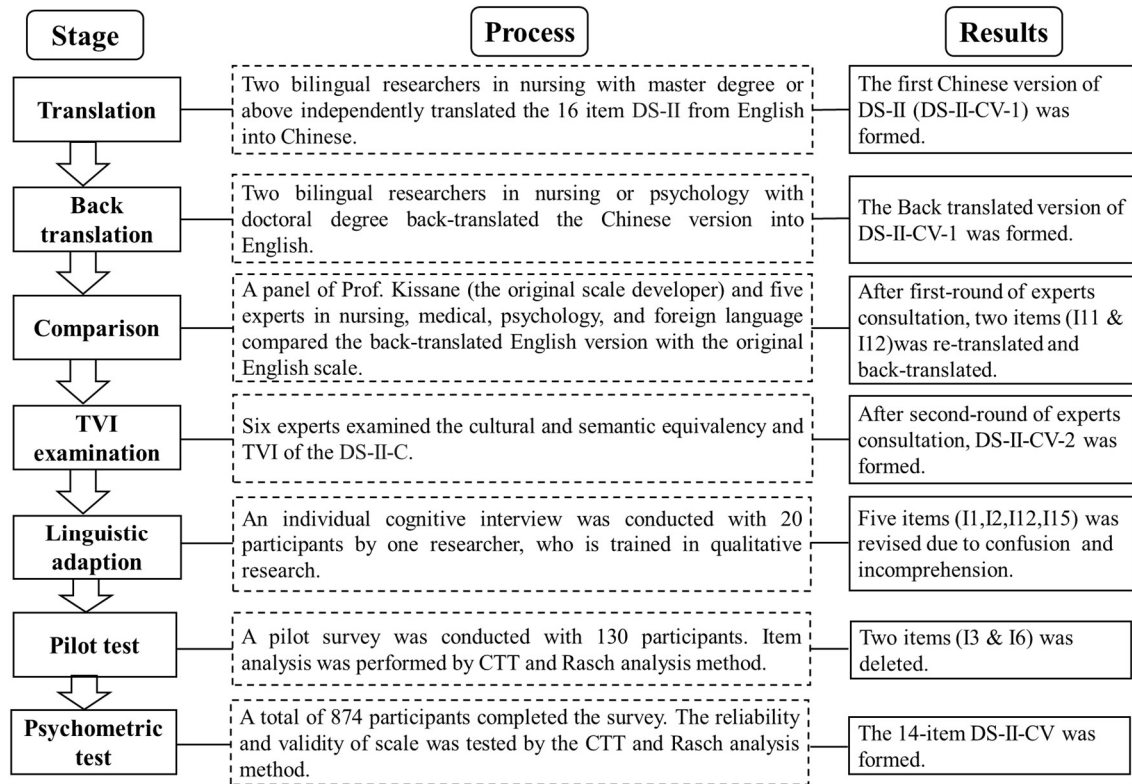




Appendix 1 The cross-cultural translation of DS-II

DS-II, the Demoralization Scale-II; TVI, Translation validity index; CTT, Classical Test Theory.

Appendix 2 Value assignment for categorical independent variables in the multiple regression analysis of the quality of life

| Independent variables              | Value assignment                                                                                                                                                                           |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Age                                |                                                                                                                                                                                            |
| Monthly average household income   |                                                                                                                                                                                            |
| Time since diagnosis               |                                                                                                                                                                                            |
| Admission times                    | Input the original data                                                                                                                                                                    |
| Medical expense                    |                                                                                                                                                                                            |
| Cancer stage                       |                                                                                                                                                                                            |
| Depression                         |                                                                                                                                                                                            |
| Place of residence                 | Reference: urban<br>Dummy coded variables: suburban, rural                                                                                                                                 |
| Educational level                  | Reference: primary school or below;<br>Dummy coded variables: middle school degree, high school/technical school degree, bachelor or higher                                                |
| Marital status                     | Reference: unmarried<br>Dummy coded variables: married, others                                                                                                                             |
| Occupation                         | Reference: unemployed<br>Dummy coded variables: worker, farmer, government officials, commercial servers, retired, others                                                                  |
| Primary caregiver                  | Reference: spouse<br>Dummy coded variables: children, parent, sibling, others                                                                                                              |
| Medical insurance                  | Reference: Publicly funded free medical care<br>Dummy coded variables: provincial medical insurance, city medical insurance, new rural cooperative, commercial insurance, self-pay, others |
| Cancer type                        | Reference: breast<br>Dummy coded variables: lung, colorectal, gastric, liver, others                                                                                                       |
| Whether family members have cancer | Reference: no<br>Dummy coded variables: unclear, yes                                                                                                                                       |
| Gender                             | Male=0, female=1                                                                                                                                                                           |
| Comorbidity                        | No=0, yes=1                                                                                                                                                                                |

Appendix 3 Depression and quality of life of three classes of demoralization

| Variables                 | Total<br>(n=874) | Class 1<br>(n=438) | Class 2<br>(n=249) | Class 3<br>(n=187) | F/ $\chi^2$ | P      |
|---------------------------|------------------|--------------------|--------------------|--------------------|-------------|--------|
| Depression                |                  |                    |                    |                    |             |        |
| PHQ total score           | 7.92±5.71        | 3.17 ±3.11         | 7.32±3.49          | 12.20±5.64         | 532.517     | <0.001 |
| Cognitive/affective score | 4.83±3.71        | 1.96±2.12          | 4.73±2.43          | 7.90±3.22          | 608.799     | <0.001 |
| Somatic score             | 3.12±2.65        | 1.22±1.43          | 2.60±1.57          | 4.30±3.10          | 233.687     | <0.001 |
| Being depression          | 27.6%            | 11.9%              | 36.8%              | 51.9%              | 527.528     | <0.001 |
| Quality of life           |                  |                    |                    |                    |             |        |
| MQOL total score          | 102.88±31.87     | 129.58 ±26.50      | 101.58±26.55       | 82.97±24.26        | 233.310     | <0.001 |
| Physical score            | 29.00±9.68       | 33.92±7.05         | 30.13±8.34         | 24.15±10.32        | 93.556      | <0.001 |
| Psychological score       | 28.11±10.07      | 34.25±7.78         | 29.12±8.85         | 22.42±9.57         | 130.219     | <0.001 |
| Existential score         | 27.70±13.87      | 37.19±13.20        | 25.17±13.19        | 22.54±11.04        | 118.165     | <0.001 |
| Support score             | 18.00±8.77       | 24.16±7.49         | 17.16±8.96         | 13.95±6.62         | 136.363     | <0.001 |

Note: MQOL, Mc Gill Quality of Life Questionnaire; PHQ, Patient health questionnaire.  
 Class 1, “low demoralization and emotional disturbance” group;  
 Class 2, “moderate demoralization and meaninglessness” group;  
 Class 3, “high demoralization and existential despair” group.