**Supplementary table 1. Questionnaires of the Comprehensive Needs Assessment Tool for Cancer Caregivers**

|  |  |
| --- | --- |
| **Variables** | **Questionnaire items** |
| Health and Psychological problemFamily / Social support | Q1. Needed help with my own health problemsQ2. Needed help with concerns about the patientQ3. Needed help with depressionQ4. Needed help with feelings of anger, irritability, or nervousnessQ5. Needed help with loneliness or feelings of isolationQ6. Needed help with feelings of vague anxietyQ7. Needed help with patient’s over-dependenceQ8. Needed help with patient’s lack of appreciation of the caregivingQ9. Needed help with difficulties in family relationships after cancer diagnosisQ10. Needed help with difficulties in interpersonal relationship after care |
| Health care staffInformation and education | Q11. Needed help with my own relaxation and my personal lifeQ12. Wished to be respected and treated as a person by my doctorQ13. Wished doctor to be easy, specific, and honest in his/her explanationQ14. Wished to be able to seek doctor in a quick and easy way when in needQ15. Wished to be involved in the decision making process in choosing tests or treatment that the patient receivesQ16. Wished health care staff to be in harmonious collaboration and communication among themselvesQ17. Wished sincere interest and empathy from nurseQ18. Wished nurse to explain treatment or care that was being given to the patientQ19. Wished nurse to promptly attend to patient’s discomfort and painQ20. Needed information about current status of patient’s illness and its future courses |
| Religious support | Q21. Needed information about tests and treatmentsQ22. Needed information about caring for the patient (symptom management, diet, exercise, etc.)Q23. Needed information about complementary and alternative medicineQ24. Needed information about cancer treating hospitals or clinics and physiciansQ25. Needed information about financial support for medical expenses from government and/or private organizationsQ26. Needed help with communication with the patient and/or other family membersQ27. Needed information about caregiving-related stress managementQ28. Needed religious supportQ29. Needed help in finding the meaning of my situation and in coming to terms with it |
| Hospital servicePractical support | Q30. Needed a designated hospital staff who would be able to provide counseling for any concerns and guidance with the course of the treatment, from the point of diagnosis to the period after the dischargeQ31. Needed guidance about hospital facilities and servicesQ32. Needed space reserved for caregiversQ33. Needed a visit-home nursing serviceQ34. Needed an opportunity to share experiences or information with other caregiversQ35. Needed welfare services (e.g. psychological counseling) for caregiversQ36. Needed transportation service for getting to and from the hospitalQ37. Needed treatment near my homeQ38. Needed lodging services near hospital where the patient is treated Q39. Needed help with economic burden due to cancerQ40. Needed someone to help me with housekeeping and/or child care |
|  | Q41. Needed assisted care in the hospital or at home |

**Supplementary table 2. Result factor analysis**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Items** | **Healthcare staff** | **Family / Social support** | **Practical support** | **Information and education** | **Psychological problem** | **Religious support** |
| Q13 | .853 | .193 | .080 | .105 | .124 | .123 |
| Q14 | .828 | .215 | .129 | .033 | .136 | .095 |
| Q19 | .822 | .202 | .170 | .111 | .108 | -.096 |
| Q18 | .806 | .250 | .169 | .096 | .171 | .067 |
| Q15 | .784 | .141 | .229 | .126 | .204 | .160 |
| Q17 | .781 | .247 | .154 | .094 | .235 | .087 |
| Q12 | .751 | .343 | .167 | -.001 | .132 | .114 |
| Q16 | .741 | .169 | .258 | .294 | .153 | .156 |
| Q20 | .724 | .093 | .148 | .419 | .192 | .074 |
| Q21 | .698 | .096 | .138 | .467 | .176 | .119 |
| Q30 | .660 | .094 | .325 | .234 | .071 | .354 |
| Q24 | .654 | .084 | .293 | .387 | .155 | .178 |
| Q31 | .585 | .148 | .213 | .199 | -.076 | .525 |
| Q25 | .557 | .289 | .225 | .434 | -.009 | .226 |
| Q32 | .530 | .086 | .340 | .089 | -.144 | .389 |
| Q8 | .159 | .788 | .213 | .156 | .061 | .212 |
| Q7 | .127 | .775 | .258 | .114 | .143 | .134 |
| Q10 | .221 | .768 | .226 | .100 | .138 | .122 |
| Q9 | .279 | .738 | .306 | .107 | .163 | .066 |
| Q5 | .238 | .654 | .242 | .120 | .479 | .084 |
| Q4 | .235 | .636 | .032 | .069 | .496 | .146 |
| Q11 | .358 | .596 | .370 | -.140 | .192 | .074 |
| Q27 | .263 | .528 | .457 | .406 | .084 | .225 |
| Q36 | .315 | .107 | .751 | .079 | .170 | .032 |
| Q41 | .099 | .306 | .733 | .076 | .003 | .089 |
| Q38 | .116 | .187 | .694 | .137 | .143 | .146 |
| Q40 | .183 | .338 | .651 | .150 | -.063 | .011 |
| Q37 | .338 | .060 | .640 | .018 | .255 | .111 |
| Q33 | .052 | .333 | .595 | .175 | .121 | .385 |
| Q39 | .409 | .272 | .518 | .182 | .006 | .184 |
| Q35 | .281 | .369 | .498 | .376 | .068 | .282 |
| Q34 | .188 | .340 | .447 | .371 | .137 | .321 |
| Q22 | .487 | .091 | .173 | .680 | .165 | .134 |
| Q23 | .452 | .140 | .305 | .614 | .279 | -.048 |
| Q26 | .333 | .455 | .283 | .520 | .014 | .275 |
| Q2 | .351 | .225 | .096 | .186 | .676 | .179 |
| Q3 | .353 | .476 | .174 | .076 | .649 | .172 |
| Q6 | .233 | .432 | .264 | .165 | .637 | .095 |
| Q28 | .097 | .313 | .272 | -.009 | .281 | .671 |
| Q29 | .250 | .234 | .429 | .168 | .305 | .556 |
| Q1 | .384 | .289 | .024 | .239 | .217 | .486 |

**Supplementary table 3. Needs by quality of life of participants**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | n(%) | Total | Healthcare staff | Family / Social support | Practical support | Information and education | Psychological problem | Religious support |
| **EQ5-D** |  |  |  |  |  |  |  |  |
| No problem | 98(62.0) | 1.03±0.74 | 1.54±0.96 | 0.69±0.80 | 0.70±0.74 | 1.32±1.01 | 1.07±0.91 | 0.85±0.88 |
| Problem | 60(38.0) | 1.50±0.70 | 1.98±0.74 | 1.16±0.87 | 1.08±0.79 | 1.76±0.91 | 1.68±1.01 | 1.33±0.88 |
| p-value |  | **<0.001** | **0.001** | **0.001** | **0.003** | **0.007** | **<0.001** | **0.001** |