferred an active role. Chi-square test showed that most of the parents preferring an active-collaborative role had higher education degrees, while those preferring a passive role had lower education degrees. Additionally, groups did not differ according to the parents' sex, patients' age and treatment status. A multivariate analysis of variance showed that parents preferring an active-collaborative role reported lower scores on family-centered services compared to those preferring passive-collaborative and passive roles. Finally, no differences were found concerning providing general information scores.

Conclusions: This study's findings may guide professionals in identifying parents' preferences regarding their participation in treatment decision-making process. Mapping their preferences may support professionals in promoting desirable levels of parental involvement when decisions are necessary in pediatric oncology context.

Keywords: pediatric cancer and oncology; treatment decision-making; family-centered care; parents

Introduction

Pediatric cancer is an adverse and potentially traumatic experience for children and their families. For children, it is charged with painful procedures and therapies with a wide range of adverse side effects (e.g., nausea, fatigue, and weight loss or gain), long-term effects (e.g., infertility, recurrence, or second cancer) [1], and psychosocial sequelae (e.g., poor psychological well-being, low self-esteem, and behavior problems) [2]. For parents, throughout the course of cancer, their lives revolve around providing healthcare (e.g., monitoring side effects and administering medication) and emotional support to the ill child [3].

Since the 1970s, significant changes have occurred in the way pediatric healthcare is provided [4], with parents being generally recognized as important allies of healthcare teams. In pediatric oncology settings, shortly after the diagnosis, parents are expected to act as surrogate decision-makers, making potentially life-altering decisions regarding their child's care [5-7]. These decisions range from issues related to everyday care (e.g., modality of treatment administration and schedule of sessions) to more complex matters such as enrollment in experimental therapies, clinical trials, or end-of-life care [5, 8]. The purpose of this study was to examine parents' preferences regarding their participation in treatment decision-making (TDM) when a child is diagnosed with cancer.

Although one would expect that parents want to be fully involved when decisions regarding their child's care are necessary, research has not supported this assumption. Pediatric cancer is a challenging experience comprising intense emotional reactions, an extensive amount of confusing medical information, and great uncertainty about the child's future, which adds complexity to the TDM process [9, 10]. Current research shows that parents' preferred TDM roles fall along a continuum, from leaving the decisions up to the physician (passive role), seeking a teamwork relationship with the physician (collaborative role), to holding an autonomous role (active role) [11]. Research findings have consistently reported that a high proportion of parents prefer to have a collaborative role in TDM (52%-66%) [11-13]. However, conflicting evidence exists regarding the distribution of active and passive roles: while Gagnon

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& Recklitis [12] and Mack et al. [13] found that the second most reported preference was the passive followed by the active role, Pyke-Grimm et al. [11] found the inverse.

This inconsistency in findings suggests that parents' TDM preferences vary across situations and contexts. According to the conceptual model proposed by Stewart, Pyke-Grimm and Kelly [10], parents' TDM preferences may be influenced by personal characteristics (e.g., parents' sex and education level), illness (e.g., severity and prognosis), and relationship factors (e.g., trust and support from healthcare professionals). Studies of adult cancer patients found significant associations between patients' sex, age [14], and education level [15] and their preferences regarding their participation in the TDM process. In contrast, empirical research on parents of children with cancer, specifically exploring the potential influencing factors of parents' TDM preferences, has not provided empirical support for the association between personal characteristics (e.g., parents' age, sex, and education) [11, 13] or illness-related variables (e.g., the time elapsed since diagnosis) [11, 12] and parents' TDM preferences.

Regarding relationship factors, there is an assumption that treatment decisions are made within the context of the parents-healthcare team relationship, and that TDM preferences evolve as this relationship changes [16]. A previous study found that parents identified their relationship with the physician, specifically the trust or the nature of their communication, as a critical influence on their preferences regarding their own participation in TDM [5].

Built upon a collaborative partnership among parents and healthcare professionals, family-centered care is a widely implemented approach in pediatric settings [17]. Recommended practices within this approach include providing adequate information and supporting parents in TDM while respecting their preferences and needs [8]. Thereby, family-centered care challenges the top-down model of healthcare [17] within which the physician has the authority to simply tell parents what they need to do. Given that family-centered care encourages parents' involvement in their child's healthcare [18], it is legitimate to hypothesize that when these practices are implemented, parents prefer to be highly involved in TDM. Nevertheless, to the best of our knowledge, the association between the provision of family-centered care and parents' TDM preferences has not been examined in the specific context of

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pediatric cancer. Encompassing a system-oriented perspective, this study addressed how the nature of the relationship within a larger system (healthcare system) may influence parent-physician interactions in the specific context of TDM.

Another issue that merits special attention when exploring parents' TDM preferences pertains to the patients' developmental level. Although parents are legally responsible for their child's healthcare issues [19], a previous study found that most parents take into high consideration their child's preferences when making decisions [20]. Depending on the patients' emotional and cognitive development, they may be asked to be involved in minor decisions [21]. Although younger children seem to be satisfied with adults being the main decision-makers, adolescents tend to prefer to be involved in TDM [22]. Studies in the field have not accomplished a developmental emphasis, such as specifically testing whether the TDM preferences of parents of children differ from those of parents of adolescents.

Despite the growing interest in TDM among adult cancer patients [5], little is known regarding the extent to which parents of children with cancer want to participate in TDM [10, 11s]. Such information is important, especially because the incongruence between the individual's preferred and actual TDM roles is known to lead to low satisfaction with the healthcare provided [23]. Considering the lack of knowledge on parents' TDM preferences, the current study aimed to: (1) describe parents' preferred TDM roles and (2) explore differences between TDM preference groups regarding parents' sociodemographic characteristics (sex and education level), patients' sociodemographic and clinical characteristics (age group and treatment status), and healthcare context features (parents' perception of family-centered care). No specific hypotheses were formulated due to the paucity of research on parents' TDM preferences in the context of pediatric cancer, in particular, in European countries.

Methods

Participants

The final sample comprised 228 parents between 27 and 57 years old. Most were mothers with secondary or lower education levels and were married/cohabiting. The children/adolescents were on average 12.96 years old ($SD = 3.15$) and were mainly boys. Most were off-treatment

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and the most common diagnoses were leukemia and lymphoma. Sociodemographic and clinical background of the sample is summarized in Table 1.

Procedures

Data were collected as part of a larger research project approved by the Institutional Review Boards of Portuguese Institutes of Oncology in both Lisbon and Porto. Parents of children/adolescents with cancer were recruited from the pediatric wards of the referred hospitals between August 2015 and February 2017 using a consecutive sampling method. Eligible parents were the primary caregivers of a child/adolescent who was: (1) 8-17 years old; (2) diagnosed with malignant cancer for at least 3 months; and (3) receiving antineoplastic treatment (on-treatment) or had completed treatment within the last 5 years (off-treatment). Exclusion criteria included comorbidity with other chronic health conditions, major developmental delays, or end-of-life care.

Detailed information regarding the study was provided to eligible parents. Of all the parents approached, only two refused to participate due to time constraints and the burdensome nature of their cancer experience. After providing written informed consent, the participants completed questionnaires while waiting for clinic appointments or medical procedures. A trained researcher was available to provide assistance upon request.

Measures

Sociodemographic and clinical information

Parents provided sociodemographic (e.g., age, sex, and marital status) and clinical information (e.g., diagnosis and treatment status). The family socioeconomic status (SES) was classified based on the education and current job of the child's caregivers [24].

Parents' preferred treatment-decision making role

The parents' preferences concerning their level of participation in TDM were assessed using an adapted version of the Control Preferences Scale for Pediatrics (CPS-P) [11]. The modified version used in this study was based on the "pick-one-option" method [25]. The participants read five sentences each representing a different level of participation in TDM: Active (parent alone making the final decision); Active-Collaborative (parent making the final decision after

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physician's input); Collaborative (parent and physician sharing the decision); Passive-Collaborative (physician making the final decision after parent's input); and Passive (physician alone making the final decision). The parents were then asked to choose the sentence that best described the level of participation they preferred when making decisions regarding their child's treatment. For analysis purpose, empirical research within TDM has used both five (as described above) and three levels (collapsing the five roles into three major categories – Active: mostly parent making decisions; Collaborative: shared decision; and Passive: mostly physician making decisions).

Parents' perception of family-centered care

The modified version of the Measure of Processes of Care (MPOC-20) for the pediatric oncology setting [26] was used to assess the parents' perception of family-centered care. This measure specifically examines the way healthcare professionals interact with parents reflecting the general guidelines of family-centered care [27]. The Family-Centered Services subscale (15 items) addresses the extent to which the healthcare is comprehensive, reflects a partnership with parents, respects and honors their preferences, and provides specific and adequate information about the child (e.g., "In the past year, to what extent do the people who work with your child plan together so they are all working in the same direction?"). The Providing General Information subscale (5 items) relates to activities intended to meet parents' general information needs (e.g., "In the past year, to what extent does the organization where you receive services have information available to you in various forms, such as a booklet, kit, video, etc.?"). Answers are provided on a 7-point Likert scale ranging between 1 (*Not at all*) and 7 (*To a very great extent*). Mean scores were calculated for each subscale, with higher scores reflecting more frequent family-centered care practices. Cronbach's alpha ranged from .78 (providing general information) and .89 (family-centered services) in the present study.

Data analysis

Analyses were conducted using the Statistical Package for the Social Sciences (SPSS, v.24). First, descriptive statistics were performed. Given the absence of participants preferring an Active role, we only used four levels of the CPS-P for analysis purposes (Active-Collaborative,

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Collaborative, Passive-Collaborative, and Passive). Differences between these four groups in sociodemographic and clinical characteristics, as well as in perceptions of family-centered care, were explored. More precisely, the chi-square test for independence was conducted for categorical variables (parents' sex and education level, and patients' age group and treatment status). The effect sizes were interpreted based on Cohen's benchmarks for contingency tables with 3 degrees of freedom: Cramer's $V = .06$ (small), $.17$ (medium), and $.29$ (large) effect size [30]. Post hoc procedures were performed following Beasley and Schumacker's recommendations for interpreting contingency tables based on adjusted standardized residuals and the adjusted Bonferroni p-value [28].

Additionally, a one-way multivariate analysis of variance (MANOVA) was performed including Family-Centered Services and Providing General Information as dependent variables and the parents' preferred TDM role as an independent factor. First, preliminary assumptions were checked, particularly dependent variables normal distribution (q-q plots), equality of error variances (Levene's test) and covariance matrices (Box M). Wilks's lambda criterion was used to test the significance of the multivariate effect [29]. When a multivariate effect was detected, univariate analyses were further conducted. Effects sizes were considered: $\eta_p^2 = .01$ (small), $\eta_p^2 = .06$ (medium), and $\eta_p^2 = .14$ (large) [30]. Post hoc analyses, using the Bonferroni correction, were employed to detect which groups differed from each other regarding their perceptions of family-centered care.

Results

As shown in Table 3, the parents' preferred TDM roles were as follows: passive-collaborative (44.8%), collaborative (27.8%), passive (20.9%), and active-collaborative (6.5%). Table 3 also shows differences among the TDM preferences groups according to the parents' sociodemographic characteristics (sex, education level, and children's age), children's sociodemographic (age), and clinical characteristics (treatment status). First, concerning the parents' sociodemographic characteristics, chi-square analyses suggested a non-significant relationship between that parents' sex and TDM preferences. Regarding the parents' education level, the results showed a significant difference pointing to a medium effect based on Cramer's

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V statistic. A post hoc analysis indicated that the difference was in the groups preferring an active-collaborative ($Z = 1.98, p = .048$) and a passive role ($Z = 2.65, p = .008$). Specifically, a considerably higher percentage of parents with a university education degree (vs. secondary or a lower level degree) was found among those who preferred an active-collaborative role. Additionally, a higher percentage of those who preferred a passive role had a secondary or lower level degree (vs. a university degree). Regarding the patients' characteristics, the results revealed non-significant relationships between the TDM preferences and the patients' age and treatment status.

With regard to healthcare context features (parents' perceptions of family-centered care), the results of the MANOVA revealed a reasonably normal distribution of dependent variables, as well as equality of error variances [Family-Centered Services: $F(3, 224) = .39, p = .76$; Providing General Information: $F(3, 224) = .18, p = .91$] and covariance matrices [Box M = 8.86, $F(9) = .96, p = .47$]. We found a significant multivariate effect [$F(6, 492) = 2.89, p = .009$; Wilk's lambda = .933; $\eta^2_p = .034$], reflecting a small difference between the TDM preferences groups on the combined variables of family-centered care (family-centered services and providing general information). Univariate analysis showed a statistically significant effect for family-centered services [$F(3, 224) = 4.15, p = .007, \eta^2 = .05$], but not for providing general information [$F(3, 224) = 2.56, p = .056, \eta^2 = .03$]. More precisely, post hoc comparisons suggested that the parents preferring an active-collaborative role scored significantly lower on their perceptions of family-centered services ($M = 4.25, SD = 1.25$), compared to the parents preferring a passive-collaborative ($M = 5.39, SD = 1.18$) and a passive role ($M = 5.52, SD = 1.19$).

Discussion

This study focused on parents' TDM preferences when a child has cancer, namely on the factors potentially affecting their desired level of participation. The findings showed that most parents preferred the physician to take the leading role while considering their input (passive-collaborative role). The results also indicated that TDM varied according to the

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parents' education level and their perception of family-centered services, denoting the complex and heterogeneous nature of parental decision-making in the pediatric oncology setting.

An important finding of this study was that the parents expressed greater preference for a passive-collaborative role in TDM, i.e., 44.8% expressed the willingness to participate in decisions, without having the ultimate responsibility of choosing, which would be ideally undertaken by the physician. When interpreting this finding, it is critical to acknowledge that making treatment decisions in pediatric oncology context confronts parents with complex medical information [9, 10]. In addition, submitting the ill child to different treatment-related choices may have major consequences for his/her future [31], without any certainty regarding the decisions' outcomes [6]. Considering these challenges, parents may desire to be spared from the responsibility of making choices.

A previous study found that when the physician was less involved in TDM, parents perceived a greater difficulty in making decisions [32]. This may explain the low percentage of participants preferring to take the lead in TDM process: none preferred to have total control over the decisions (active role: 0%); and only a low percentage preferred to make the final decision after considering the physicians' input (active-collaborative role: 6.5%). These findings suggest that the majority of parents tend to trust the physician's expertise to make accurate decisions. In fact, the high proportion of role choices fell in the continuum options where the physician had at least some degree of responsibility in TDM (collaborative, passive-collaborative, and passive roles).

Although parents seem to value physicians' input, this does not necessarily mean that they do not want to participate in TDM. In fact, we found that only a few parents (20.9%) preferred a passive role, completely leaving decisions up to the physician. Instead, most preferred either a clear partnership with the physician (collaborative role: 27.8%) or preferred to be considered but without having the responsibility of ultimately deciding (passive-collaborative role: 44.8%). The frequent preferences for some level of shared decision authority may be reflective of the contemporary healthcare approaches, within which both parents and professionals have valuable insights into the child's care [18]. Furthermore, the willingness to

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be somehow involved in TDM may be related to a parental need to be the child's advocate.

Research has highlighted that making treatment decisions on the child's behalf is perceived as a fundamental responsibility of being a good parent [5, 12]. Another possible explanation for this result pertains to the loss of control brought out by the cancer diagnosis. Studies have suggested that being involved in advocating activities may provide some sense of control [8, 32, 33], which can be particularly important in this context where parents may feel disempowered.

For comparison purposes, we collapsed our five-level variable into the three major categories used in previous research (active, collaborative, and passive). Approximately two-thirds of our sample (65.7%) preferred the roles from the passive category, representing a higher percentage than observed in previous studies [11-13]. This discrepancy may arise from the sociocultural background. Previous studies were conducted in North America, where parental authority is highly valued, compared to European countries, where high regard is given to the physicians' authority [34]. Therefore, the possible traditional features in Portuguese healthcare context could explain the higher percentage of parents preferring passive roles in TDM. Another possible reason for this discrepancy may be linked to disparities in the number of clinical trials or protocols for experimental therapies across different countries [6], which may result in different perceptions of the number of opportunities for parental participation in TDM.

The second set of findings concerns the factors associated with the parents' TDM preferences. First, regarding parents' sociodemographic characteristics, the results suggested that mothers and fathers did not differ in their preferences, as previously found [11]. In turn, the parents' education level was identified as a significant factor in their TDM preferences. This result is in line with earlier findings suggesting that higher education explained willingness for increased time in TDM [35]. Our results specifically showed that those who preferred an active-collaborative role tended to have higher levels of education, and those preferring a passive role tended to have lower levels of education. We may hypothesize that parents with lower education levels may be particularly aware of their limited knowledge of medical terms. This lack of knowledge is known to lead to difficulties in advocating for the child [8]. Possibly, perceiving themselves as less capable of participating in TDM, these parents may prefer to rely on

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physicians' authority. Additionally, it is possible that higher educated parents are aware of their legal rights as surrogate decision-makers for their child and therefore express their willingness to exercise this right.

Concerning the patients' characteristics, no differences were detected between the preferences of parents whose children were on-treatment and off-treatment. This finding is in line with a previous study that showed no significant differences in TDM preferences according to illness-related factors [11]. Similarly, the results indicated a non-significant difference among TDM preferences between the parents of children and the parents of adolescents, suggesting that the parents' desired level of participation may not depend on the patients' developmental stage. This result could be explained by the parental legal responsibility to make medical decisions on their child's behalf. Even though parents may take into consideration their child's opinion, they may not relinquish their responsibility as surrogate decision-makers until the child reaches adulthood. However, our sample comprised only parents of school-aged children and adolescents. The inclusion of parents of infants, toddlers, and pre-school aged children, as well as young adults in future studies could clarify the role of developmental issues on parents' TDM preferences.

Finally, we found that parents' preferring an active-collaborative role perceived family-centered services as less frequent compared to those preferring passive-collaborative and passive roles. Although small in magnitude, these results may denote a general tendency for parents to mostly rely on the physicians for making decisions when services are provided in a family-centered manner. Within family-centered care approach, professionals listen to parents' viewpoint and share unbiased information concerning the child's health condition while identifying and respecting parents' care preferences, namely regarding their participation in TDM [18]. Practices aligned with this philosophy of care may reassure parents that professionals are committed to the best interests of the child [36], thus nurturing parents' trust for sharing or even relinquishing total control up to the physician. In this sense, a study has previously highlighted that parents who preferred a passive role reported that they highly trust the physician's knowledge [5]. Additionally, open communication and clear information

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sharing, which are important features of family-centered services, may provide a better sense of control over the illness situation [36]. This increased sense of control may lead to a decreased need to monitor and be actively involved in TDM.

Limitations

The results of this preliminary study should be interpreted within some limitations. First, the data were collected from two Portuguese public hospitals, which may limit the generalization of our results to other cultural and healthcare system backgrounds. Second, no specification of the type of decision was provided in the research protocol instructions, thus the participants could have referred to decisions of different complexity and nature. Third, the sample size and the unequal distribution of the groups' sizes did not allow for the exploration of potentially important factors (e.g., type of diagnosis and primary diagnosis/relapse). Fourth, the cross-sectional design limited our ability to draw valid conclusions about causality. In particular, we cannot determine that the parents' TDM preferences were a result of family-centered care. Longitudinal studies could clarify this aspect and also provide a better understanding as to whether and how parents' TDM preferences change over the illness course. Finally, it is also important to consider that this study focused only on parents' preferences; future research could further explore the concordance between parents' preferred and actual TDM roles.

Despite the aforementioned study limitations, a number of strengths can be acknowledged. Research examining TDM process in the specific context of pediatric oncology is scarce. Moreover, this study was guided by a theoretical model [10], and as such, our findings provide a valuable contribution to the development of this framework, in particular clarifying the role of developmental and clinical features (patients' age group and treatment status). In addition, to the best of our knowledge, this is the first study addressing the relationship between the provision of family-centered care and parents' TDM preferences.

Clinical implications

The current findings offer useful knowledge for clinical practice in the pediatric oncology setting. The empirical evidence that most parents desire to participate in TDM on a

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passive-collaborative and collaborative basis reinforces the need to listen to parents' concerns when decisions are made, as well as the need to identify effective ways of promoting teamwork relationships between parents and physicians. The identification of factors accounting for variability in parents' preferences (namely parents' education level and perception of family-centered services) underscored the importance of rejecting a "one-size-fits-all" approach. In this specific matter, the use of screening tools could help to clearly identify parents' needs and preferences. Our findings may generally guide professionals to better tailor their practices to parents' preferences when making decisions affecting a child's life. As previously acknowledged by Hinds, the nature of TDM process may influence family members' adaptation to the illness experience [20]. Moreover, considering that TDM is perceived as the parents' responsibility for protecting their child [5], optimally supporting parents through TDM process may be an effective way of supporting the parenting role when a child is diagnosed with cancer.

Conclusion

This study's findings revealed that parents of children with cancer are likely to desire some level of involvement when decisions regarding their child's healthcare are necessary. Furthermore, the parents' education and their perception of family-centered services were identified as potential influencing factors of their TDM preferences. While mapping the parents' preferences, this study's findings provided new and valuable theoretical and clinical insights concerning TDM process in the emotionally taxing context of pediatric oncology. Future research focused on the congruency between preferred and actual parental TDM roles could provide a more comprehensive understanding of TDM process within pediatric cancer.

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Compliance with Ethical Standards

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and

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with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

This article does not contain any studies with animals performed by any of the authors.

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Conflict of Interest: The authors declare no conflict of interest. The authors have full control of all primary data and allow the journal to review their data if requested.

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PARENTS' PREFERENCES FOR TREATMENT DECISION-MAKING

Table 1. Sociodemographic and clinical characteristics of the sample ($N = 228$)

	<i>n (%)</i> / <i>M (SD)</i>
<i>Parents</i>	
Sex	
Male	30 (13.2%)
Female	198 (86.8%)
Age	41.75 (5.79)
Marital status	
Married/cohabiting	171 (75.0%)
Single/divorced	57 (25.0%)
Education level (completed)	
Secondary or less	170 (74.6%)
University	58 (25.4%)
Socioeconomic status	
Low	95 (41.7%)
Medium	91 (39.9%)
High	42 (18.4%)
Employment status	
Employed	138 (60.5%)
Sick leave, unemployed, retired	90 (39.5%)
Other children at home	
Yes	151 (66.2%)
No	77 (33.8%)
<i>Children</i>	
Sex	
Male	146 (64.0%)
Female	82 (36.0%)
Age group	
Children (8-12 y)	123 (53.9%)
Adolescents (13-17 y)	105 (46.1%)
Cancer diagnosis	
Leukemia	102 (44.7%)
Lymphoma	70 (30.7%)
Solid tumor (extra CNS tumor)	39 (17.1%)
Central nervous system (CNS) tumor	13 (5.7%)
Langerhans cell histiocytosis	4 (1.8%)
Treatment status	
On-treatment	111 (48.7%)
Off-treatment	117 (51.3%)
Relapse	
No	212 (93.0%)
Yes	16 (7.0%)
Time since diagnosis (months)	28.74 (27.63)

PARENTS' PREFERENCES FOR TREATMENT DECISION-MAKING

Table 2. Comparison of parents' sociodemographic, children's sociodemographic, and clinical characteristics between the TDM preferences groups

	Active- Collaborative (<i>n</i> = 15, 6.5%)	Collaborative (<i>n</i> = 64, 27.8%)	Passive- Collaborative (<i>n</i> = 103, 44.8%)	Passive (<i>n</i> = 48, 20.9%)	Group effect
<i>Parents</i>					
Sex, <i>n</i> (%)					
Female	11 (73.3%)	58 (90.6%)	88 (85.4%)	43 (89.6%)	$\chi^2(3) = 3.72; p = .294$
Male	4 (26.7%)	6 (9.4%)	15 (14.6%)	5 (10.4%)	
Education level, <i>n</i> (%)					
Secondary or less	8 (53.3%)	43 (67.2%)	78 (75.7%)	43 (89.6%)	$\chi^2(3) = 11.24; p = .010$
University	7 (46.7%)	21 (32.8%)	25 (24.3%)	5 (10.4%)	
<i>Children</i>					
Age, <i>n</i> (%)					
Children	11 (66.7%)	34 (53.1%)	56 (54.4%)	23 (47.9%)	$\chi^2(3) = 1.68; p = .641$
Adolescents	5 (33.3%)	30 (46.9%)	47 (45.9%)	25 (52.1%)	
Treatment status, <i>n</i> (%)					
On-treatment	9 (60.0%)	32 (50.0%)	45 (43.7%)	25 (52.1%)	$\chi^2(3) = 2.048; p = .562$
Off-treatment	6 (40.0%)	32 (50.0%)	58 (56.3%)	23 (47.9%)	

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Authorship/Disclosure Form

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MANUSCRIPT ID NUMBER

Do Parents of Children with Cancer Want to Participate in Treatment Decision-Making?

Article title (first few words)

First/Corresponding Author: Ágata Salvador

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