

Research Article

Different Coping Constructs in Haematological Cancer Patients: The Influence of Dyadic on Individual Coping Interplay of DC and IC in Haematological Cancer

Carlotta Sackmann ¹, Gregor Weißflog,¹ Daniela Bodschwinn ,^{2,3} Klaus Hönig ,^{2,3} and Jochen Ernst ¹

¹Department of Medical Psychology and Medical Sociology, Leipzig University, Leipzig, Germany

²Department of Psychosomatic Medicine and Psychotherapy, University of Ulm, Ulm, Germany

³Comprehensive Cancer Center Ulm (CCCU), Ulm, Germany

Correspondence should be addressed to Carlotta Sackmann; carlotta.sackmann@gmx.de

Received 10 November 2022; Revised 25 June 2023; Accepted 3 January 2024; Published 25 January 2024

Academic Editor: Kevin Sheng-Kai Ma

Copyright © 2024 Carlotta Sackmann et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Objective. The aim of the present study was to investigate the relationship between individual coping (IC) and dyadic coping (DC), more specifically the respective predictive impact of DC and sociodemographic, partnership-related, and medical variables on IC in haematological cancer patients. **Methods.** In this multicenter longitudinal study, we examined DCI (Dyadic Coping Inventory) and IC (Freiburg Questionnaire on Coping with Illness) in 214 haematological cancer patients after their treatment and six months later. Associations between the coping constructs were calculated using Pearson correlations. Multiple linear regression analyses were conducted to examine the predictive impact of patient-specific variables on IC strategies. **Results.** Pearson correlation revealed numerous significant associations between DC and IC at the baseline and follow-up, but none of them yielded $r \geq |0.4|$ ($p < 0.01$). Regression analyses showed a predictive impact of supportive DC on compliance ($p < 0.05$) and of common DC on active IC ($p < 0.01$). Concerning patient-specific variables, age stood out as a positive predictor of trivialization ($p < 0.001$) and compliance ($p < 0.01$) and psychological distress as a predictor of depressive IC ($p < 0.001$), distraction ($p < 0.05$), and trivialization ($p < 0.05$). **Conclusion.** Our results indicate that patients' personal characteristics, such as age and psychological distress, outweigh the influence of DC on IC in haematological cancer patients.

1. Introduction

Haematological cancer encompasses numerous subtypes, ranging from aggressive to chronic, and each subtype has unique characteristics and rates of progression. Compared with solid tumors, haematological cancer is known for its aggressive nature, its lengthy duration, and serious side effects [1, 2]. These often result in a variety of physical, psychological, emotional, and social consequences for the patient [3]. The highly aggressive treatments, such as high-dose chemotherapy, total body irradiation, and haematopoietic stem cell transplantation (HSCT), which requires mandatory isolation of patients, are considered to be

particularly stressful for both patients and their partners [4–6]. In order to cope with these challenges, patients can resort to both individual and dyadic coping strategies. The latter describes the way couples respond to a shared stressor through a collaborative process [7]. The present longitudinal study aims to increase our understanding of the interplay between dyadic coping (DC) and individual coping (IC) in patients with haematological cancer.

It was not until the early 1990s that research in Europe and the United States began to conceptualize coping in partnerships as a dyadic rather than an exclusively individual phenomenon that results from the interactions of the two partners [8]. In recent years, this view has become

increasingly influential and has been the central focus of various empirical studies [9–12]. DC describes the interaction of both the patients' and the partners' coping efforts and can be defined as "one partner's attempt to reduce the external stress perceived by his or her partner, and a joint effort to cope with stress that arises within the relationship" [13]. The Dyadic Coping Inventory (DCI) is a widely used international measurement tool for assessing DC, which distinguishes between positive DC (supportive DC, delegated DC, common DC) and negative DC (use of meaningless flowery phrases, ambivalent and hostile behavior). The construct implies a sequence of events stemming from the stressed person's expression of stress, to the partner's perception of stress, and to the partner's coping response [8]. In contrast, traditional models, such as the transactional stress theory by Lazarus and Folkman, focus on the individual-centered perspective of stress management, considering coping efforts as an individual process [14]. Based on this model, Muthny developed the Freiburg Questionnaire on Coping with Illness (FKV) [15], which examines cognitive, emotional, and behavioral coping mechanisms of individuals suffering from chronic disease (e.g., cardiac disease, cancer, and multiple sclerosis) [16].

There is extensive evidence for the importance of both DC and IC in adaptation to illness and cancer patients' well-being. Literature reveals that IC behaviors, such as problem-solving, are associated with better physical and mental health outcomes. IC strategies, such as avoidance, denial, or giving-up, on the other hand, are associated with higher levels of psychological distress, fatigue, anxiety, depression, and lower physical well-being in a variety of solid tumors, including head and neck cancer [17, 18], breast cancer [19–21], gynecologic cancer [22, 23], and prostate cancer [24]. Regarding DC, problem-solving, emotion-regulation-oriented, and common coping were found to be positively associated with physical and mental health in cancer patients, whereas hostile DC was associated with poorer health (e.g., [9, 10, 25, 26]). However, controversy exists regarding the interplay of these two coping constructs [27]. According to the latest model, the dyadic regulatory connectivity model (DR-CM), the use of IC and DC depends on the characteristics and the situation of the individuals involved [28]. This is consistent with Berg and Upchurch's Developmental Contextual Model (DCM), which states that illness appraisals, coping, and, ultimately, outcome can be influenced by contextual factors (e.g., culture, age, gender, type or stage of illness, and quality of marriage) [29]. A number of studies support this assumption by demonstrating the influence of patients' individual characteristics such as age [30, 31], socioeconomic status (SES) [32], level of psychological distress [33], or relationship satisfaction [34] on coping behavior in chronic disease such as breast cancer, prostate cancer, congenital heart disease, and malignant glioma. Our decision of identifying DC at the baseline as a predictor for IC at follow-up is also based on the DCM considering DC as "potentially the first line of coping for couples in dealing with stressful events" [29]. With this in mind, the purpose of this study is to examine whether and how DC and certain patient-specific characteristics at the

baseline predict IC at follow-up in a sample of 214 haematological cancer patients.

In a study of 92 newly diagnosed female (predominantly breast) cancer patients, Paschali et al. found that more active IC behaviors (such as problem-solving) were positively associated with supportive and common DC, whereas IC behaviors such as avoidance and rumination were negatively associated with supportive and common DC. The study also examined correlations between potential influencing factors with DC and IC, finding no significant differences in both coping constructs between the level of education, presence of children, relationship duration, and patient age [27]. Two other studies found that adaptive IC was positively related to positive and common DC and negatively related to negative DC, whereas maladaptive IC was negatively associated with common DC [35, 36]. According to Paschali et al., positive IC and common coping were associated with higher levels of emotional well-being, and according to Brandão et al., the influence of IC on cancer-related well-being and quality of life is persistent, underlining the importance of both IC and DC for the well-being of cancer patients [27, 37]. However, the cross-sectional design of these studies does not allow for drawing causal conclusions. Moreover, two of them examined participants' coping behaviors in relation to everyday stressors, whereas the interplay of DC and IC in relation to cancer remains largely unexplored.

To date, this is the first empirical study on the relationship between DC and IC in haemato-oncological patients. Knowledge about the interplay between these two coping constructs and possible predictors of IC may help clinicians improve psycho-oncological treatment and better understand the determinants of IC in general. We aimed to investigate

- (a) How DC and IC strategies change over time
- (b) Associations between baseline (t_1) DC and IC and six-month follow-up (t_2) DC and IC
- (c) The predictive impact of baseline DC as well as sociodemographic (gender, age, and SES), partnership-related (relationship duration and relationship satisfaction), and medical variables (haematopoietic stem cell transplantation and psychological distress) on follow-up IC

2. Methods

2.1. Participants and Procedures. This study is based on data on haemato-oncological patients from three university cancer centers in Germany (Leipzig, Ulm, and Regensburg). The data were collected through the research project "Dyadic coping in haematological patients over time" (2012–2015) funded by the *Deutsche José Carreras Leukämie-Stiftung* (grant: DJCLS R 12/36). The Medical Faculty of the University of Leipzig provided the ethics approval (no. 298-12-24092012), which complies with the Helsinki Declaration of 1975 as revised in 2000.

In order to be eligible to participate in the study, patients needed to have a confirmed diagnosis of a haematological neoplasm (ICD-10: C81–C96 and D46, newly diagnosed or

recurrence), be aged between 18 and 75 years, and living in a partnership. Furthermore, sufficient knowledge of the German language and the partner's willingness to participate were necessary to be included in the study. Exclusion criteria were severe cognitive and/or physical impairments and severe mental disorders.

Patients were informed about the study by hospital staff. After giving permission to be further contacted, study documents including study information, consent sheets (informed consent), and written questionnaires were sent to the patients.

568 patients met the inclusion criteria at *t1* (after the treatment) and were informed by staff and contacted by research team members. In total, 330 of 568 patients (58.1%) participated at *t1* and 238 (41.9%) did not for two main reasons: 56.2% of these nonparticipants were no longer available or provided no response, whereas 38.0% had no interest in the study.

Standardized questionnaires that assessed sociodemographic, couple-related, and disease-related characteristics, as well as coping and mental health, were sent to the patients, with stamped and addressed envelopes. Approximately half a year after *t1*, the follow-up measurement (*t2*) was conducted via mail and/or online survey. 217 patients took part in the follow-up (participation rate: 65.8%), of which 214 had complete data for DCI and FKV-15 at both *t1* and *t2*. Figure 1 provides a flowchart of the sample and reasons for nonresponse.

2.2. Assessments

2.2.1. Sociodemographic and Medical Data. Sociodemographic data were assessed via self-report, and medical data were accessed through medical records. The SES results from the patients' education/qualification which combines the highest school-leaving qualification and the highest vocational training [38]. As the purchasing power of nominal income depends upon the number of people in the household, household income was weighed by person per household. It was calculated by allocating the first person in the household a weighting of 1 and assigning each additional person a weighting of 0.5 [39].

2.2.2. Dyadic Coping Inventory. To assess DC, we used the Dyadic Coping Inventory (DCI) [8], a 37-item instrument that measures the degree to which couples support and actively help each other in stressful situations using five subscales: stress communication, supportive DC, negative DC, delegated DC, and common DC [40]. Stress communication is the ability to communicate emotion- and problem-oriented stress (four items, e.g., "I show my partner through my behavior when I am not doing well or when I have problems"). Supportive DC involves acts of support by one partner for the benefit of the other (five items, e.g., "I show empathy and understanding to my partner"). Negative DC includes ambivalent DC (supportive and/or joint coping actions are perceived as stressful or unnecessary by either partner), hostile DC (stress signals from one trigger a direct hostile response in the other), and avoidance of DC

(superficial coping actions without actual emotional involvement of the performer, disregarding the other's needs) (four items, e.g., "When my partner is stressed, I tend to withdraw"). In delegated DC, coping with the stressful situation is taken over by the supporting partner (two items e.g., "I take on things that my partner would normally do in order to help him/her out"). Common DC describes coping efforts in which the couple attempts to achieve common goals through mutual commitment (five items, e.g., "We engage in a serious discussion about the problem and think through what has to be done"). In contrast to supportive or delegated DC, both partners are mutually and directly involved [8, 9, 41]. Two additional single items assess satisfaction with and efficacy of DC. Items are rated on a five-point Likert scale that represents the frequency of a certain coping style used from 1 (very rarely) to 5 (very often). With the exception of the two single items and common DC, all subscales are assessed in two item parallel versions that measure respondents' own behavior and their perception of their partner's behavior [42]. The present study focuses on patients' own coping behavior. Partners' DC was not included because the FKV-15, whose interaction with the DCI will be examined, captures only the patients' perspective. The focus is therefore exclusively on the patients' own DC and IC behavior. For the current study, the internal consistencies (Cronbach's α) of the DCI subscales were acceptable to good, with $\alpha = 0.78$ to $\alpha = 0.84$ (*t1*) and $\alpha = 0.73$ to $\alpha = 0.87$ (*t2*).

2.2.3. Freiburg Questionnaire on Coping with Illness (Short Form). To assess IC, we used a short version of the German-language Freiburg Questionnaire on Coping with Illness (Freiburger Fragebogen zur Krankheitsverarbeitung), known as the FKV-15. The original version of the questionnaire (FKV-102) was developed by Muthny [15]; Hardt et al. introduced the shorter version with 15 items [43]. Widely employed in German speaking countries, the questionnaire is used to assess a broad range of coping strategies of individuals suffering from chronic disease (e.g., cardiac disease, cancer, and multiple sclerosis) [16]. The FKV-15 includes five subscales: depressive IC (to withdraw and react depressively, e.g., "Feeling sorry for oneself"), active IC (to approach one's disease in an active, goal-oriented manner, e.g., "Determined to fight the disease") distraction (to purposefully distract oneself from the disease, e.g., "Trying to gain distance"), trivialization (to downplay problems caused by the disease, e.g., "Downplaying the importance and scope."), and compliance (to follow the doctor's recommendations, e.g.: "Exactly following the medical advice") [43]. Items are answered on a five-point Likert scale showing to what extent each one applies ranging from 1 (not at all) to 5 (very much) [44]. In contrast to the DCI, the FKV-15 measures only the patients' coping behavior without the involvement of the partner. Unlike the DCI, which measures coping behavior in relation to any stressor, the FKV is aimed exclusively at individuals suffering from a medical condition. For the current study, the internal consistencies of the FKV-15 subscales ranged between 0.70 and 0.82 at both *t1* and *t2*.

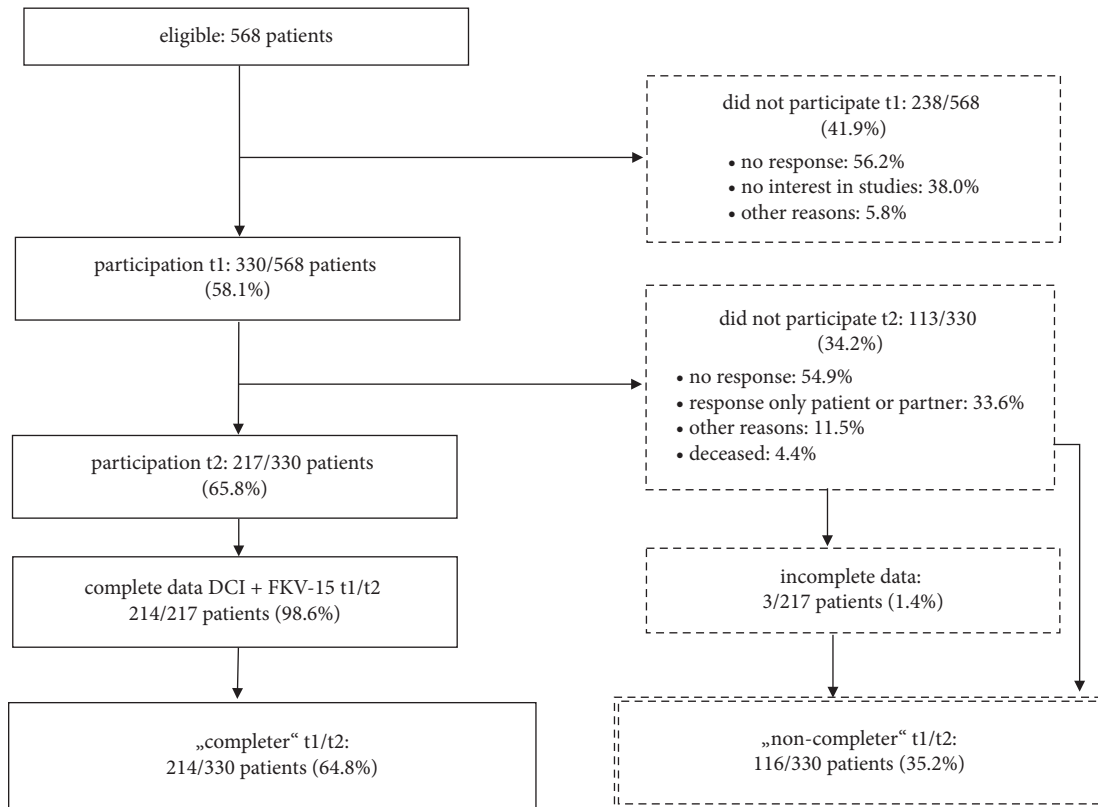


FIGURE 1: Flowchart of the sample. $t1/t2$, time 1 (baseline)/time 2 (follow-up); DCI, Dyadic Coping Inventory; FKV-15, Freiburg Questionnaire on Coping with Illness (short form).

2.2.4. Partnership Questionnaire (Short Form).

Relationship satisfaction was assessed with the PFB-K, a short version of the PFB [45]. The PFB-K is composed of three subscales (quarrelling, tenderness, and togetherness/communication) with three items each on a four-point Likert scale. The response options range from 0 (never/very rarely) to 3 (very often). Another six-point item measures general relationship satisfaction from 0 (very unhappy) to 5 (very happy). The total value of the PFB-K is calculated by summing the subscale scores. In the present sample, the internal consistencies of the total value were 0.71 ($t1$) and 0.74 ($t2$).

2.2.5. Patient Health Questionnaire.

Patients' depression and anxiety were assessed using the PHQ-4, a very brief self-report screening instrument that consists of a 2-item depression scale (PHQ-2) and a 2-item anxiety scale (GAD-2) [46]. Its questions aim to assess how often these emotions have occurred over the previous two weeks from 0 (not at all) to 3 (nearly every day). In order to determine a total score for psychological distress, the four item scores are added together, reaching a total score between 0 (not at all distressed) and 12 (very distressed). A cut-off score of ≥ 6 distinguishes between those who are considered to be mentally stressed and those who are not [47]. The internal consistencies within our sample were good with $\alpha = 0.88$ ($t1$) and 0.89 ($t2$).

2.3. Statistical Analysis. Differences in the frequency distribution of sociodemographic and clinical parameters were calculated by using chi-square tests; mean differences were determined using the t -test for independent samples (completer vs. noncompleter). Paired-sample t -tests were utilized to assess differences in means of DC and IC subscales over time. $\Delta t2/t1$ was calculated by comparing the mean values of the IC and DC subscales at $t1$ and $t2$. Effect sizes were determined according to the calculation for repeated measures within one group (prepost). A correction was made to correct the standard deviation used in the calculation of the effect size. The correction factor includes the correlation between premeasurement and post-measurement. According to Morris, the standard deviation used was the value of the pretest since this value was not influenced by the intervention [48, 49]. Based on the number of tests, the significance level was Bonferroni-adjusted [50].

Correlation analyses between patients' DC and IC at $t1$ and DC and IC at $t2$ were calculated according to Pearson. In order to classify correlation-based effect sizes, we followed Cohen's recommendations ($r \geq 0.1$ small effect, $r \geq 0.3$ medium effect, and $r \geq 0.5$ large effect) [51].

Multiple linear regression analyses were conducted to examine the predictive impact of sociodemographic, partnership-related, and medical variables, as well as DC subscales at $t1$ on IC at $t2$. Categorical variables were dummy-coded as follows: (a) gender (1 = female, 0 = male), (b) SES (1 = high, 0 = others), and (c) stem cell

transplantation (1 = yes, 0 = others). Unstandardized (B) and standardized (β) correlation coefficients were reported.

Statistical analyses were conducted with IBM SPSS Statistics 28.

3. Results

3.1. Sample Characteristics and Drop-Out Analyses. As shown in Table 1, 61.7% of the 214 study participants were male. The average age of respondents was 57 years. 37.3% were employed, and 56.0% were retired. Relationship duration was >30 years on average. 47.2% had a medium SES. Household income weighted by household members was between 1,000 and 2,000€ for 64.3% of the patients. Chronic leukaemia was the most common diagnosis (23.8%). 57% of the patients underwent HSCT. Time since diagnosis was \leq two years for 47.7% of patients. There were no significant differences between completers and noncompleters.

3.2. Changes in DC and IC in Haematological Cancer Patients over Time. Figure 2 shows changes in DC and IC over time with bars representing mean values (0–5) of the DCI and FKV-15-subcales. Results illustrate nonsignificant changes in DC between $t1$ and $t2$. The corresponding effect sizes were small with $d \leq 0.15$. In terms of IC, active IC significantly decreased over time ($\Delta t2/t1 = -0.16$). The corresponding effect sizes were also small with $d \leq 0.2$.

3.3. Correlations between DC and IC. The DC subscales at $t1$ displayed numerous moderate to weak significant correlations with the IC subscales at $t1$ (see Table 2). The DC subscales at $t1$ were strongly positively associated with the corresponding DC subscales at $t2$ (see Table 3), with r values ranging from 0.53 to 0.68. All other $t1$ DC subscales were weakly to moderately correlated with those at $t2$, with the exception of a strong correlation between supportive DC ($t1$) and common DC ($t2$) ($r = 0.60$). The IC subscales at the baseline were moderately to strongly positively associated with the corresponding subscales at follow-up, with r values ranging from 0.45 to 0.67. We found weak to moderate correlations between the other IC ($t1$) and IC ($t2$) subscales.

There were several significant correlations between $t1$ DC and $t2$ IC, but none yielded $|r| \geq 0.34$, as in the case of common DC ($t1$) and active IC ($t2$). Regarding the associations of $t1$ IC and $t2$ DC, the strongest correlation was between active IC ($t1$) and common DC ($t2$) ($r = 0.34$).

3.4. Regression Analysis

3.4.1. Sociodemographic Variables. Patients' age at $t1$ turned out to be a significant positive predictor for trivialization IC ($\beta = 0.37$) and compliance IC ($\beta = 0.29$) at $t2$; the older the patients, the more they tended to use the respective coping strategies (see Table 4). Furthermore, high SES emerged as a significant negative predictor for trivialization IC ($\beta = -0.16$). No significant predictive influence of gender on patients' IC behavior was found.

3.4.2. Partnership-Related Variables. Patients' relationship duration was found to be a significant negative predictor for trivialization IC ($\beta = -0.21$). Moreover, high relationship satisfaction turned out to be associated with significantly less depressive IC ($\beta = -0.17$).

3.4.3. Medical Variables. Patients who had undergone stem cell transplantation were found to use significantly less trivialization IC than those who had not received stem cell transplantation ($\beta = -0.23$). Furthermore, patients' psychological distress turned out to be a significant positive predictor of depressive IC ($\beta = 0.4$), distraction IC ($\beta = 0.19$), and trivialization IC ($\beta = 0.17$).

3.4.4. Dyadic Coping. Regarding the predictive impact of DC on IC, supportive DC ($t1$) was a significant positive predictor of compliance IC ($t2$) ($\beta = 0.20$). Moreover, we found a significant positive prediction between common DC ($t1$) and active IC ($t2$) ($\beta = 0.25$).

Overall, the explained variance of the models (R^2) is good with the highest R^2 for depressive IC at $t2$ (0.32).

4. Discussion

The purpose of this investigation was to examine the relationship between IC and DC as well as possible predictors of IC in patients dealing with haematological cancer. Longitudinal data from 214 patients were analyzed after their treatment ($t1$) and about six months later ($t2$), investigating (a) changes in coping mechanisms over time; (b) correlations between IC and DC at both $t1$ and $t2$; and (c) examining whether DC as well as sociodemographic, partnership-related, and medical variables at the baseline may predict follow-up IC.

Regarding our first research question (a), we found no significant changes in DC between the baseline and follow-up, which is consistent with Bodenmann's analysis describing the DCI construct and its subscales as being stable over time [8]. Vaske et al. also reported no significant changes of patients' DC in a sample of chronic obstructive pulmonary disease (COPD) [52]. Concerning IC, our analyses revealed that patients engaged in significantly less active coping at $t2$ than at $t1$. This is in line with the results of other follow-up studies on coping behavior among cancer patients [16, 53]. In the present study, $t1$ coincides with the end of treatment, just after the patients' lives had been dominated by hospitalization and medical interventions. The patients' constant interaction with medical specialists providing expert knowledge may have encouraged them to cope in an active manner and with fighting spirit. Six months later, the patients' need to actively confront their diagnosis may have given way to their desire to "get back to normal" [54, 55]. Considering that the majority (70.1%) of respondents reported no changes in their disease, in terms of remission, relapse or another form, compared with $t1$, active coping efforts may have been replaced by a growing desire for normalcy in the face of a certain level of health stability.

TABLE 1: Sample characteristics and drop-out analyses.

Category	Completer $t1/t2^{\dagger}$ ($N=214$)	Noncompleter ($N=116$)	t/χ^2	P
Age (mean, SD [‡] , range)	56.8 (12.0, 22–76)	57.4 (12.7, 23–75)	0.42	0.678
Sex				
Male	61.7%	66.4%	0.72	0.398
Female	38.3%	33.6%		
Relationship duration				
≤15 years	19.8%	24.3%	2.48	0.290
16–45 years	63.7%	54.8%		
>45 years	16.5%	20.9%		
Number of household members				
≤2	78.8%	73.9%	2.67	0.751
>2	21.2%	26.1%		
Socioeconomic status				
Low	16.4%	24.1%	3.16	0.206
Middle	47.2%	40.5%		
High	36.4%	35.3%		
Employment status				
Employed	37.3%	39.3%	5.52	0.063
Retired	56.0%	54.5%		
Other	6.7%	6.3%		
Household income weighted by members per household (€)				
<1000	13.9%	15.7%	38.89	0.038
1000–2000	64.3%	61.2%		
>2000	21.8%	23.1%		
Diagnosis				
Chronic leukaemia	23.8%	19.0%	4.09	0.394
Non-Hodgkin lymphoma	22.0%	19.0%		
Acute leukaemia	22.4%	31.9%		
Multiple myeloma	18.2%	19.0%		
Other	13.6%	11.2%		
Stem cell transplantation				
Yes	57.0%	44.7%	5.66	0.059
No	29.4%	33.3%		
Not specified	13.6%	21.9%		
Time since diagnosis				
≤2 years	47.7%	54.3%	1.33	0.249

T-tests were used to calculate differences in means for continuous variables, and the chi-test (χ^2) was used to calculate differences in means for categorical variables. After Bonferroni-adjustment, p values <0.006 are significant. [†] $t1/t2$, time 1 (baseline)/time 2 (follow-up); [‡]SD, standard deviation.

Regarding correlations of coping constructs over time, the strongest (but still only moderate) associations were found between active IC ($t1$) and common DC ($t2$) ($r=0.34$) and between common DC ($t1$) and active IC ($t2$) ($r=0.34$). A high level of common DC suggests a high level of patient-partner interaction and a perception of the cancer diagnosis as a “we-disease” [56]. Such cooperation may enable patients to draw strength to actively deal with their disease even months after their treatment. At the same time, actively coping patients may increasingly involve their partners in coping efforts, leading to greater cohesion within the relationship and the more frequent use of common DC. These considerations are consistent with those of Bodenmann, who found that more active management of a health problem can facilitate open communication between the patient and the partner and contribute to the development of DC efforts [57]. In general, our analyses revealed a link between certain IC strategies considered positive or functional (active IC, compliance IC) with positive DC strategies (stress communication, supportive DC, common DC). This is in line with the observations by Paschali et al. who found

that higher engagement in active coping was associated with supportive and common DC in a sample of 92 women recently diagnosed with cancer [27].

With regard to our third research question (c), regression analyses revealed that only two DC styles had a significant predictive impact on $t2$ IC. First, supportive DC at $t1$ predicted patients’ compliance ($\beta=0.20$). A possible explanation for this finding is that patients who provide a high level of supportive DC also perceive a high level of responsibility towards their partner for fighting the disease, which leads them to follow therapeutic instructions. Second, $t1$ common DC significantly predicted active IC ($\beta=0.25$). As assumed before, a high level of common DC may serve as a source of strength for patients, enabling them to deal more actively with the situation rather than resigning themselves to their fate. These observations suggest that compliance and active IC involve the partner more than comparative intrapsychic processes, such as depressive IC or trivializing, in which patients primarily engage with individually.

Regarding sociodemographic variables, older patients were found to trivialize more than younger ones ($\beta=0.37$).

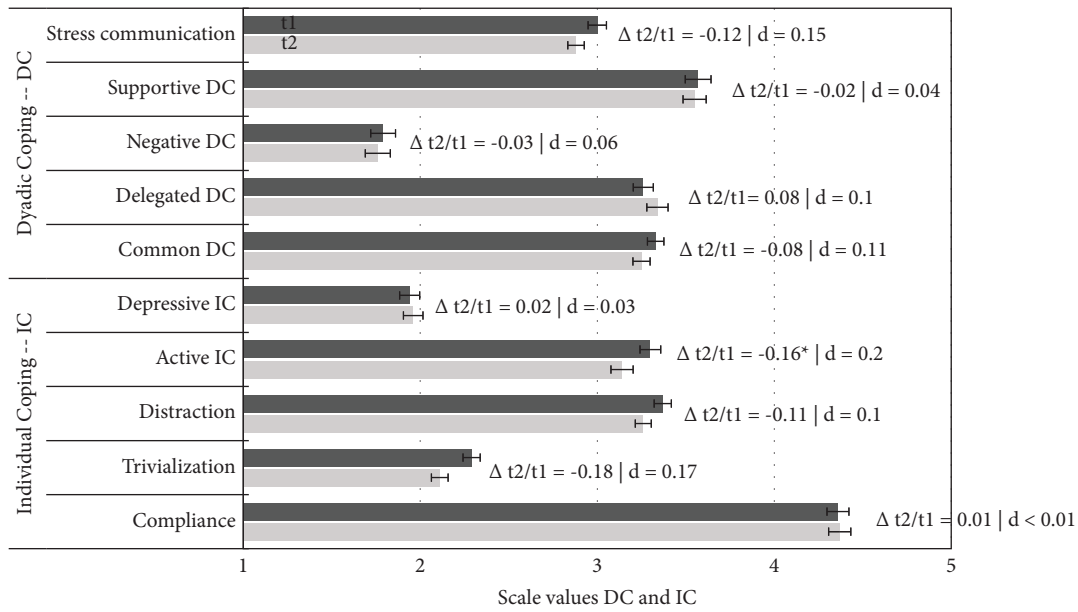


FIGURE 2: Changes of dyadic coping and individual coping over time. * $p < 0.005$ (Bonferroni-adjusted based on multiple testing). Error bars indicate the error as a 95% confidence interval. DC, dyadic coping; IC, individual coping; t1/t2, time 1 (baseline)/time 2 (follow-up); d, Cohen's d/effect size.

TABLE 2: Pearson correlations of DC and IC subscales at t1 (N=214).

Subscales DC/IC t1	IC (t1)				
	Depressive IC	Active IC [†]	Distraction	Trivialization	Compliance
Stress communication	0.147**	0.241**	0.117	-0.045	0.027
Supportive DC [†]	-0.118	0.301**	0.118	-0.173*	0.183**
Negative DC	0.217**	-0.164*	-0.033	0.204**	-0.127
Delegated DC	-0.208**	0.052	-0.018	-0.139*	0.007
Common DC	-0.241**	0.400**	0.181**	-0.127	0.203**

* $p < 0.05$; ** $p < 0.01$. [†]DC, dyadic coping; [‡]IC, individual coping.

TABLE 3: Pearson correlations of DC and IC subscales at t1 and t2 (N=214).

Subscales DC/IC	DC (t2)					IC (t2)				
	1	2	3	4	5	6	7	8	9	10
(1) Stress communication	0.622**	0.367**	-0.276**	0.003	0.322**	0.184**	0.180**	0.201**	0.001	0.152*
(2) Supportive DC [†]	0.337**	0.684**	-0.385**	0.388**	0.601**	-0.099	0.262**	0.138*	-0.112	0.208**
(3) Negative DC	-0.176**	-0.317**	0.656**	-0.150*	-0.281**	0.172*	-0.084	-0.023	0.199**	-0.155*
(4) Delegated DC	-0.130	0.254**	-0.070	0.528**	0.175*	-0.194**	-0.018	0.009	-0.089	-0.028
(5) Common DC	0.343**	0.544**	-0.395**	0.270**	0.670**	-0.210**	0.338**	0.136*	-0.104	0.162*
(6) Depressive IC [‡]	0.073	-0.008	0.207**	-0.097	-0.133	0.666**	-0.126	0.240**	0.262**	-0.148*
(7) Active IC	0.241**	0.236**	-0.194**	0.007	0.335**	-0.107	0.563**	0.231**	0.035	0.262**
(8) Distraction	0.102	0.050	-0.074	-0.059	0.186**	0.116	0.265**	0.450**	0.155*	0.133
(9) Trivialization	-0.037	-0.174*	0.180**	-0.136*	-0.116	0.293**	-0.059	0.134	0.489**	-0.049
(10) Compliance	-0.009	0.145*	-0.133	0.047	0.192**	-0.335**	0.179**	0.046	-0.100	0.624**

* $p < 0.05$; ** $p < 0.01$. [†]DC, dyadic coping; [‡]IC, individual coping.

The fact that the major part of their lives and accomplishments are already behind them could lead to a certain indifference or a tendency to downplay the disease, as severe diagnoses such as cancer are more likely among older people [30]. Furthermore, the patients in our sample were more compliant with increasing age. This could be related to the “obedience to authority” among older people who may feel

morally obligated to follow the instructions of their physician. Patients with high SES were found to trivialize less than those with low or medium SES ($\beta = -0.16$). This is consistent with a study from Ouwehand et al. who found that people with high SES use more proactive coping mechanisms than those with low SES, hypothesizing that education enables people to learn to cope proactively by accumulating

TABLE 4: Regression analyses for baseline ($t1$) variables predicting IC strategies of haematological cancer patients ($N = 214$) at follow-up ($t2$).

Predictors $t1$	Depressive IC [†] $t2$			Active IC $t2$			Distraction $t2$			Trivialization $t2$			Compliance $t2$		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Sex (1, female; 0, male)	-0.015	0.090	-0.010	-0.229	0.125	-0.126	-0.124	0.159	-0.058	-0.013	0.137	-0.006	0.035	0.097	0.025
Age	-0.007	0.005	-0.111	0.012	0.008	0.169	0.012	0.010	0.136	0.030***	0.008	0.366***	0.016**	0.006	0.285**
SES* (1, high; 0, others)	-0.059	0.087	-0.040	0.060	0.121	0.033	0.036	0.154	0.016	-0.317*	0.133	-0.157*	-0.044	0.094	-0.030
Relationship duration	<0.001	0.004	-0.005	-0.002	0.006	-0.031	-0.003	0.008	-0.040	-0.014*	0.007	-0.212*	0.003	0.005	0.068
Relationship satisfaction	-0.026*	0.012	-0.172*	-0.001	0.017	-0.003	0.010	0.022	0.045	-0.033	0.019	-0.163	0.008	0.013	0.056
HSCT [§] (1, yes; 0, others)	-0.088	0.085	-0.061	0.209	0.117	0.117	0.112	0.149	0.053	-0.442***	0.129	-0.226***	0.176	0.092	0.126
Psychological distress	0.111***	0.018	0.403***	-0.019	0.026	-0.056	0.076*	0.032	0.187*	0.065*	0.028	0.174*	<0.001	0.020	<0.001
Stress communication	0.093	0.055	0.120	0.088	0.076	0.091	0.118	0.096	0.103	0.023	0.083	0.022	0.032	0.059	0.043
Supportive DC [¶]	0.037	0.081	0.037	0.143	0.112	0.116	0.045	0.142	0.031	0.005	0.123	0.004	0.193*	0.088	0.202*
Negative DC	0.060	0.068	0.061	0.051	0.094	0.042	0.030	0.021	0.021	0.117	0.104	0.087	-0.100	0.074	-0.106
Delegated DC	-0.067	0.052	-0.083	-0.136	0.072	-0.135	0.022	0.092	0.019	-0.041	0.080	-0.037	-0.053	0.056	-0.067
Common DC	-0.087	0.073	-0.102	0.267**	0.101	0.251**	0.062	0.127	0.049	0.028	0.110	0.024	-0.061	0.078	-0.075
Constant		2.558**			1.181*			1.354			1.413*			2.862**	
R ²		0.317			0.155			0.032			0.152			0.150	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. [†]IC, individual coping; ^{*}SES, socioeconomic status; [§]HSCT, haematopoietic stem cell transplantation; [¶]DC, dyadic coping; B, unstandardized regression coefficient; β , standardized regression coefficient; SE, standard error of B. Sex, SES, and SCT were dummy-coded.

important resources [58]. People with low SES have been shown to be exposed to significantly more stressors in terms of finances, social relationships, employment, and health than people with higher SES [59, 60]. The living conditions of people with low SES may therefore not allow them to deal intensively with their disease in the face of existential needs, leading to trivializing coping.

Higher relationship satisfaction was found to be a negative predictor of depressive IC ($\beta = -0.17$). In another study, high marital quality was found to be negatively associated with depressive symptoms among both women and men [61], suggesting that this may also apply to depressive coping behavior.

Regarding medical variables, the highest predictive impact was found between psychological distress at the baseline and depressive IC at follow-up ($\beta = 0.40$). Given that the PHQ-4 used to assess psychological distress includes an ultrashort depression screener (PHQ-2), a high level of psychological distress indicates the presence of depressive symptoms, which in turn could lead to increased use of depressive coping strategies. Furthermore, our analyses indicated that the higher the patients' psychological distress, the more they trivialize ($\beta = 0.17$) and distract themselves from their disease ($\beta = 0.19$). This is consistent with previous studies that found a strong relationship between increased emotional distress and the use of coping strategies characterized by avoidance and resignation [62, 63]. Regarding our second medical predictor variable, the present study found that patients who underwent HSCT trivialized significantly less than those who did not receive HSCT ($\beta = -0.23$). HSCT is often considered as the only possible cure for patients with haematological neoplasms and requires hospital isolation due to the high risk of life-threatening infections [64]. In addition, serious, sometimes, life-threatening side effects and complications, such as graft-versus-host disease, are associated with the treatment [65]. Close follow-up appointments, active medication management, and strict adherence to a healthy lifestyle are required in the following months, which can be a serious burden for those affected [66]. The constant confrontation with their own mortality and vulnerability is unlikely to allow patients to downplay their situation.

4.1. Strengths and Limitations. Unlike the majority of other studies dealing with coping in cancer patients, the present study is characterized by its longitudinal design permitting us to draw causal conclusion about the relation of DC and IC beyond the snapshot of a cross-sectional design. Furthermore, the sample size of 214 participants is large enough to provide adequate statistical power. As recommended in a previous study [67], our research precisely distinguished between specific coping mechanisms rather than dichotomizing only adaptive/maladaptive or positive/negative coping, thus providing concrete insights into the relationship between specific IC and DC strategies.

Nevertheless, the results of this study cannot be generalized to all types of haematological cancer. Due to the partly very small diagnostic groups in our sample, an

evaluation of the results according to individual subtypes of haematological neoplasms was not possible. As haematological neoplasms differ in terms of severity, prognosis, and treatment, drawing further distinctions would be useful in subsequent studies. Regarding the characteristics of the nonresponders at t_2 , their rate was higher in the subsample with acute leukaemia (32.7%) than in the subsample with chronic leukaemia (10.9%; $p < 0.05$). This shows that severe diagnoses tend to be underrepresented in our sample.

4.2. Clinical Implications. The results of this study have practical implications. As supportive and common DC promote the use of IC strategies considered positive (active IC, compliance IC), patients should be encouraged to engage in such positive coping behaviors. Moreover, psycho-oncologists should pay particular attention to the patients' psychological distress since it emerges as the most common predictor of dysfunctional coping behavior, such as depressive IC or trivialization. Considering that a high level of psychological distress indicates symptoms of anxiety and depression, it may be useful to screen for the latter as part of psycho-oncological treatment. Furthermore, psycho-oncologists should consider patients' age and SES, as older patients and patients with low SES are more likely to trivialize.

4.3. Conclusions. The present study shows that there are numerous intercorrelations between the two coping constructs and that DC partially predicts IC, namely, that supportive DC leads to increased compliance and common DC to increased active IC. Given these facts, the need for early partnership interventions in favor of improved dyadic and, consequently, improved individual coping becomes clear. Treatment-outcome studies that examine interventions to improve coping skills in couples facing cancer could help establish better psycho-oncological treatment programs. However, the results of the present study suggest that IC in haematological cancer patients is predicted by numerous sociodemographic, partnership-related, and medical factors, whose overall influence outweighs that of DC. In particular, advanced age stood out as a predictor for increased trivialization, psychological distress as a predictor for increased depressive IC, and having had a HSCT as a predictor for decreased trivialization. These findings suggest that the way a person copes with his or her disease is the result of a variety of factors that have not been sufficiently researched. Comparable studies with other cancer types are needed to identify potential further influencing factors on coping behavior and to uncover possible similarities and differences.

Data Availability

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Acknowledgments

This study was funded by the “José Carreras Leukämie-Stiftung” from 2012 until 2015 (grant: DJCLS R 12/36). Open Access funding was enabled and organized by Projekt DEAL. The authors specially thank all the patients for participating in this investigation.

References

- [1] Y. Li, Y. Yang, R. Zhang, K. Yao, and Z. Liu, “The Mediating role of mental adjustment in the relationship between perceived stress and depressive symptoms in hematological cancer patients: a cross-sectional study,” *PLoS One*, vol. 10, no. 11, Article ID e0142913, 2015.
- [2] J. S. Mascaro, A. V. Waller, L. Wright, T. Leonard, C. Haack, and E. K. Waller, “Individualized, single session yoga therapy to reduce physical and emotional symptoms in hospitalized hematological cancer patients,” *Integrative Cancer Therapies*, vol. 18, Article ID 1534735419861692, 2019.
- [3] B. L. Fife, G. A. Huster, K. G. Cornetta, V. N. Kennedy, L. P. Akard, and E. R. Broun, “Longitudinal study of adaptation to the stress of bone marrow transplantation,” *Journal of Clinical Oncology*, vol. 18, no. 7, pp. 1539–1549, 2000.
- [4] S. Beattie and S. Lebel, “The experience of caregivers of hematological cancer patients undergoing a hematopoietic stem cell transplant: a comprehensive literature review,” *Psycho-Oncology*, vol. 20, no. 11, pp. 1137–1150, 2011.
- [5] M. M. Bishop, J. L. Beaumont, E. A. Hahn et al., “Late effects of cancer and hematopoietic stem-cell transplantation on spouses or partners compared with survivors and survivor-matched controls,” *Journal of Clinical Oncology*, vol. 25, no. 11, pp. 1403–1411, 2007.
- [6] R. S. Sherman, E. Cooke, and M. Grant, “Dialogue among survivors of hematopoietic cell transplantation support-group themes,” *Journal of Psychosocial Oncology*, vol. 23, no. 1, pp. 1–24, 2005.
- [7] G. Bodenmann, “A systemic-transactional conceptualization of stress and coping in couples,” *Swiss Journal of Psychology/Schweizerische Zeitschrift für Psychologie/Revue Suisse de Psychologie*, vol. 54, no. 1, pp. 34–49, 1995.
- [8] G. Bodenmann, *Dyadisches Coping Inventar: Testmanual [Dyadic Coping Inventory: Test Manual]*, Huber, Bern, Switzerland, 2008.
- [9] C. Acquati and K. Kayser, “Dyadic coping across the lifespan: a comparison between younger and middle-aged couples with breast cancer,” *Frontiers in Psychology*, vol. 10, p. 404, 2019.
- [10] H. Badr, C. L. Carmack, D. A. Kashy, M. Cristofanilli, and T. A. Revenson, “Dyadic coping in metastatic breast cancer,” *Health Psychology*, vol. 29, no. 2, pp. 169–180, 2010.
- [11] H. Badr, K. Herbert, M. D. Bonnen, J. A. Asper, and T. Wagner, “Dyadic coping in patients undergoing radiotherapy for head and neck cancer and their spouses,” *Frontiers in Psychology*, vol. 9, no. 9, p. 1780, 2018.
- [12] M. J. Traa, J. De Vries, G. Bodenmann, and B. L. Den Oudsten, “Dyadic coping and relationship functioning in couples coping with cancer: a systematic review,” *British Journal of Health Psychology*, vol. 20, no. 1, pp. 85–114, 2015.
- [13] G. Bodenmann, “Stress und Coping bei Paaren [Stress and coping in couples],” *Göttingen: Hogrefe*, 2000.
- [14] R. S. Lazarus and S. Folkman, *Stress, Appraisal and Coping*, Springer Publishing Company, New York, NY, USA, 1984.
- [15] F. A. Muthny, *Freiburger Fragebogen zur Krankheitsverarbeitung: Manual [Freiburg Questionnaire on Coping with Illness: Manual]*, Beltz Test, Weinheim, Germany, 1989.
- [16] S. Sehlen, R. Song, H. Fahmüller et al., “Coping of cancer patients during and after radiotherapy- a follow-up of 2 years,” *Oncology Research and Treatment*, vol. 26, no. 6, pp. 557–563, 2003.
- [17] S. Dunne, O. Mooney, L. Coffey et al., “Psychological variables associated with quality of life following primary treatment for head and neck cancer: a systematic review of the literature from 2004 to 2015,” *Psycho-Oncology*, vol. 26, no. 2, pp. 149–160, 2017.
- [18] N. Morris, N. Moghaddam, A. Tickle, and S. Biswas, “The relationship between coping style and psychological distress in people with head and neck cancer: a systematic review,” *Psycho-Oncology*, vol. 27, no. 3, pp. 734–747, 2018.
- [19] H. J. G. Abrahams, M. F. M. Gielissen, C. A. H. H. V. M. Verhagen, and H. Knoop, “The relationship of fatigue in breast cancer survivors with quality of life and factors to address in psychological interventions: a systematic review,” *Clinical Psychology Review*, vol. 63, pp. 1–11, 2018.
- [20] A. Casellas-Grau, C. Ochoa, and C. Ruini, “Psychological and clinical correlates of posttraumatic growth in cancer: a systematic and critical review,” *Psycho-Oncology*, vol. 26, no. 12, pp. 2007–2018, 2017.
- [21] P.-C. Tu, D.-C. Yeh, and H.-C. Hsieh, “Positive psychological changes after breast cancer diagnosis and treatment: the role of trait resilience and coping styles,” *Journal of Psychosocial Oncology*, vol. 38, no. 2, pp. 156–170, 2020.
- [22] K. B. Roland, J. L. Rodriguez, J. R. Patterson, and K. F. Trivers, “A literature review of the social and psychological needs of ovarian cancer survivors,” *Psycho-Oncology*, vol. 22, no. 11, pp. 2408–2418, 2013.
- [23] C. Siwik, A. Hicks, K. Phillips et al., “Impact of coping strategies on perceived stress, depression, and cortisol profiles among gynecologic cancer patients,” *Journal of Health Psychology*, vol. 25, no. 7, pp. 993–1003, 2017.
- [24] S. C. Roesch, L. Adams, A. Hines et al., “Coping with prostate cancer: a meta-analytic review,” *Journal of Behavioral Medicine*, vol. 28, no. 3, pp. 281–293, 2005.
- [25] S. Siegel, N. Unger, C. Streetz-van der Werf et al., “Adults’ adherence to growth hormone replacement in relation to medication-related beliefs, coping and quality of life- an exploratory analysis,” *Frontiers in Endocrinology*, vol. 12, Article ID 680964, 2021.
- [26] N. Rottmann, D. G. Hansen, P. V. Larsen et al., “Dyadic coping within couples dealing with breast cancer A longitudinal, population-based study,” *Health Psychology*, vol. 34, no. 5, pp. 486–495, 2015.
- [27] A. Paschali, A. Palli, C. Thomadakis, and E. C. Karademas, “The interplay between individual and dyadic/common coping in female patients with cancer,” *European Journal of Psychology Open*, vol. 80, no. 4, pp. 143–151, 2021.
- [28] E. C. Karademas, “A new perspective on dyadic regulation in chronic illness: the dyadic regulation connectivity model,” *Health Psychology Review*, vol. 16, no. 1, pp. 1–21, 2021.
- [29] C. A. Berg and R. Upchurch, “A developmental-contextual model of couples coping with chronic illness across the adult life span,” *Psychological Bulletin*, vol. 133, no. 6, pp. 920–954, 2007.
- [30] L. Baider, E. Andritsch, B. Uziely et al., “Effects of age on coping and psychological distress in women diagnosed with

- breast cancer: review of literature and analysis of two different geographical settings," *Critical Reviews in Oncology*, vol. 46, no. 1, pp. 5–16, 2003.
- [31] B. E. Compas, M. F. Stoll, A. H. Thomsen et al., "Adjustment to breast cancer: age-related differences in coping and emotional distress," *Breast Cancer Research and Treatment*, vol. 54, no. 3, pp. 195–203, 1999.
- [32] B. Eslami, G. Macassa, Ö. Sundin, H. R. Khankeh, and J. J. F. Soares, "Style of coping and its determinants in adults with congenital heart disease in a developing country," *Congenital Heart Disease*, vol. 9, no. 4, pp. 349–360, 2014.
- [33] L. E. Carlson, E. L. Zelinski, K. I. Toivonen et al., "Prevalence of psychosocial distress in cancer patients across 55 North American cancer centers," *Journal of Psychosocial Oncology*, vol. 37, no. 1, pp. 5–21, 2019.
- [34] S. Varner, G. Lloyd, K. W. Ranby, S. Callan, C. Robertson, and I. M. Lipkus, "Illness uncertainty, partner support, and quality of life: a dyadic longitudinal investigation of couples facing prostate cancer," *Psycho-Oncology*, vol. 28, no. 11, pp. 2188–2194, 2019.
- [35] L. M. Papp and N. L. Witt, "Romantic partners' individual coping strategies and dyadic coping: implications for relationship functioning," *Journal of Family Psychology*, vol. 24, no. 5, pp. 551–559, 2010.
- [36] P. Y. Herzberg, "Coping in relationships: the interplay between individual and dyadic coping and their effects on relationship satisfaction," *Anxiety, Stress and Coping*, vol. 26, no. 2, pp. 136–153, 2013.
- [37] T. Brandão, M. Schulz, and P. M. Matos, "Psychological adjustment after breast cancer: a systematic review of longitudinal studies," *Psycho-Oncology*, vol. 26, no. 7, pp. 917–926, 2017.
- [38] Y. Lechert, J. Schroedter, and P. Lüttinger, "Die Umsetzung der Bildungsklassifikation CASMIN für die Volkszählung 1970, die Mikrozensus- Zusatzhebung 1971 und die Mikrozensus 1976–2004 [The Implementation of the CASMIN Educational Classification for the 1970 Census, the 1971 Supplementary Microcensus, and the 1976–2004 Microcensuses]," ZUMA-Methodenbericht 2006/12 [ZUMA Methods Report 2006/12], ZUMA, Mannheim, Germany, 2006.
- [39] Eurostat, "Glossary: equivalised disposable income," Eurostat.eu, 2021, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Equivalised_disposable_income/de.
- [40] C. Levesque, M.-F. Lafontaine, A. Caron, and J. Fitzpatrick, "Validation of the English version of the dyadic coping inventory," *Measurement and Evaluation in Counseling and Development*, vol. 47, no. 3, pp. 215–225, 2014.
- [41] D. Bodschwinna, J. Ernst, A. Mehnert-Theuerkauf, H. Gündel, G. Weißflog, and K. Hönig, "Dyadic coping and social support: various types of support in hematooncological patients and their spouses—associations with psychological distress," *Psycho-Oncology*, vol. 30, no. 7, pp. 1041–1050, 2021.
- [42] S. Gmelch, G. Bodenmann, N. Meuwly, T. Ledermann, O. Steffen-Sozinova, and K. Striegl, "Dyadisches Coping Inventar (DCI): ein Fragebogen zur Erfassung des partnerschaftlichen Umgangs mit Stress," *Journal of Family Research*, vol. 20, no. 2, pp. 185–202, 2008.
- [43] J. Hardt, F. Petrak, U. T. Egle, B. Kappis, G. Schulz, and E. Küstner, "Was misst der FKV? [What does the FKV measure?]," *Zeitschrift für Klinische Psychologie und Psychotherapie*, vol. 32, no. 1, pp. 41–50, 2003.
- [44] S. Siegel, N. Unger, C. Streetz-van der Werf et al., "Adults' adherence to growth hormone replacement in relation to medication-related beliefs, coping and quality of life- an exploratory analysis," *Frontiers in Endocrinology*, vol. 12, 2021.
- [45] S. Kliem, A. K. Job, C. Kröger et al., "Entwicklung und Normierung einer Kurzform des Partnerschaftsfragebogens (PFB-K) an einer repräsentativen deutschen Stichprobe [Development and standardization of a short form of the Partnership Questionnaire (PFB-K) on a representative German sample]," *Zeitschrift für Klinische Psychologie und Psychotherapie*, vol. 41, no. 2, pp. 81–89, 2012.
- [46] B. Löwe, I. Wahl, M. Rose et al., "A 4-item measure of depression and anxiety: validation and standardization of the Patient Health Questionnaire-4 (PHQ-4) in the general population," *Journal of Affective Disorders*, vol. 122, no. 1–2, pp. 86–95, 2010.
- [47] A. L. Pankrath, G. Weißflog, A. Mehnert et al., "The relation between dyadic coping and relationship satisfaction in couples dealing with haematological cancer," *European Journal of Cancer Care*, vol. 27, no. 1, Article ID e12595, 2016.
- [48] S. B. Morris, "Estimating effect sizes from pretest-posttest-control group designs," *Organizational Research Methods*, vol. 11, no. 2, pp. 364–386, 2008.
- [49] W. Lenhard and L. Alexandra, "Berechnung von Effektstärken [Calculation of effect sizes]," 2016, <https://www.psychometrica.de/effektstaerke.html>.
- [50] A. Kowalski and P. Enck, "Statistische Methoden bei Mehrfachtestung – die Bonferroni-Korrektur (Statistical Methods: multiple Significance Tests and the Bonferroni Procedure)," *Psychotherapie, Psychosomatik, Medizinische Psychologie*, vol. 60, no. 7, pp. 286–287, 2010.
- [51] J. Cohen, *Statistical Power Analysis for the Behavioral Sciences*, Lawrence Erlbaum Associates, New York, NY, USA, 1988.
- [52] I. Vaske, M. F. Thöne, K. Kühl et al., "For better or for worse: a longitudinal study on dyadic coping and quality of life among couples with a partner suffering from COPD," *Journal of Behavioral Medicine*, vol. 38, no. 6, pp. 851–862, 2015.
- [53] K. D. McCaul, A. K. Sandgren, B. King, S. O'Donnell, A. Branstetter, and G. Foreman, "Coping and adjustment to breast cancer," *Psycho-Oncology*, vol. 8, no. 3, pp. 230–236, 1999.
- [54] M. Little and E.-J. Sayers, "The skull beneath the skin: cancer survival and awareness of death," *Psycho-Oncology*, vol. 13, no. 3, pp. 190–198, 2004.
- [55] S. Denford, D. Harcourt, L. Rubin, and A. Pusic, "Understanding normality: a qualitative analysis of breast cancer patients' concepts of normality after mastectomy and reconstructive surgery," *Psycho-Oncology*, vol. 20, no. 5, pp. 553–558, 2011.
- [56] K. Kayser, L. E. Watson, and J. T. Andrade, "Cancer as a "we-disease": examining the process of coping from a relational perspective," *Families, Systems and Health*, vol. 25, no. 4, pp. 404–418, 2007.
- [57] G. Bodenmann, "Dyadic coping and its significance for marital functioning," in *Couples Coping with Stress: Emerging Perspectives on Dyadic Coping*, A. Revenson Tracey, K. Karen, and B. Guy, Eds., pp. 33–49, American Psychological Association, Washington, DC, USA, 2005.
- [58] C. Ouwehand, D. T. D. de Ridder, J. M. Bensing, and J. M. Bensing, "Who can afford to look to the future? The relationship between socio-economic status and proactive coping," *The European Journal of Public Health*, vol. 19, no. 4, pp. 412–417, 2009.

- [59] T. E. Senn, J. L. Walsh, and M. P. Carey, "The mediating roles of perceived stress and health behaviors in the relation between objective, subjective, and neighborhood socioeconomic status and perceived health," *Annals of Behavioral Medicine*, vol. 48, no. 2, pp. 215–224, 2014.
- [60] S. Weyers, N. Dragano, S. Möbus et al., "Poor social relations and adverse health behaviour: stronger associations in low socioeconomic groups?" *International Journal of Public Health*, vol. 55, no. 1, pp. 17–23, 2010.
- [61] M. A. Whisman, "The association between depression and marital dissatisfaction," in *Prospective Effects of Marital Satisfaction on Depressive Symptoms in Established Marriages: A Dyadic Model*, R. H. Beach Steven, J. Katz, S. Kim, and H. Brody Gene, Eds., pp. 3–24, American Psychological Association, Washington, DC, USA, 2003.
- [62] C. Burgess, T. Morris, and K. W. Pettingale, "Psychological response to cancer diagnosis— II. Evidence for coping styles (coping styles and cancer diagnosis)," *Journal of Psychosomatic Research*, vol. 32, no. 3, pp. 263–272, 1988.
- [63] J. R. Rodrigue, S. R. Boggs, R. S. Weiner, and J. M. Behen, "Mood, coping style, and personality functioning among adult bone marrow transplant candidates," *Psychosomatics*, vol. 34, no. 2, pp. 159–165, 1993.
- [64] J. Hefner, M. Kapp, K. Drebinger et al., "High prevalence of distress in patients after allogeneic hematopoietic SCT: fear of progression is associated with a younger age," *Bone Marrow Transplantation*, vol. 49, no. 4, pp. 581–584, 2014.
- [65] T. A. Gooley, J. W. Chien, S. A. Pergam et al., "Reduced mortality after allogeneic hematopoietic-cell transplantation," *New England Journal of Medicine*, vol. 363, no. 22, pp. 2091–2101, 2010.
- [66] H. L. Amonoo, M. E. Barclay, A. El-Jawahri, L. N. Traeger, S. J. Lee, and J. C. Huffman, "Positive psychological constructs and health outcomes in hematopoietic stem cell transplantation patients: a systematic review," *Biology of Blood and Marrow Transplantation*, vol. 25, no. 1, pp. e5–e16, 2019.
- [67] A. Burri, M. Blank Gebre, G. Bodenmann, and G. Bodenmann, "Individual and dyadic coping in chronic pain patients," *Journal of Pain Research*, vol. 10, pp. 535–544, 2017.