

Katarzyna Sanna<sup>1</sup>, Lidia Cierpiatkowska<sup>2</sup>, Paweł Kleka<sup>2</sup>, Marta Stelmach-Mardas<sup>1</sup>,  
Dariusz Iżycki<sup>1</sup>

<sup>1</sup>Poznan University of Medical Sciences, Poland

<sup>2</sup>Adam Mickiewicz University, Poznań, Poland

## Development of the cancer-patient social support questionnaire: reliability and validity

*Opracowanie oraz analiza trafności i rzetelności  
Kwestionariusza Wsparcia Społecznego Pacjent–Opiekun*

**Background:** Social support is an important mediator between disease and psychological adjustment both for the patient and the family members. The aim of this paper is to describe the development and initial reliability and validity of the Patient-Caregiver Social Support Questionnaire (KWPO), a four versions self report questionnaire to measure received and expected social support in cancer patients and given and demanded social support in informal caregivers.

**Methods:** A total of 102 cancer-caregiver dyads completed the Patient-Caregiver Social Support Questionnaire together with other questionnaires as part of a larger study that aims to assess the health status of cancer caregivers in Poland. The reliability and validity of the questionnaire were analyzed.

**Results:** Reliability of the KWPO can be considered satisfactory with a Cronbach's alpha ranging from 0,89 for demanded social support to 0,923 for expected social support. Analysis of content validity showed CVR value, from 0.85 for expected social support to 0.92 for demanded social support. The principal dimension of the scales' versions were analyzed using confirmatory factor analysis (CFA). A four-factor model was supported by the data. The multidimensional aspect of the construct of social support was supported.

**Conclusions:** The Patient-Caregiver Social Support Questionnaire can be considered suitable for measuring social support in cancer-caregivers dyads. It can be used to help Healthcare specialist to assess the patient's need for social support and caregivers competences to provide it. The questionnaire can help in determining the differences in provision and reception of social support and basing on results implement interventions.

Key words: Social support questionnaire, validation, cancer patients, family caregivers

**Acknowledgments:** This research was supported by the Medical University in Poznań *Young Scientists Grant* ( number 502-14-02233381-09379). The authors would like to thank the service providers along with the local physicians in participating center Samodzielny Publiczny Szpital Kliniczny Nr 1 Przemienienia Pańskiego - Klinika Onkologii . Also, we wish to express our gratitude to all participating patients and their families for their kind cooperation.

## Introduction

Social support is an important mediator between disease and psychological adjustment. Cancer's diagnosis, as well as the subsequent phases of the disease and its treatment are a source of extreme stress both for the patient and for the family[1]. With the developments of the modern medicine more caregiving responsibilities had shifted from the hospital to the home situation, where social support is primarily provided by close relatives or friends[2] called in the literature as informal caregivers or family caregivers, carers or caregivers[3].

Social support is a multidimensional construct of both structural and functional components[4]. The structural component includes quantitative properties of the social network, whilst the functional component refers to the types of social interactions[5]. Popularly social support is understood as comforting people in difficult situations, however the spectrum of supportive behaviours is very wide and is classified differently by individual authors[6]. Cohen and Willis[7] name 4 types of social support: *emotional* conceptualised as expressing empathy, caring, reassurance and providing opportunities for emotional expression and venting; *instrumental* involving provision of material aid or help with daily tasks, *informational* referring to supplying with relevant informations and *integrative* understood as spending time together. Types of supportive behaviours penetrate each other, which means that an individual may receive various support elements fit to his current needs[8]. Components of social support can be further broadly distinguished in terms of received, perceived[9], provided[10] as well as ideal support[11]. Social support is a process between two individuals, namely the receiver and provider which means that the effects of this transactions may be analysed from the double perspective[12,13].

Cancer patients are highly distressed group due to the rapid changes following the diagnosis and the after-effects of the treatment[14] and as for that their needs for the support encompass all of the supportive behaviours types named by Cohen and Willis [6]. Published studies have documented that receiving social support has an important moderating role in mental and physical health outcomes [15,16], has buffering effect on stressful life events [17] as well as great impact on treatment outcomes [18]. Giving social support has also proved to have advantageous effects on the provider[19]. As cancer is affecting not only the patient but also the family[20], providing social support may have beneficial[21,22] or disadvantageous consequences[23]. Cancer caregivers may experience posttraumatic growth[24], have higher self-esteem or closer relations with others[25] as an effect of caregiving. However, as this population is often unprepared to performing cancer-care specific duties or taking on additional responsibilities[26], they are in danger of depression, anxiety disorders or burden[27]. Social support is a process between two individuals [13] having their own needs and abilities to engage in this transaction. Those needs are highly individualised and may depend on sex[28] personality[29] or attachment style[30]. It seems that the match of those needs and competences may play a role in determining efficacy of social support.

According to Cutron's Optimal Matching Theory[31] the most efficient coping with a difficult situation occurs when provided social support fits the needs or the support

beneficiary[32]. Support may appear harmful however, when it's irrelevant or does not match the needs of receiver[33]. Following this theory, Merluzzi[34] documented that cancer patients not receiving adequate level of social support were poorly adjusting to cancer in comparison to those receiving appropriate type of support. Cancer patients that are receiving adequate social support are less at risk of developing depression and anxiety disorders[35] or cope better with the treatment consequences[36]. Satisfactory level of support requires to be adjusted to the needs of the receiver[37]. Some patients may require increased general level or specific types[38] of support to better adjust, whereas others may need less support or no support of specific type[39].

The measurement of social support interactions between cancer patients and their caregivers is critical to researchers and practitioner in examining the role that support plays in the cancer trajectory[40,41]. Most of the social support measurements focus on different functional or structural aspects of social support[42], however to our knowledge there are no tools assessing social support for cancer population and from the reciprocal angle. In this study social support is conceptualized in terms of a transaction of emotional, instrumental, informational and integrative resources between the provider and receiver of social support. We understand social support to be adequate when provided support fits to the expectations of the receiver. Based on this conceptualization and a critical review of the literature, we developed a questionnaire to measure this phenomenon. The aim of this study is to describe the development and test the reliability and validity of a brief- self report instrument constructed in two versions for cancer patients and their informal caregivers that measure the received, provided as well as expected and demanded social support.

## Methods

### Sample

The sample included a total of 102 patients [42,2% men (n=41), mean age  $60.8 \pm 6.20$ , range 50-76; 57.8% women (n= 59), mean age  $54.6 \pm 7.07$ , range 42-71; with breast cancer 57,8% (n=59), colorectal cancer 36.3% (n=37), lung cancer 5.9% (n=6)] and 103 caregivers [39.6% men (n=40), mean age  $54.6 \pm 9,48$ , range 23-70; 60.4% women (n=61), mean age  $53.3 \pm 13.83$ , range 20-75, with two data missing]. Participants at the time of the study were undergoing chemotherapy after their first cancer diagnosis.

### Measures

A socio demographic questionnaire and the *Patient-Caregiver Social Support Questionnaire (KWPO)* were administered to all participants together with other instrument as a part of a larger study. The *Patient-Caregiver Social Support Questionnaire* consists of 4 versions, two for the patient and two for the caregivers. The variant for the patients measures the received social support as well as the ideal (expected social support). The variant for the caregiver measures the provided and perceived as expected social support (demanded). The received social support was

conceptualised as the amount and type of the support an individual actually gets in the moment of crisis; the provided social support was conceptualised as the amount and type of the support an individual actually gives in the moment of crisis. The expected social support was conceptualised as the amount and type an individual wish to receive, whereas the perceived as expected social support (demanded) was conceptualised as the amount and type of social support that the provider thinks is expected from him. Each version consists of 20 equal items in a Likert 4-point scale, grouped in 5 items for every of the social support types named by Cohen and Willis[7]: instrumental, emotional, informational and integrative. Appendix 1 includes the list of the items in both English and Polish for all the four versions. The Patient-Caregiver Social Support Questionnaire gives an opportunity to compare the level of fit between received, expected, given and demanded aspects as well as the types of social support, independently on the direction of those transitions. The level of fit is calculated as a difference between sums on each subscale (eg. emotional received vs emotional given) or between versions (eg. received vs. expected).

In order to develop the questionnaires items we conducted an open-question inquiry among 30 breast cancer patients asking them what type of support they receive and expect from their family members. The answers were then classified accordingly to social support type presented by Cohen and Willis. Next, after evaluating existing social support instruments (i.e. BSSS), items indicating those types were developed. After conducting pilot study among 30 patients and their caregivers we conducted primarily reliability tests, based on which we excluded one item from each social support type subscale (apart from given emotional social support).

## **Procedure**

Data was collected from December 2015 until January 2017. The *Patient-Caregiver Social Support Questionnaire* together with several other instruments as a part of a larger study were administrated to cancer patients who were undergoing chemotherapy treatment in one of Poznań hospitals. Inclusion criteria were: diagnosed with breast or lung cancer for women and colorectal and lung cancer for men, during chemotherapy treatment after first diagnosis. If the patients had cognitive disorders or refused to give informed consent, they were excluded. Patients on the ward were approached, asked for the consent and when given asked to choose the family member who in their opinion was giving them the most support. Participants could fill in the questionnaire during their stay in the hospital or send it by post. We disseminated 200 questionnaires, 105 came back, giving the response rate 52,5%.

## **Statistical methods**

Statistical analysis were executed using JASP statistical program[43]. To determine reliability Cronbach's coefficient alpha was used to measure internal consistency of each version of the questionnaire. To determine the validity of the tool, content and construct validity were measured. Content validity was measured using the Lawshe method[42]. A panel of content experts was

asked to review the potential scale items and validate that they are appropriate indicators of the construct. The panel consisted of 9 people (8 women and 1 man), 7 of them were trained psychologists, two of them were Phd doctoral candidates. All of the panellists received training before the review. Content validity ratio (CVR) for nine panellists was computed (desired value >0.78).

Construct validity was tested using confirmatory factor analyses (CFA). CFA was performed to confirm whether the data fit the model presented by Cohen and Willis [6]. The model fit indices included goodness-of-fit index (GFI; desired value  $\geq .90$ ), adjusted goodness-of-fit index (AGFI; desired value  $\geq .90$ ), parsimony goodness-of-fit index (PGFI > .50), root mean square error of approximation (RMSEA; desired value  $\geq .08$ ), comparative fit index (CFI; desired value  $\geq .90$ ), Tacker-Lewis index (TLI; desired value  $\geq .90$ ), and normed chi-square (i.e., the ratio of  $\chi^2/df$ )[48].

### **Ethical considerations**

The study was carried out in accordance with the regulations of the Medical Ethical Board of Poznan University of Medical Sciences. With the questionnaire, participants received a letter explaining the aim of the study. As the study was anonymous, the verbal informed consent was obtained from each recruited patient before the questionnaire survey. Return of the completed questionnaire was taken as consent to participate.

### **Results**

#### **Reliability**

Cronbach's alpha was 0.905 received social support, 0.897 for provided social support, 0.923 for expected social support and 0.890 for demanded social support. Internal consistency was measured for the four subscales separately and is reported in Table 1.

Table 1 Internal consistency of Patient-Caregiver Support Questionnaire subscales

	Support type	Patient		Caregiver	
		Cronbach	Gutmann	Cronbach	Gutmann
Received/Given	Informational	0.810	0.793	0.785	0.758
	Emotional	0.833	0.810	0.859	0.848
	Instrumental	0.610	0.614	0.626	0.618
	Integrative	0.777	0.752	0.743	0.752
Expected/Demanded	Informational	0.814	0.812	0.861	0.851
	Emotional	0.854	0.834	0.831	0.811
	Instrumental	0.724	0.699	0.703	0.736
	Integrative	0.814	0.813	0.750	0.739

### Validity

#### Content validity

Content validity was assessed by a panel of experts. Using Lawshe method [42], CVR was computed (desired value >0.78). We calculated CVR for each scale, mean subscales values were calculated for each tool.

All versions had a satisfying CVR value, from 0.85 for expected social support to 0.92 for demanded social support. The lowest CVR value subscale was for the expected-informational support type, the highest value was one for given and demanded-emotional support type and expected-instrumental support type. Table 2 reports the CVR values for the Cancer-Patient Support Questionnaire

Table 2 CVR values of Patient-Caregiver Support Questionnaire and subscales

		Patient	Caregiver
Given/received	Informational	0.78	0.78
	Emotional	0.87	1
	Instrumental	0.96	0.96
	Integrative	0.87	0.82
	<b>All scale</b>	<b>0.87</b>	<b>0.89</b>
Expected/Demanded	Informational	0.6	0.91
	Emotional	0.98	1
	Instrumental	1	0.91
	Integrative	0.82	0.87
	<b>All scale</b>	<b>0.85</b>	<b>0.92</b>

## Construct validity

A confirmatory Factor Analysis (CFA) statistical procedure was used to evaluate the goodness of fit to a four-factor model (informational, emotional, instrumental, integrative support) for every version of the scale. The analysis of concurrent models (2-4 or 4-2) reached considerably lower fit indices.

The goodness of fit indexes were acceptable, the highest one for given social support (0.982), the lowest one for expected social support (0.943). The tested models posit flat, non-orthogonal structure of respective social support dimensions. Lower fit indices for given and demanded social support is probably caused by crossloadings between respective items, which can be observed as high correlations between the items. Table 3 reports the summary from CFA for the Cancer-Patient Support Questionnaire.

Table 3 Summary of model fit statistics from confirmatory factor analysis for the Patient-Caregiver Support Questionnaire

Goodness of fit index	Criterion*	Patient		Caregiver	
		Received	Expected	Given	Demanded
GFI	≥ .90	0.964	0.943	0.982	0.959
AGFI	≥ .90	0.949	0.921	0.975	0.943
PGFI	>.50	0.687	0.673	0.713	0.684
RMSEA	≥ .08	0.038	0.080	0.077	0.112
RMSEA.CI.LOWER		0.000	0.057	0.058	0.094
RMSEA.CI.UPPER		0.067	0.102	0.095	0.130
CFI	≥ .90	0.968	0.886	0.835	0.703
TLI	≥ .90	0.963	0.868	0.810	0.656
CHISQ		181.228	238.461	277.527	323.472
DF		164	164	183	164
PVALUE		0.169	<0.001	<0.001	<0.001

\*Based on Konarski R (2016) [45]

## Discussion

The preliminary results with the Patient-Caregiver Social Support Questionnaire are encouraging. Our findings of the study provide evidence of the reliability and validity of the tool for cancer patients and their caregivers. All the versions of Cancer-patient Social Support

Questionnaire showed good internal consistencies from 0.890 for demanded social to 0.923 for expected social support. The subscales (instrumental, emotional, informational, integrative) had a satisfactory result, with Cronbach's  $\alpha$  over 0.70. with the exception of instrumental given and received social support. The consistent findings confirm that Cancer-patient Social Support Questionnaire has acceptable reliability.

Content and construct validity were measured in order to determine the validity of the tool. All versions of Cancer-patient Social Support Questionnaire had good CVR ratios from 0.85 to 0.92. The results met the criterion of 0.78 based on Lawshe method [42]. Construct validity was computed by means of Confirmatory Factor analysis (CFA). Our aim was to test the model fit of social support based on theoretical definitions of social support presented by Collins and Willis[7]. We expected that the scales measured a multiple dimensions of functional social support construct including: instrumental, emotional, informational and integrative need. We further expected that the structure of social support measured received, given, expected and demanded social support as a subgroup of social support types. The Confirmatory Factor Analysis, however, suggest that a flat, non-orthogonal structure, including only the types of social support was supported by the data. The model fit indices for a flat model in four dimensions (received, expected, given, demanded) were eligible in GFI (from 0.943 to 0.982, for details see table 3), AGFI (from 0.921 to 0.975), CFI (from 0,703 to 0.968) and TLI (from 0,656 to 0.963) for received social support, except for RMSE for caregivers demanded (0.112). These finding suggest that the parts of the scales can be treated separately as individual tools, assessing functional aspects of social support from providers and receivers perspectives.

The Cancer-patient Social Support Questionnaire offers promising possibilities for intervention and research. For instance the differentiation of social support types in accordance with the source and side of social support (eg. receiver vs. provider, close family relative vs. distant relative, friend) may be useful in characterising individual social support needs on the receiver's side and competences on the providers side. Furthermore, the scale gives an opportunity to assess the fit between the received and expected social support together with the given and demanded social support. As the Cutron's Optimal Matching Theory [34] states the fit between the required support and given plays a beneficiary role in the trajectory of social support. The tool gives a possibility to analyse those transactions and modulate the direction accordingly to whom the intervention is addressed or who is object of research inquiry. The level of fit can be of great importance for the receivers health, however, as the social support is a process between two people, the tool can be also used to analyse the effects of the level of this fit from the providers' perspective. Differences in the dimensions identified in The Cancer-patient Social Support Questionnaire may have implications in assessing where social support needs to be mobilised or what type of interventions need to be delivered to individuals to improve their social support skills.

There were some limitations of the study. First the study was conducted among 100 patients and caregivers which means that the results on validity and reliability needs to be taken with precaution. Secondly the research was conducted in Wielkopolska region with only 3 types of

cancer diagnosis with a specific stage and treatment, which limited the generalization of the results to all cancer patients and their caregivers.

Future study should explore the validity and reliability in different cancer group populations. In addition, it would be beneficial to study how this instrument compares to other social support scales and its association with depression, QoL, burden and other constructs.

**Conflict of interest:** The authors declare that they have no competing interests.

## References:

1. Romito F, Goldzweig G, Cormio C, Hagedoorn M, Andersen BL (2013) Informal Caregiving for Cancer Patients. *Cancer* 119:2160-9 doi.org/10.1002/cncr.28057
2. Glajchen M (2004) The emerging role and needs of family caregivers in cancer care. *J Support Oncol* 2:145-155.
3. Bastawrous M (2013) Caregiver burden? A critical discussion. *International. IJNS* 50: 431-441 doi:10.1016/j.ijnurstu.2012.10.005
4. Nausheen B, Gidron Y, Peveler R, Moss-Morris R (2009) Social support and cancer progression: A systematic review. *J Psychosom Res* 67:403-415 doi:10.1016/j.jpsychores.2008.12.012
5. Sęk H, Cieślak R (2012) Wsparcie społeczne- sposoby definiowania, rodzaje i źródeł wsparcia, wybrane koncepcje teoretyczne. In: Sęk H (red) *Wsparcie społeczne stres i zdrowie*, Wydawnictwo PWN, Warszawa, pp.11-28
6. Ducharme F, Stevens B, Rowat K (1994) Social Support: Conceptual and Methodological Issues for Research in Mental Health Nursing. *Issues Ment Health Nurs* 15:373-392 doi:10.3109/01612849409006915
7. Cohen S, Wills TA (1985) Stress, social support, and the buffering hypothesis. *Psychol Bull* 98:310-357 doi:10.1037//0033-2909.98.2.310
8. Kacperczyk A (2006) *Wsparcie społeczne w instytucjach opieki paliatywnej i hospicyjnej*. Wydawnictwo Uniwersytetu Łódzkiego, Łódź
9. Ekbäck M, Benzein E, Lindberg M, Årestedt K (2013) The Swedish version of the multidimensional scale of perceived social support (MSPSS) - a psychometric evaluation study in women with hirsutism and nursing students. *Health Qual Life Outcomes* 11:168 doi:10.1186/1477-7525-11-168
10. Brown SL, Nesse RM, Vinokur AD, Smith DM (2003) Providing Social Support May Be More Beneficial Than Receiving It. *Psychol Sci* 14:320-327 doi:10.1111/1467-9280.14461
11. Power MJ, Champion LA, Aris SJ (1988) The development of a measure of social support: The Significant Others (SOS) Scale. *Br J Clin Psychol* 27:349-358 doi:10.1111/j.2044-8260.1988.tb00799.x
12. Thomas PA (2009) Is It Better to Give or to Receive? Social Support and the Well-being of Older Adults. *J Gerontol B Psychol Sci Soc Sci* 65:351-357 doi:10.1093/geronb/gbp113
13. Piferi RL, Lawler KA (2006) Social support and ambulatory blood pressure: An examination of both receiving and giving. *Int J Psychophysiol* 62:328-336 doi:10.1016/j.ijpsycho.2006.06.002
14. Maass S, Roorda C, Berendsen A, Verhaak P, Bock GD (2015) The prevalence of long-term symptoms of depression and anxiety after breast cancer treatment: A systematic review. *Maturitas*,82:100-108 doi:10.1016/j.maturitas.2015.04.010
15. Giesbrecht GF, Poole JC, Letourneau N, Campbell T, Kaplan BJ (2013) The Buffering Effect of

- Social Support on Hypothalamic-Pituitary-Adrenal Axis Function During Pregnancy. *Psychosom Med* 75(9), 856-862 doi:10.1097/psy.0000000000000004
16. Umberson D, Montez JK (2010) Social Relationships and Health: A Flashpoint for Health Policy. *J Health Soc Behav.* 51. doi:10.1177/0022146510383501
  17. Cohen S (2004) Social Relationships and Health. *Am Psychol* 59: 676-684
  18. Reblin M, Uchino BN (2008) Social and emotional support and its implication for health. *Curr Opin Psychiatry* 21: 201-205 doi:10.1097/ycp.0b013e3282f3ad89
  19. Gierveld JD, Dykstra PA (2008) Virtue is its own reward? Support-giving in the family and loneliness in middle and old age. *Ageing and Society* 28:271-287 doi:10.1017/s0144686x07006629
  20. Mccarthy B, Andrews T, Hegarty J (2014) Emotional Resistance Building: how family members of loved ones undergoing chemotherapy treatment process their fear of emotional collapse. *J Adv Nurs* 71: 837-848 doi:10.1111/jan.12549
  21. Aknin LB, Broesch T, Hamlin JK, Vondervoort JW (2015) Prosocial behavior leads to happiness in a small-scale rural society. *J Exp Psychol Gen* 144:788-795. doi:10.1037/xge0000082
  22. Schwartz CE, Sendor M (1999). Helping others helps oneself: Response shift effects in peer support. *Adaptation to changing health: Response shift in quality-of-life research. Soc Sci Med.* 48:175-188. doi:10.1037/10382-012
  23. Fujiwara T (2007) The role of altruistic behavior in generalized anxiety disorder and major depression among adults in the United States. *J Affect Disord* 101:219-225 doi:10.1016/j.jad.2006.11.024
  24. Cormio C, Romito F, Viscanti G, Turaccio M, Lorusso V, Mattioli V (2014) Psychological well-being and posttraumatic growth in caregivers of cancer patients *Front Psychol* 5:1342 doi:10.3389/fpsyg.2014.01342
  25. Li Q, Loke AY (2013) The positive aspects of caregiving for cancer patients: a critical review of the literature and directions for future research. *Psycho-Oncology*, 22:2399-2407. doi:10.1002/pon.3311
  26. Duffy JD, Valentine AD (2010) MD Anderson manual of psychosocial oncology. McGraw-Hill, New York
  27. Given BA, Given CW, Sherwood P (2012) The Challenge of Quality Cancer Care for Family Caregivers. *Semin Oncol Nurs* 28:205-212. doi:10.1016/j.soncn.2012.09.002
  28. Lindorff, M (2000) Is it better to perceive than receive? Social support, stress and strain for managers. *Psychol Health Med* 5: 271-286
  29. Swickert RJ, Rosentreter CJ, Hittner JB, Mushrush JE (2002) Extraversion, social support processes, and stress. *Pers Individ Dif* 32:877-891
  30. Nicholls W, Hulbert-Williams N, Bramwell R (2014) The role of relationship attachment in psychological adjustment to cancer in patients and caregivers: a systematic review of the literature. *Psycho-Oncology* 23: 1083-1095. doi:10.1002/pon.3664

31. Cutrona, CE (1990) Stress and social support: In search of optimal matching. *J Soc Clin Psychol* 9: 3–14 doi: 10.1521/jscp.1990.9.1.3
32. Cutrona C, Russell D. (1990) Type of social support and specific stress: toward a theory of optimal matching. In: Sarason B, Sarason I, Pierce G (ed) *Social Support: An Interactional View*, Wiley, New York, pp 319–366
33. Cutrona CE, Shaffer PA, Wesner KA, Gardner KA (2007) Optimal Matching Support and Perceived Spousal Sensitivity. *J Fam Psychol* 21:754-758
34. Merluzzi TV, Philip EJ, Yang M, Heitzmann CA (2015) Matching of received social support with need for support in adjusting to cancer and cancer survivorship. *Psycho-Oncology* 25:684-690 doi:10.1002/pon.3896
35. Katz J, Monnier J, Libet J, Shaw D, Beach, SRH. (2000) Individual and Crossover Effects of Stress on Adjustment in Medical Student Marriages. *J Marital Fam Ther* 26:341-351
36. Michael YL, Berkman LF, Colditz GA, Holmes MD, Kawachi I(2002) Social networks and health-related quality of life in breast cancer survivors: A prospective study. *J Psychosom Res* 52:285-293
37. Helgeson VS, Cohen S (1996) Social support and adjustment to cancer: Reconciling descriptive, correlational, and intervention research. *Health Psychol* 15:135-148
38. Wise D, Stake JE (2002) The moderating roles of personal and social resources on the relationship between dual expectations (for instrumentality and expressiveness) and well-being. *J Soc Psychol* 142:109–119
39. Braun M, Hales S, Gilad L, Mikulicer M, Rydall A, Rodin G (2011) Caregiving styles and attachment orientations in couples facing advanced cancer. *Psycho-Oncology* 21:935-943 doi:10.1002/pon.1988
40. Usta YY (2012) Importance of Social Support in Cancer Patients. *Asian Pac J Cancer Prev*. 13:3569-3572 doi:10.7314/apjcp.2012.13.8.3569
41. Arora NK, Rutten LJ, Gustafson DH, Moser R, Hawkins RP (2007) Perceived helpfulness and impact of social support provided by family, friends, and health care providers to women newly diagnosed with breast cancer. *Psycho-Oncology* 16:474-486 doi:10.1002/pon.1084
42. Bernal G, Maldonado-Molina MM, Scharrón del Río MR (2003) Development of a Brief Scale for Social Support: Reliability and validity in Puerto Rico. *Int J Clin Health Psychol* 3: 251-264
43. JASP Team (2016). *JASP (Version 0.8.0.0)*[Computer software]
44. Devon H A, Block ME, Moyle-Wright P, Ernst DM, Hayden SJ, Lazzara DJ, Savoy SM, Kostas-Polston E (2007) A Psychometric Toolbox for Testing Validity and Reliability. *J Nurs Scholarsh* 39:155-164 doi:10.1111/j.1547-5069.2007.00161.x
45. Konarski R.(2016). *Modele równań strukturalnych. Teoria i praktyka*. PWN,Warszawa.

## APPENDIX 1 Cancer- Patient Social Support Questionnaire

Item	Position/ Pozycja
<b>RECEIVED INFORMATIONAL/ OTRZYMYWANE INFORMACYJNE</b>	
Shares with me with the information on the disease	1
Dzieli się ze mną informacjami na temat choroby	
Asks the Medical Service specialists how is my treating going	2
Pyta pracowników Służby Zdrowia o przebieg leczenia	
Advices on health eating	3
Udziela mi wskazówek dotyczących zdrowego żywienia	
Looks for me information about additional methods of treatment ie. physical activity, support groups	4
Szuka dla mnie informacji na temat dodatkowych form leczenia np. odpowiedniej aktywności fizycznej, grup wsparcia	
Looks for me information about treatment side effects and methods of coping with them, alleviating them	5
Szuka informacji na temat skutków ubocznych leczenia oraz metod radzenia sobie z nimi, łagodzenia ich	
<b>RECEIVED EMOTIONAL/OTRZYMYWANE EMOCJONALNE</b>	
When I am worried.... tries to comfort me	1
Kiedy martwię się, ..... próbuje mnie pocieszyć	
Often says: everything will be fine, you will manage to fight this disease	2
Często mówi mi: wszystko będzie dobrze, uda Ci się pokonać tę chorobę	
hugs me willingly	3
Chętnie się do mnie przytula	
Speaks with me about everything connected with the illness, even if those things are very difficult	4
Rozmawia ze mną na wszystkie tematy związane z chorobą, nawet te bardzo trudne	
When I experience difficult emotions, ie. I cry, ..... is next to me	5
Kiedy doświadczam trudnych emocji, np. płaczę, ..... jest koło mnie	
<b>RECEIVED INSTRUMENTAL/ OTRZYMYWANE INSTRUMENTALNE</b>	
Takes me to and from the hospital for medical visits	1
Zawozi i odwozi mnie do szpitala, na wizyty lekarskie	
Helps me to take a bath	2
Pomaga mi się wykąpać	
Gotuje dla mnie posiłki	3
Cooks meals for me	

Helps me with my former duties	4
Wyręcza mnie w obowiązkach, które wcześniej należały do mnie	
Makes shopping for me	5
Robi za mnie zakupy	
<b>RECEIVED INTEGRATIVE/OTRZYMYWANE INTEGRUJĄCE</b>	
When it's possible he/she goes out with me for a walk	1
Kiedy może wychodzi ze mną na spacer	
Finds time to speak with me about recent events	2
Znajduje czas, żeby porozmawiać ze mną, co się ostatnio wydarzyło	
Goes with me for family, social meetings	3
Uczestniczy ze mną w proszonych spotkaniach rodzinnych, towarzyskich	
When we can..... invites family and friends to spend time together	4
Kiedy możemy, zaprasza rodzinę, przyjaciół żeby wspólnie spędzić czas	
Finds time to eat a meal together every now and then	5
Znajduje czas żeby zjeść ze mną wspólnie posiłek raz na jakiś czas	

<i>Item</i>	<i>Pozycja</i>
<b>EXPECTED INFORMATIONAL/OCZEKIWANE INFORMACYJNE</b>	
I would like..... to look information about additional methods of treatment ie. physical activity, support groups	1
Chciałabym, żeby ..... szukał/a dla mnie informacji na temat dodatkowych form leczenia np. odpowiedniej aktywności fizycznej, grup wsparcia	
I would like.....to share with me with the information on the disease	2
Chciałabym, żeby ..... dzielił się ze mną informacjami na temat choroby	
I would like.....look for me information about treatment side effects and methods of coping with them, alleviating them	3
Chciałabym, żeby..... szukał/a informacji na temat skutków ubocznych leczenia oraz metod radzenia sobie z nimi, łagodzenia ich	
I would like..... to advices on health eating	4
Chciałabym, żeby..... udzielał/a mi wskazówek dotyczących zdrowego żywienia	
I would like..... to asks the Medical Service specialists how is my treating going	5
Chciałabym, żeby .....pytał/a pracowników Służby Zdrowia o przebieg leczenia	
<b>EXPECTED EMOTIONAL/OCZEKIWANE EMOCJONALNE</b>	
I would like.....to speaks with me about everything connected with the illness, even if those things are very difficult	1

<i>Chciałabym, żeby.....rozmawiał/a ze mną na wszystkie tematy związane z chorobą, nawet te bardzo trudne</i>	
<i>I would like.....to say: everything will be fine, you will manage to fight this disease</i>	2
<i>Chciałabym, żeby..... mówił/a mi: wszystko będzie dobrze, uda Ci się pokonać tę chorobę</i>	
<i>I would like..... to hug me</i>	3
<i>Chciałabym, żeby ..... mnie przytulał/a</i>	
<i>I would like.....to be next to me when I experience difficult emotions</i>	4
<i>Chciałabym, żeby ..... był/a koło mnie, gdy doświadczam trudnych emocji</i>	
<i>I would like.....to comfort me, when I am worried</i>	5
<i>Kiedy się martwię, chciałabym, żeby ..... mnie pocieszał/a</i>	
<b>EXPECTED INSTRUMENTAL/OCZEKIWANE INSTRUMENTALNE</b>	
<i>I would like..... to help me to take a bath</i>	1
<i>Chciałabym, żeby.....pomagał/a mi się wykąpać</i>	
<i>I would like..... to take me to and from the hospital for medical visits</i>	2
<i>Chciałabym, żeby ..... zawoził/a i odwoził/a mnie do szpitala, na wizyty lekarskie</i>	
<i>I would like..... to cook meals for me</i>	3
<i>Chciałabym, żeby ..... gotował/a dla mnie posiłki</i>	
<i>I would like..... to make shopping for me</i>	4
<i>Chciałabym, żeby ..... robił/a za mnie zakupy</i>	
<i>I would like .....to help me with my former duties</i>	5
<i>Chciałabym, żeby ..... wyręczał/a mnie w obowiązkach, za które wcześniej byłam odpowiedzialna</i>	
<b>EXPECTED INTEGRATIVE/OTRZYMYWANE INTEGROUJĄCE</b>	
<i>I would like.....to go with me for family, social meetings</i>	1
<i>Chciałabym, żeby.....uczestniczył/a w proszonych spotkaniach rodzinnych, towarzyskich</i>	
<i>I would like..... to invite family and friends to spend time together</i>	2
<i>Chciałabym, żeby.....zapraszał/a naszą rodzinę, znajomych, żeby wspólnie spędzić czas</i>	
<i>I would like.....to Find time to speak with me about recent events</i>	3
<i>Chciałabym, żeby .....znajdował/a czas, żeby ze mną porozmawiać, o tym co się ostatnio wydarzyło</i>	
<i>I would like.....to find time to eat a meal together every now and then</i>	4
<i>Chciałabym, żeby.....znajdował/a czas, żeby wspólnie zjeść posiłek raz na jakiś czas</i>	
<i>I would like.....to go out with me for a walk</i>	5

Chciałabym, żeby .....wychodził/a ze mną na spacer

Item	Pozycja
<b>GIVEN INFORMATIONAL/DAWANE INFORMACYJNE</b>	
I look for and share with.....with the information on the disease	1
Szukam i dzielę się z .....informacjami na temat choroby	
I ask the Medical Service specialists how is the treating going	2
Pytam pracowników Służby Zdrowia o przebieg leczenia	
I advise.....on health eating so he/she would be healthier	3
Doradzam ....., w jaki sposób mogłaby się odżywiać, żeby była zdrowsza	
I Look for information about treatment side effects and methods of coping with them, alleviating them	4
Szukam informacji na temat skutków ubocznych leczenia oraz metod radzenia sobie z nimi, łagodzenia ich	
I speak with..... how other people managed with the disease	5
Rozmawiam z .....,jak inne znane mi osoby radziły sobie podczas swojej choroby	
<b>GIVEN EMOTIONAL/ DAWANE EMOCJONALNE</b>	
When I see.....worried, I try to comfort him/her	1
Kiedy widzę, że .....martwi się, natychmiast staram się ją pocieszyć	
I often say: everything will be fine, you will manage to fight this disease	2
Często mówię.....: wszystko będzie dobrze, uda Ci się pokonać tę chorobę	
I hug willingly.....	3
Przytulam się chętnie do.....	
I am not afraid to speak with..... about everything connected with the illness, even if those things are very difficult	4
Nie boję się rozmawiać z ..... na wszystkie tematy, związane z jej chorobą, nawet te bardzo trudne	
I am next to..... when he/she experiences difficult emotions, ie. cries	5
Jestem koło ....., gdy doświadcza trudnych emocji, np. płacze	
When.....is in the hospital, I try to visit him/her or call to see how he/she is doing, comfort him/her	6
Kiedy .....jest w szpitalu, staram się ją odwiedzić albo zadzwonić, żeby dowiedzieć się, jak się czuje, wesprzeć ją na duchu	
<b>DAWANE INSTRUMENTALNE/GIVEN INSTRUMENTAL</b>	
I cook meals for.....	1
Gotuję posiłki dla.....	

I help in taking care over children, grandchildren or others in need for assistance	2
Pomagam w opiece nad dziećmi, wnukami albo innymi domownikami, wymagającymi opieki	
I help.....to take a bath	3
Pomagam ..... w kąpiel	
I make shopping for.....	4
Robię zakupy dla.....	
I help..... with his/hers former duties	5
Wyřęczam ..... w obowiązkach, które wcześniej należały do niej	
<b>GIVEN INTEGRATIVE/DAWANE INTEGRUJĄCE</b>	
When we can, I invite family and friends to spend time together	1
Kiedy możemy zapraszam rodzinę, znajomych żeby wspólnie spędzić czas	
I go fo for family, social meetings	2
Uczestniczę razem z..... w proszonych spotkaniach rodzinnych, towarzyskich	
When I can, I go with.....for a walk	3
Kiedy tylko mogę wychodzą z ..... na spacer	
I try to find time to find speak with..... about recent events	4
Staram się często znaleźć czas dla.....żeby porozmawiać o tym, co się ostatnio wydarzyło	
I find time to eat a meal together every now and then	5
Znajduję czas, żeby z .....zjeść wspólnie posiłek raz na jakiś czas	

Item	Pozycja
<b>DEMANDED INFORMATIONAL/WYMAGANE INFORMACYJNE</b>	
..... would want me to look for and share information about additional methods of treatment ie. physical activity, support groups	1
Chciałaby, żebym szukał/a i dzielił/a dla niej informacji na temat dodatkowych form leczenia np. odpowiedniej aktywności fizycznej, grup wsparcia	
.....would want me to look for him/her information on the disease	2
Chciałaby, żebym szukał/a dla niej informacji na temat choroby	
.....would want me to look for information about treatment side effects and methods of coping with them, alleviating them	3
Chciałaby, żebym szukał/a informacji na temat skutków ubocznych leczenia oraz metod radzenia sobie z nimi, łagodzenia ich	

.....would want me to advice him/her on healthy eating	4
Chciałaby, żebym udzielał/a jej wskazówek dotyczących zdrowego żywienia	
.....would want me to speak with him/her how other people managed with the disease	5
Chciałaby, żebym rozmawiał/a z nią o tym, jak inni radzili sobie z chorobą	
<b>DEMANDED EMOTOTIONAL/WYMAGANE EMOCJONALNE</b>	
.....would want me to say: everything will be fine, you will manage to fight this disease	1
Chciałaby, żebym mówił/a jej: wszystko będzie dobrze, uda Ci się pokonać tę chorobę	
.....would want me to hug him/her	2
Chciałaby, żebym ją przytulał/a	
.....would want me to next to him/her when he/she is experiencing difficult emotions	3
Chciałaby, żebym był/a koło niej , gdy doświadcza trudnych emocji	
.....would want me to visit him/her or call to see how he/she is doing, comfort him/her	4
Kiedy jest w szpitalu, ..... chciałaby, żebym ją odwiedził/a albo zadzwonił/a, żeby dowiedzieć się jak się czuję, wesprzeć ją na duchu	
.....would want me to comfort him/when he/she is worried	5
Kiedy się martwi, ..... chciałaby, żebym ją pocieszał/a	
<b>DEMANDED INSTRUMENTAL/WYMAGANE INSTRUMENTALNE</b>	
.....would want me to	1
.....would want me to	2
.....would want me to cook meals for him/her	3
Chciałaby, żebym gotował/a dla niej posiłki	
.....would want me to make shopping for him/her	4
Chciałaby, żebym robił/a za nią zakupy	
.....would want me to help with his/hers former duties	5
Chciałaby, żebym wyręczał ją w obowiązkach, za które wcześniej była odpowiedzialna	
<b>WSPARCIE DAWANE INTEGRUJĄCE</b>	
Would want me to find time to speak with about recent events	1
Chciałaby, żebym każdego dnia znajdował/a czas żeby z nią porozmawiać, o tym co wydarzyło się w ciągu dnia	

.....would want me to watch TV together	2
Chciałaby, żebyśmy wspólnie pooglądali telewizję	
.....would want me to invite family and friends to spend time together	3
Chciałaby, żebym zapraszał/a rodzinę, znajomych, żeby wspólnie spędzać czas	
.....would want me to eat a meal together every now and then	4
Chciałaby, żebym znajdował/a czas żeby zjeść wspólnie posiłek raz na jakiś czas	
.....would want me to go for family, social meetings	5
Chciałaby, żebym uczestniczył/a w proszonych spotkaniach rodzinnych, towarzyskich	