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

|  |  |
| --- | --- |
| **Variables** | **Questionnaire items** |
| Health and Psychological problem  Family / Social support | Q1. Needed help with my own health problems  Q2. Needed help with concerns about the patient  Q3. Needed help with depression  Q4. Needed help with feelings of anger, irritability, or nervousness  Q5. Needed help with loneliness or feelings of isolation  Q6. Needed help with feelings of vague anxiety  Q7. Needed help with patient’s over-dependence  Q8. Needed help with patient’s lack of appreciation of the caregiving  Q9. Needed help with difficulties in family relationships after cancer diagnosis  Q10. Needed help with difficulties in interpersonal relationship after care |
| Health care staff  Information and education | Q11. Needed help with my own relaxation and my personal life  Q12. Wished to be respected and treated as a person by my doctor  Q13. Wished doctor to be easy, specific, and honest in his/her explanation  Q14. Wished to be able to seek doctor in a quick and easy way when in need  Q15. Wished to be involved in the decision making process in choosing tests or treatment that the patient receives  Q16. Wished health care staff to be in harmonious collaboration and communication among themselves  Q17. Wished sincere interest and empathy from nurse  Q18. Wished nurse to explain treatment or care that was being given to the patient  Q19. Wished nurse to promptly attend to patient’s discomfort and pain  Q20. Needed information about current status of patient’s illness and its future courses |
| Religious support | Q21. Needed information about tests and treatments  Q22. Needed information about caring for the patient (symptom management, diet, exercise, etc.)  Q23. Needed information about complementary and alternative medicine  Q24. Needed information about cancer treating hospitals or clinics and physicians  Q25. Needed information about financial support for medical expenses from government and/or private organizations  Q26. Needed help with communication with the patient and/or other family members  Q27. Needed information about caregiving-related stress management  Q28. Needed religious support  Q29. Needed help in finding the meaning of my situation and in coming to terms with it |
| Hospital service  Practical 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 discharge  Q31. Needed guidance about hospital facilities and services  Q32. Needed space reserved for caregivers  Q33. Needed a visit-home nursing service  Q34. Needed an opportunity to share experiences or information with other caregivers  Q35. Needed welfare services (e.g. psychological counseling) for caregivers  Q36. Needed transportation service for getting to and from the hospital  Q37. Needed treatment near my home  Q38. Needed lodging services near hospital where the patient is treated  Q39. Needed help with economic burden due to cancer  Q40. 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** |