

Cross-Country Perspectives on Social Support in Couples Coping with Breast Cancer

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Abstract-Couples from the USA ($n = 161$) and Germany ($n = 64$) participated in social support interactions after the women were diagnosed with breast cancer. The primary aim was to investigate whether a coding system developed in one country could be reliably used in another country. Results indicate that the Social Support Interaction Coding System can be used reliably within both studied countries. The secondary aim was to investigate whether coders are able to reliably rate interactions of couples from other countries. Results demonstrate egocentric bias: coders rated couples from the other country as they perceived couples in their own country. Investigation of similar social support functions across countries show that German couples engage in more neutral support behavior than U.S. couples, but differences are not reflected in marital adjustment differences. In both countries, when the women used a more negative communication style to ask for support, men were less positive and more negative while providing support. Alternatively, the more positively men asked for support, females were generally more positive and less neutral in providing support. Findings indicate that there are both notable differences and similarities in support behaviors and functions, yielding different implications for relationship functioning in different countries.

Keywords- *Psycho-oncology; Couples; Breast Cancer; Communication; Cross-country; Social Support; Relationship Functioning*

I. INTRODUCTION

The diagnosis and treatment of breast cancer involves substantial stress for a woman, and also affects the well-being of her partner. A multitude of psychosocial stressors occur, such as adjustment in family and social roles, changes in appearance or attractiveness, sexual functioning, anxiety about disease progression, and fear of death [1-4]. A cancer diagnosis frequently leads to maladaptive interaction patterns between the patient and her partner (e.g., protective buffering) which negatively impacts the patient [5-8] and the couple's relationship functioning [9, 10]. Partners of cancer patients are also significantly affected by the distress experienced by their female partners [11, 12]. Despite a decline in general emotional distress during the first year following breast cancer diagnosis [13-15], patients and partners report that family functioning generally deteriorates over the same period.

Within this stressful context, high levels of social support, particularly from the woman's family, lead to better long-term psychosocial adjustment [16-19]. Women diagnosed with cancer who are in committed relationships express great need for their partner's support, even more so than for support from others [20-22]. However, partners may have difficulty providing social support due to their own distress in response to the diagnosis [23]. As a result, many female cancer patients feel disappointed in their interactions with their husbands when addressing cancer [24]. This dissatisfaction can occur even within the context of overall high relationship satisfaction. Thus, a cancer diagnosis poses not only a challenge for women and their partners individually, but also for them as a couple.

Given the challenges that breast cancer poses for a couple's relationship, as well as the centrality of the couple's relationship to the patient's adjustment, it is critical to determine the most efficacious way to assist couples facing a breast cancer diagnosis. There is increasing recognition that the quality of marital interactions, rather than global social support, the mere presence of a partner, or even overall marital satisfaction, is essential to positive patient outcomes [25-28]. Patient-partner interaction patterns that have been associated with positive patient adaptation include candid communication about cancer-related issues, the ability to express emotions and to have one's partner listen supportively, and effective problem-solving skills. For instance, in breast cancer patients, a high level of empathy from one's spouse was a stronger predictor of patient psychological adjustment than overall marital satisfaction or the availability of supportive others [29, 30]. In addition, the ability to express emotions and to communicate openly with family members has been associated with fewer emotional and physical complaints, as well as higher levels of self-esteem and perceived control [31, 32]. Conversely, negative or unhelpful interaction patterns, such as partner avoidance and criticism, are associated with poorer patient adjustment, including increased distress, the employment of maladaptive coping strategies, and intrusive thoughts about illness [33-35].

Interactions that convey social support appear to be an important factor in adjustment to breast cancer diagnosis. The central role of social support underscores the critical necessity of assessing social support in a thoughtful manner. Social support can be assessed by self-reported measures as well as by behavioral observation. At present, there is no research comparing the ways in which partners in different countries communicate social support to one another when facing a life-

threatening disease, namely breast cancer. In previous research on the ways in which couples communicate during other types of conversations (problem-solving) in Germany and Australia [36], notable differences were found between countries. More specifically, German couples were more willing to disagree openly with one another without experiencing negative implications for their relationships. Social support focuses on positive, assistive communication, and it is important to determine whether couples employ different types or numbers of strategies to provide social support in different cultures during support conversations. If national differences in social support are found, do these differences result in differential impact for the couples in responding to breast cancer? Or are there cultural norms such that if a couple is supportive in a manner typical of a country, this culturally-defined form of support is what is needed to adapt to the medical crisis of breast cancer?

This study marks the first reported attempt to understand the social support process for couples in different countries (Germany and USA) through behavioral observation. Within this context, two broad issues are addressed involving (a) observational coding of support and (b) substantive findings regarding differences in social support between the two studied countries. In regard to coding social support from couples' conversations, the following specific questions were considered. (1) Can a coding system developed in one culture be applied reliably in another culture? (2) Once coders can apply the coding system reliably in their own country, can these same coders rate the interactions of couples from another country in a meaningful fashion?

The second focus of the current investigation addresses more substantive aspects of social support between the two countries. First, does social support function similarly, that is, does social support correlate to other meaningful measures of relationship functioning in a consistent fashion in different countries? Second, the notion of social support involves two partners acting in different roles during the conversation (a helper who provides support, and a helpee who receives support); from an interactional perspective, are there associations between helper and helpee behaviors during a conversation? A wide body of research on couple interactions predicts that more positive and less negative behavior from the helpee should correlate to more positive and less negative behavior from the helper [c.f., 37, for a review]. However, this area has received much less attention when one partner has cancer and the couple is addressing this difficult topic from a social support perspective.

II. METHOD

A. Participants

Participants included two samples of couples in which the woman was recently diagnosed with early stage breast cancer, from the USA ($N = 161$) and Germany ($N = 64$). In both countries, a clinical trial was conducted employing a couples-based intervention for breast cancer [38, 39]. Independent ethical review boards approved both studies. The characteristics of the American and German samples were very similar (Table 1). Significant differences between the two countries were found for education level and employment rate, both of which were higher in the American sample. The German sample was 100% Caucasian; the American sample was 85% Caucasian, 10% African American, 2% Hispanic, and 2% Asian.

The couples were recruited from regional hospitals in Germany and the U.S. The medical team briefly informed each patient about the study within four weeks of initial diagnosis. The study was explained to interested couples and informed consent was obtained from all participants.

TABLE 1 DEMOGRAPHIC CHARACTERISTICS OF THE AMERICAN AND GERMAN SAMPLES

	USA ($N = 322$)		Germany ($N = 128$)		Differences between USA and Germany
	Patient	Partner	Patient	Partner	
Age ^a	52.4(11.5)	54.5(12.8)	51.8(11.0)	53.1(10.7)	$F(1,311) = .51$, ns
relationship length ^a		23.4 (14.1)		21.8 (14.4)	$F(1,327) = .94$, ns
Level of education (%) ^b					$\chi^2_{\text{patient}}(1, N=204)=129.2^{**}$
low (≤ 9 years)	0 (0)	2 (5)	45 (71)	37 (60)	$\chi^2_{\text{partner}}(1, N=103)=31.5^{**}$
high (≥ 10 years)	141 (100)	39 (91)	18 (29)	25 (40)	
Employment status(%) ^b					$\chi^2_{\text{patient}}(3, N = 206) = 7.2$, ns
employed	105 (71)	32 (89)	36 (56)	37 (59)	$\chi^2_{\text{partner}}(3, N = 99) = 10.6^*$
unemployed	9 (6)	0 (0)	5 (8)	5 (8)	
retired	23 (16)	4 (11)	13 (20)	19 (30)	
housewife	10 (7)	0 (0)	10 (16)	2 (3)	
Disease type (N, %)					$\chi^2(3, N = 225) = 7.6$, ns
breast cancer	161 (100)		61 (94)		
gynecological cancer ^c	0 (0)		3 (6)		
stage of disease (%) ^b					$\chi^2(3, N = 149) = 4.1$, ns
stage I	40 (47)		23 (36)		
stage II	36 (42)		31 (48)		
stage III	9 (11)		8 (13)		
stage IV	0 (0)		2 (3)		

Note. ns = non significant. ^ain years. ^bmissing values. ^c $n = 1$ cervix, $n = 1$ ovarian, $n = 1$ endometrial cancer.

* $p < .05$, ** $p < .01$.

B. Measures

Basic biographical information and relevant medical variables were obtained from all participants. A number of the same self-report measures were completed for both sample groups. All questionnaires were also available in German, and were psychometrically validated with German samples.

The subscale *Affective Communication* (AFC) of the Marital Satisfaction Inventory-Revised [MSI-R; 40, German version: 41] was used to assess six items self-reported items of communication between partners. The items reflect two dimensions: (a) lack of support and affection and (b) limited disclosure of feelings or lack of understanding. In the present study, α was 0.87 in the German sample and 0.85 in the American sample.

The *Quality of Marriage Index* [QMI; 42, German version: 43] is a six-item inventory that assesses marital satisfaction using global, broadly-worded items (α was 0.95 in both samples); higher values indicate higher relationship satisfaction.

Behavioral observation (BO) regarding how individuals communicate social support to their partner was conducted in both countries. Two seven-minute cancer-related conversation tasks were digitally documented, and included sharing thoughts and feelings with partners. Each partner assumed the role of sharing her/his concerns in one conversation while the other attempted to provide support; that is, the woman shared her thoughts and feelings about some aspect of her breast cancer, and her male partner responded. Analogously, in another interaction, the man shared his thoughts and feelings about the woman's breast cancer, and the patient responded. The order of the two conversations was randomized.

The Social Support Interaction Coding System [SSICS; 44] was employed to code the conversations; interactions were divided into speaking turns, and each speaking turn was coded. Partners alternated as the support solicitor (the helpee) and the support provider (the helper). Each helper speaking turn was assigned one of six codes (positive instrumental, positive emotional, positive other, negative, neutral, or off-task), and each helpee speaking turn was assigned one of four codes (positive, negative, neutral, or off-task). To simplify analyses, a summary positive helper code was generated by summing codes for positive instrumental, positive emotional, and positive other [45]. In addition, a global code was assigned to each interaction as a whole to provide macro-level information about the conversation such as overall quality, tone, depth, etc., which may not have been captured by the individual micro-codes (Table 2).

TABLE 2 DESCRIPTION OF CODES FOR HELPER (SUPPORT PROVIDER) AND HELPEE (DISCLOSER) FROM THE SOCIAL SUPPORT INTERACTION CODING SYSTEM (MODIFIED FROM PASCH, ET AL., 2004)

Code	Description
<i>Helpee</i>	
Positive	Offers specific, clear analysis of the problem, expresses feelings related to the problem, asks for help or states needs in a useful way, responds positively to supporter questions or suggestions.
Negative	Makes demands for help; criticizes, blames or accuses helper; expresses negative affect at the spouse, whines or complains.
Neutral	Provides descriptive information about the problem, repeated analyses of the problem that do not further contribute to understanding.
<i>Helper</i>	
Positive emotional	Reassures, consoles or provides genuine encouragement to spouse; conveys that spouse is loved, cared for, or esteemed; acknowledges spouse's beliefs, interpretations and feelings; encourages expression or clarification of feelings.
Positive instrumental	Makes specific suggestions, gives helpful advice or access to information regarding the problem.
Positive other	General analysis of the problem, summarizes or encourages to continue the discussion.
Neutral	See Helpee.
Negative	See Helpee.
<i>Global codes^a</i>	
Quality of communication	Overall quality of the conversation in terms of communication skills used, the depth of disclosure, and the sensitivity of each partner to the other's issues and concerns.
Role maintenance	Indication of how well each partner followed the instructions and remained in the assigned role (i.e., the Helpee stayed focused on their topic and shares concerns with partner; the Helper stayed focused on partner's topic and responds to their concerns).
Depth and articulation	To capture how much each partner articulates/expresses their concerns or listens to the other partner, and how much each partner delves into discussing the chosen topic.
Caring	Indication of how kind, sensitive, and caring a person was during the conversation.

Coders were female clinical psychology graduate students who were previously informed about the topic of discussion and the role assigned to each spouse, but coders were not aware of the study hypotheses. German and American coders were trained simultaneously in a two-day workshop by the developers of the SSICS, Lauri Pasch and Kiernan Sullivan. Training consisted of learning code definitions, provision of multiple examples of responses in each category, and practice coding with feedback and discussion. A German-language translation of the SSICS manual was used to train the German coders.

Following the training in the coding system, coders rated all couples from their own country. In addition, cross-country coding was conducted for a sub-sample of couples from each country. The German coders coded the American interactions directly from videos, since all coders were fluent in English. However, to enhance understanding and minimize erroneous understanding based on the spoken language, a written English transcript was also available for each interaction. Because the American coders did not speak fluent German, German transcripts of the interactions were created for the German couples.

only, and a native English speaker who was also fluent in German subsequently translated these transcripts into English. The American coders watched the German videos in order to assess non-verbal cues, and read the transcripts of the interactions to assess content. Face-to-face meetings between the supervisors from the two countries every 6-12 months were helpful to identify coding difficulties within each country, contributing to consistency of coding between countries, and establishing additional rules for the coding procedure in order to tailor the coding system to the specific tasks relating to the studied couples.

The coding system was originally designed for the person in need of support to be in the helpee role, and the partner to be the helper. Thus, when the male partner was in the helpee role (discussing a topic about the female's breast cancer that was of concern to him), the interaction differed from that anticipated in the design of the original coding system, given that the woman was still the patient. To address this altered circumstance, a revised version of the SSICS was created to help coders navigate interaction coding when the man was the helpee and the woman was the helper. Within this context, the man as helpee had to keep the focus of the conversation on his concerns and allow his partner to support him, while remaining cognizant and sensitive to the affects of his own remarks. A man who was not effective at maintaining the helpee role often shifted the focus away from himself, minimized his own feelings, forced an optimistic perspective, or rejected support if offered by the woman. If the woman was in the helper role as support provider, she had to maintain focus on the male's concerns, offer feedback, and be able to separate her concerns as patient from his issues regarding her disease.

C. Statistical Analyses

A subset of $n = 40$ interactions of American and $n = 40$ interactions of German couples were randomly assigned and coded by both German and American coders. These two sub-groups did not significantly differ from one another in terms of age, relationship length, employment status, of type and stage of disease (Table 3). In order to assess interrater reliability, (Cohen's) Kappa scores were computed (Cohen, 1960), with scores of less than .20 being viewed as poor, .20 to .40 as fair, .40 to .60 as moderate, .60 to .80 as good, and .80 to 1.0 as very good agreement [46]. A two (gender) by two (country) MANOVA was conducted for self-reported and observational data.

TABLE 3 DEMOGRAPHIC CHARACTERISTICS OF THE AMERICAN AND GERMAN SUB-SAMPLES (CODED BY AMERICAN AND GERMAN CODERS)

	Germany ($n = 40$)	USA ($n = 40$)	Differences between USA and Germany
Age ^a	53.5 (10.8)	53.8 (12.7)	$t = -.12$, $df = 66$, ns
relationship length ^a	24.1 (16.5)	24.0 (14.6)	$t = .03$, $df = 67$, ns
Level of education (%) ^b			$\chi^2(1, N=66) = 28.8^{**}$
low (≤ 9 years)	20 (65)	1 (3)	
high (≥ 10 years)	11 (25)	34 (97)	
Employment status(%) ^b			$\chi^2(3, N = 62) = 6.0$, ns
employed	13 (43)	22 (69)	
unemployed	3 (10)	0 (0)	
retired	9 (30)	7 (23)	
housewife	5 (17)	3 (8)	
stage of disease (%) ^b			$\chi^2(6, N = 44) = 5.6$, ns
stage I	5 (31)	10 (36)	
stage II	8 (50)	16 (57)	
stage III	2 (13)	2 (7)	
stage IV	1 (6)	0 (0)	

Note. ns = non significant. ^ain years. ^bmissing values.

* $p < .05$, ** = $p < .01$.

III. RESULTS

A. Coding Social Support

1) Reliability of Coding Social Support within Each Country:

The first issue addressed was whether the SSICS could be translated into German and then used reliably to code the interactions of German couples. Results are based on "native coders", meaning that coders from a given country coded couples from their same country (Table 4). The coding system was similarly reliable in Germany ($\kappa_{\text{female helper}} = .63$, $\kappa_{\text{male helper}} = .62$, $\kappa_{\text{female helpee}} = .73$, $\kappa_{\text{male helpee}} = .68$) and in the U.S. ($\kappa_{\text{female helper}} = .48$, $\kappa_{\text{male helper}} = .49$, $\kappa_{\text{female helpee}} = .85$, $\kappa_{\text{male helpee}} = .80$) with Kappa values reflecting moderate to good agreement.

2) Reliability of Coding Social Support across Countries:

Native and non-native coders from the two countries were compared to investigate whether each coder group analyzed the same tape in the same way. Based on Kappa scores (Table 4), German and U.S. coding groups could not reliably code one another's interactions when coding the person in the helper role ($\kappa_{\text{USfemale helper}} = .18$, $\kappa_{\text{USmale helper}} = .28$, $\kappa_{\text{GERfemale helper}} = .24$, $\kappa_{\text{GERmale helper}} = .24$). However, when focusing on the helpee, results indicate similar reliabilities to within-country coding results ($\kappa_{\text{USfemale helpee}} = .68$, $\kappa_{\text{USmale helpee}} = .67$, $\kappa_{\text{GERfemale helpee}} = .66$, $\kappa_{\text{GERmale helpee}} = .63$). In terms of global codes (quality of

communication, role maintenance, depth and articulation, caring), comparable good to very good reliabilities (between .75 and .97) were reported both within country coding as well as for cross-country coding (Table 4).

TABLE 4 WITHIN COUNTRY AND CROSS-COUNTRY RELIABILITY (COHEN'S KAPPA) FOR THE SSICS CATEGORIES AND GLOBAL CODES

SSICS categories	U.S. couples		German couples	
	within country ^b (n = 147)	cross-country ^c (n = 40)	within country ^b (n = 128)	cross-country ^c (n = 40)
<i>Helper (support provider)</i>				
Female ^a	.48	.18	.63	.24
Male ^a	.49	.28	.62	.24
Quality of communication	.90	.83	.86	.81
Role maintenance	.88	.75	.84	.78
Depth and articulation	.90	.81	.88	.84
Caring	.85	.83	.84	.75
<i>Helpee (support solicitor)</i>				
Female ^a	.85	.68	.73	.66
Male ^a	.80	.67	.68	.63
Quality of communication	.90	.91	.88	.75
Role maintenance	.87	.86	.86	.84
Depth and articulation	.88	.97	.86	.78
Caring	.87	.91	.86	.81

Note. ^aCohen's kappa for positive, negative and neutral, ^bcoded by coders from the same country as the couple (U.S. couples were coded by U.S. coders, German couples by German coders), ^ccoded by one coder from the same country and one coder from the other country (U.S. coder).

3) Cross-country Differences Based on "Native" Coders in Behavioral Observation:

In the U.S., the helpee requested support in more positive and negative ways compared to German helpees, who were generally more neutral in their support-seeking role (Table 5). American helpers provided more positive and negative types of support, whereas Germany subjects were more neutral in the support they provided. Very few negative behaviors occurred in either country.

TABLE 5 MEANS AND STANDARD DEVIATIONS FOR SSICS CODES AND QUESTIONNAIRES FOR BOTH COUNTRIES BASED ON "NATIVE" CODERS

		USA (<i>N</i> = 147 ¹)		Germany (<i>N</i> = 128)		Significant differences between U.S. and German couples
	Patient	Partner	Patient	Partner		
<i>Behavioral observation</i>						
<i>Helpee</i>	<i>n</i> = 90	<i>n</i> = 57	<i>n</i> = 64	<i>n</i> = 64		
positive	.70 (.22)	.67 (.22)	.56 (.24)	.52 (.20)	<i>F</i> (1,255) = 27.9***	
negative	.02 (.07)	.06 (.12)	.01 (.04)	.01 (.06)	<i>F</i> (1,255) = 11.7**	
neutral	.23 (.17)	.22 (.19)	.36 (.22)	.42 (.19)	<i>F</i> (1,255) = 47.6***	
off-task	.04 (.09)	.04 (.10)	.05 (.11)	.05 (.09)	<i>F</i> (1,255) = .77, n.s.	
<i>Helper^b</i>	<i>n</i> = 81	<i>n</i> = 63	<i>n</i> = 64	<i>n</i> = 64		
positive instrumental	.03 (.07)	.02 (.06)	.02 (.06)	.01 (.03)	<i>F</i> (1,268) = 1.52, n.s.	
positive emotional	.04 (.10)	.05 (.11)	.05 (.09)	.03 (.06)	<i>F</i> (1,268) = .29, n.s.	
positive other	.48 (.25)	.45 (.27)	.44 (.26)	.34 (.20)	<i>F</i> (1,268) = 6.32*	
positive ^a	.54 (.28)	.52 (.31)	.52 (.28)	.37 (.22)	<i>F</i> (1,268) = 7.20**	
negative	.11 (.19)	.12 (.21)	.02 (.08)	.04 (.13)	<i>F</i> (1,268) = 18.4***	
neutral	.31 (.20)	.30 (.20)	.40 (.24)	.53 (.22)	<i>F</i> (1,268) = 36.5***	
off-task	.02 (.05)	.06 (.11)	.05 (.12)	.06 (.10)	<i>F</i> (1,268) = 2.37, n.s.	
<i>Self-report^b</i>	<i>n</i> = 159	<i>n</i> = 44	<i>n</i> = 63	<i>n</i> = 63		
<i>questionnaires</i>						
QMI	38.3 (8.1)	39.4 (6.0)	37.6 (8.4)	38.7 (6.0)	<i>F</i> (1,325) = .60, n.s.	
AFC	4.0 (3.1)	2.7 (2.6)	3.5 (3.7)	2.9 (3.0)	<i>F</i> (1,251) = .12, n.s.	

Note. ¹ not all videos were available for patient and partner. QMI: Quality of marriage index, range 6-45; AFC: Affective communication, range 0-13, raw score 4.0 ≈ t-score 49, 2.7 ≈ 47, 3.5 ≈ 47, 2.9 ≈ 51; ^aCodes from positive instrumental, positive emotional and positive other are combined.

^bMissing values. *p < .05. **p < .01. ***p < .001.

4) Cross-country Differences Based on "non-native" Coders in Behavioral Observation:

When considering how non-native coders rated the couples from the other country, American coders rated German subjects in the helpee role as more positive ($t = 2.49$, $df = 37$, $p < .05$) and less neutral ($t = 1.93$, $df = 37$, $p = .06$) than "native" German coders rated German couples. Alternatively, German coders rated American subjects in the helpee role as more neutral ($t = 2.93$, $df = 39$, $p < .01$) and less negative ($t = 2.04$, $df = 39$, $p < .05$) than "native" American coders rated American couples.

A similar pattern was detected for coding the subjects in the helper role: American coders rated German couples as more negative ($t = 2.36$, $df = 37$, $p < .05$) than German coders. German coders rated American couples as more neutral ($t = 2.48$, $df = 39$, $p < .05$) and less negative ($t = 3.57$, $df = 39$, $p < .01$) in their support behavior than American coders rated the same American couples.

B. Social Support and Relationship Functioning

1) Associations between Social Support and Relationship Functioning within an Individual:

In addition to understanding the complexities in the coding process when applied to cross-country analyses, the current investigation provides the opportunity to explore the ways in which social support relates to other important indices of relationship functioning between the two countries. The following analyses are based on native coders.

The above findings indicate that American couples request and provide support with more emotion, whereas German couples respond more neutrally. The findings also indicate that these differences were not reflected in marital adjustment differences. In fact, men and women in both countries demonstrated almost identical marital adjustment scores (Table 5).

The mean scores of social support and relationship adjustment do not indicate whether associations between the variables function in a similar manner. Therefore, the social support variables were correlated to other measures of relationship functioning in both countries (Table 6). Results indicated significant correlations between social support and other indices of relationship functioning only for U.S. couples, and primarily among females; there were no associations between social support and self-reported measures of relationship functioning for German couples. More specifically, for the American women, a significant negative correlation emerged between relationship satisfaction and negative helper behavior. That is, the more negative behavior the woman demonstrated as helper, the lower her satisfaction with the relationship. Alternatively, the more satisfied the woman was with the relationship, the more positive support behavior she showed toward her partner. The same pattern was found in affective communication: the lower a woman's affective communication levels, the greater the negative and the less positive helper support behavior she provided. For American men, a significant correlation emerged for affective communication and negative helpee behavior; the lower the affective communication levels, the more negatively American men asked for support.

TABLE 6 CORRELATIONS BETWEEN THE SUB-SCALES OF THE SSICS AND RELATIONSHIP FUNCTIONING FOR AMERICAN AND GERMAN COUPLES

SSICS scales	QMI ²				AFC ³			
	USA		GER		USA		GER	
	♀	♂	♀	♂	♀	♂	♀	♂
<i>Helpee</i>								
positive	.08	-.19	.14	.06	-.15	-.15	-.08	-.18
negative	-.12	.07	.05	.17	.10	.38*	.06	-.12
neutral	-.04	.11	-.14	.05	.06	-.03	.08	.17
<i>Helper</i>								
negative	-.45**	-.08	-.01	-.06	.36**	.01	.08	.05
neutral	-.03	.04	-.06	.14	-.07	.29	-.03	.01
positive ¹	.25*	.02	.10	.04	-.36**	-.17	-.04	-.09

Note. QMI: Quality of marriage index; AFC: Affective communication from the Marital Satisfaction Inventory; US female $n = 90$, US male $n = 57$, GER female $n = 64$, GER male $n = 64$. ¹Codes from positive instrumental, positive emotional and positive other are combined. ²Higher scores indicating greater satisfaction. ³Higher scores indicating greater dissatisfaction with affective communication. * $p < .05$. ** $p < .01$.

2) Associations between Helper and Helpee Social Support:

In order to understand the ways in which social support operates during an interaction, it is important to understand the relationship between helper support and helpee support behavior during the conversation. For both American and German couples, the more negatively the women asked for support, the less positive and more negative the men were in providing support behavior (Table 7). Among male helpees, the more positively men asked for support, the more positive and less neutral females were in providing support. Likewise, when American men requested support in less negative ways, their female partners demonstrated more positive support. Furthermore, the less neutral men were in requesting support, the more positive and less neutral women were in providing support.

TABLE 7 GENDER-SPECIFIC CORRELATIONS BETWEEN THE SUB-SCALES OF THE SSICS FOR AMERICAN ($N = 123$) AND GERMAN COUPLES ($N = 128$)

			Male					
			Helpee			Helper		
			positive	negative	neutral	positive	negative	neutral
<i>German couples</i>								
Female	Helpee	positive	.47**	-.15	-.30*	.20	-.23	.05
		negative	-.30*	.65**	.13	-.28*	.62**	-.06
		neutral	-.39**	.03	.35**	-.13	.04	.08
	Helper	positive ^a	.48**	.05	-.40**	.17	-.07	-.03
		negative	-.12	.02	.10	-.09	.16	-.03
		neutral	-.43**	-.12	.48**	-.09	-.07	.12
<i>US couples</i>								
Female	Helpee	positive	.32*	-.05	-.30*	.37**	-.16	-.32*
		negative	-.12	-.16	.29*	-.35**	.44**	.11
		neutral	-.14	.02	.18	-.33**	.21	.22
	Helper	positive ^a	.57**	-.38**	-.45**	.85**	-.53**	-.61**
		negative	-.07	.25	.03	-.49**	.82**	-.10

neutral	-.51**	.20	.44*	-.62**	.03	.85*
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Note. ^aCodes from positive instrumental, positive emotional and positive other are combined.

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

IV. DISCUSSION AND CONCLUSION

The primary aim of the present study was to examine whether a coding system developed in one country could be used reliably in another country. Across countries, the Kappa scores for helper and helpee behavior assigned by native coders were similar as compared to other studies using the SSICS [e.g. 47, 48]. Therefore, results indicate that the SSICS can be used reliably within both countries. It should be noted that a great deal of additional work was required in order to accomplish this goal, which included bringing coders from Germany to the U.S. so that coders could be trained together, along with frequent face-to-face meetings between the investigators from both countries in order to resolve coding questions and concerns that emerged during the study. It is unclear whether coders in different countries would develop a high level of reliability when using a coding system from another country without such extensive initial and ongoing efforts.

A related goal to the current investigation was to explore whether coders were able to reliably rate conversations of couples from a different country. Findings indicate that coding suffered significantly when the country of the couple did not match the country of the coder. More specifically, based on Kappa scores, German and American coding groups could not reliably code helper behavior from the other country. To understand the basis for the difficulty in coding couples from another country, different hypotheses were considered. First, it may be that coders simply cannot understand the nuances among couples from another country, and this lack of understanding results in random errors in coding. Second, the errors might be more systematic in one of two ways: (a) a coder might have an egocentric bias in which they code another country as compared to the application of codes to couples from their own country (i.e., Americans tend to code everyone as positive and negative, and Germans code everyone as neutral), or (b) the coder might have a stereotype of the other country and code accordingly (i.e., German coders may perceive Americans as very positive communicators and code American couples accordingly, and American coders may perceive Germans as more frank and negative in their communication and code them accordingly).

Results indicated a clear pattern such that coders from one country rated couples as they saw couples in their own culture, demonstrating an egocentric bias. More specifically, American coders rated German couples similar to how American coders viewed American couples, rating German couples with more positive and negative support and less neutral support than the German coders rated German couples. Similarly, German coders rated American couples similar to how German coders viewed German couples, with less positive and negative support and more neutral support behaviors than American coders rated American couples.

There are at least two possible interpretations for these findings, the first being methodological. One possibility is that the coders from a given country developed a general mindset regarding the subjects' behavior during the coding process and forced couples from the other country to fit into these perceived norms. This interpretation may be particularly likely if coders had coded all couples from their own country first, and later coded the couples from the other country. However, the coders coded conversations from both countries throughout the course of the investigation, making this interpretation unlikely. The second possibility is that coders raised in a given country are given to understand relationships and partners' behavior within that context. Even with a high level of training for coders from both countries, trained together and monitored throughout the investigation, these country-specific perspectives cannot be overcome. This set of findings was unanticipated by the investigators, each of whom has significant experience in both countries and oversaw the coding process. Although no definitive explanation is possible, the results raise the possibility that it is quite difficult to understand the nuances of couples from a different country, even with a concerted effort to learn those nuances; to coin a phrase, "What happens in Vegas needs to be coded in Vegas?"

In addition to exploring cross-country aspects of the behavioral coding process, the present study addressed substantive issues related to cross-country differences in social support processes. Results indicate major strategical differences across countries regarding how partners attempt to elicit from and provide social support to the other individual. Both women and men in Germany used more neutral strategies than women and men in the U.S. in asking for support from their partners. American couples demonstrated more emotional behaviors in general (both more positive and more negative). It seems that German couples engage in more neutral support behavior than American couples. Interestingly, these differences in communication behaviors are not reflected in marital adjustment differences. Men and women in both countries demonstrate almost identical marital adjustment scores, suggesting that greater levels of neutrality are more acceptable in German couples. Given that gender and patient status are confounded in the current investigation, it will be important to explore social support in health problems that are common to both genders.

The current findings should not be interpreted to indicate that German couples are routinely unemotional in their interactions. In fact, as noted previously, Halford, et al. [36] found that German couples were more willing to disagree openly with one another when discussing relationship problems without experiencing negative implications to their relationships. The pattern of findings reported by the Halford investigation, in addition to current results, indicate the importance of cultural

norms for couples' communication and that investigators must not assume a consistent meaning across cultures for a given relationship behavior.

It also is important to recognize that the current results are based on concurrent measures of coded social support and relationship functioning. In studying couples' communication in domains outside of healthcare, Gottman and Levenson [49] found that associations between coded behavior and current relationship adjustment were quite different from the prediction of later relationship functioning indicated by the same coded behavior. Thus, it remains unclear for long-term functioning whether it is preferable to be more (or less) emotionally expressive when coping with a cancer diagnosis, and whether this will vary by culture. Research concerning the relation of social support to women's psychological and physical adjustment has yielded inconsistent findings [50]. Although social support appears to predict better psychological adjustment in women diagnosed with breast cancer in some investigations [51], this finding is not universal [50]. For example, Bolger, et al. [52] reported that social support did not affect a woman's distress over time. Longitudinal, cross-country investigations will be necessary to disentangle this temporal issue that might operate differently across cultures.

A final goal of the current investigation was to investigate the ways in which social support is associated with other relationship variables within a couple. The results indicate that there is an association between helpee and helper support behavior during the conversations. For couples from both countries, the more negatively the women asked for support, the less positive and more negative the men were in providing support behavior. The more positively men asked for support, the more positive and less neutral females were in providing support. These findings are consistent with findings from other investigations that have reported that the ways in which individuals ask for support likely influences the support they receive [45]. However, given that sequential analyses were not conducted, it is impossible to determine whether the types of support provided by the partner influence requests for support, vice versa, or whether there are circular, reciprocal influences between helper and helpee support behaviors.

The generalizability of these findings is limited because the sample was predominantly Caucasian and relatively high in educational level (especially the American sample). In addition, the data are all correlational and cross-sectional; longitudinal data would enhance the interpretability of the findings. The couples also demonstrated high levels of relationship adjustment. Therefore, it is unclear whether the results would generalize to a sample of relationally distressed cancer patients and their partners who are confronting the dual stressors of a major health threat along with relationship discord. Additionally, all patients were female and all partners were male. Future studies should evaluate whether the findings can be replicated in a patient population with mixed genders. It must also be noted that coding was accomplished somewhat differently: the German coders coded the U.S. interactions directly from videos (with the aid of transcripts), since the coders were also fluent in English. However, because the U.S. coders did not speak German fluently, German transcripts of the German couples' interactions were created, and a native English speaker translated the transcripts into English. The U.S. coders watched the German videos in order to assess non-verbal cues, and then read the transcripts of the interactions for content. This "language barrier" may confound the "true" cultural differences in the observed verbal and non-verbal behaviors. However, most European researchers do speak English, while U.S. researchers very rarely speak German (or other foreign languages); finding fluent bilingual coders is very difficult. This study therefore presents the first methodological attempt to overcome this problem.

Despite potential limitations, the reported findings have significant implications for employing observational coding systems across countries and understanding social support behavior in couples facing a life-threatening disease. Partners clearly offer social support across countries, and coders can reliably understand and code that support behavior within their own country. However, this becomes an arduous task when attempting to code support behaviors between partners from different countries; this study was unable to achieve that goal, despite considerable effort. From a substantive perspective, the findings indicate that couples from the two countries request and provide social support regarding cancer in different ways, yet couples from both countries are equally satisfied with their relationships. These findings indicate that researchers must be culturally aware in interpreting social support results from a given culture without generalizing to other cultures. Likewise, clinicians must be thoughtful in designing and implementing social support interventions so that their treatment plans are culturally sensitive as they attempt to help couples confronting the challenges of major health problems such as cancer.

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