**Palliative Care Attitudes Scale – 14 item version**

This section asks you some questions about your beliefs about aspects of health and healthcare, particularly something called a “Palliative Care Consultation.” Palliative Care Consultations are for patients who have life-threatening illnesses or have symptoms or side effects that are difficult to manage. The consultation usually involves the patient (and family, if desired) meeting with a team of providers (e.g., doctor, nurse, psychologist, nutritionist, social worker). Usually the conversations focus on discussing ways to address (a) physical symptoms and side effects, (b) emotional concerns, (c) difficult decisions, or (d) end-of-life issues.

*Emotion Subscale*

**If, at your doctor’s suggestion, you went to a Palliative Care Consultation…**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 |
| Not at all stressful | A little stressful | Somewhat stressful | Very stressful | Extremely stressful | Extremely, extremely stressful |

1. How stressful would you find it to be overall?\*
2. How stressful would you find discussing severe physical symptoms or side effects (e.g., painful bone tumor, severe nausea, problems swallowing food)?\*
3. How stressful would you find discussing emotions, like feeling sad, scared, or angry?\*
4. How stressful would you find discussing difficult decisions, like whether to stop cancer treatments that are no longer working?
5. How stressful would you find discussing issues related to death and dying?

*Cognitive Subscale*

**If your doctor suggested you go to a Palliative Care Consultation…**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Definitely no | Probably no | Possibly no | Unsure | Possibly yes | Probably yes | Definitely yes |

1. Do you think a Palliative Care Consultation would help with physical quality of life?\*
2. Do you think a Palliative Care Consultation would help with feelings of sadness and depression?\*
3. Do you think a Palliative Care Consultation would help prolong life?\*

*Behavioral Subscale*

**If you were diagnosed with a life-threatening illness or had symptoms or side effects that were difficult to manage…**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Definitely no | Probably no | Possibly no | Unsure | Possibly yes | Probably yes | Definitely yes |

1. Would you be willing to attend the Consultation?\*
2. Would you try to schedule it as soon as possible?\*
3. Would you be willing to attend even if the time was inconvenient?
4. Do you believe the Consultation could be helpful?
5. Would you be willing to attend on a monthly basis for several months if requested?\*
6. Do you believe the Consultation would be informative?

**\***Items that were retained in the 9-item version

**Supplementary Tables**

**Table S1.** Response Endorsement Rates for PCAS-14 Emotional Subscale in Sample 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | Not at all stressful | A little stressful | Somewhat stressful | Very stressful | Extremely stressful | Extremely, extremely stressful |
| Emotional  |  |  |  |  |  |  |
| 1. How stressful would you find it to be overall?
 | 13.1% | 26.7% | 31.8% | 15.6% | 8.8% | 3.9% |
| 1. How stressful would you find discussing severe physical symptoms or side effects (e.g., painful bone tumor, severe nausea, problems swallowing food)?
 | 23.2% | 30.5% | 25.0% | 13.1% | 6.0% | 2.2% |
| 1. How stressful would you find discussing emotions, like feeling sad, scared, or angry?
 | 20.2% | 28.3% | 27.2% | 13.6% | 7.7% | 3.0% |
| 1. How stressful would you find discussing difficult decisions, like whether to stop cancer treatments that are no longer working?
 | 11.7% | 18.6% | 25.3% | 24.4% | 13.0% | 6.0% |
| 1. How stressful would you find discussing issues related to death and dying?
 | 14.4% | 18.0% | 26.5% | 20.4% | 11.2% | 9.5% |

*Note: N =* 633.

**Table S2.** Response Endorsement Rates for PCAS-14 Cognitive and Behavioral Subscales in Sample 1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Item | Definitely no | Probably no | Possibly no | Unsure | Possibly yes | Probably yes | Definitely yes |
| Cognitive |  |  |  |  |  |  |  |
| 1. Do you think a Palliative Care Consultation would help with physical quality of life?
 | 0.9% | 2.2% | 1.4% | 17.4% | 25.0% | 34.0% | 19.1% |
| 1. Do you think a Palliative Care Consultation would help with feelings of sadness and depression?
 | 1.4% | 6.0% | 3.0% | 20.5% | 29.7% | 28.6% | 10.7% |
| 1. Do you think a Palliative Care Consultation would help prolong life?
 | 4.3% | 20.9% | 8.4% | 36.0% | 16.7% | 9.5% | 4.3% |
| Behavioral  |  |  |  |  |  |  |  |
| 1. Would you be willing to attend the Consultation?
 | 0.8% | 1.7% | 1.3% | 7.3% | 12.3% | 36.8% | 39.5% |
| 1. Would you try to schedule it as soon as possible?
 | 1.1% | 3.5% | 3.0% | 11.2% | 13.7% | 37.4% | 30.0% |
| 1. Would you be willing to attend even if the time was inconvenient?
 | 1.7% | 4.9% | 6.5% | 13.4% | 19.4% | 34.1% | 19.9% |
| 1. Do you believe the Consultation could be helpful?
 | 0.8% | 2.8% | 0.8% | 15.0% | 22.4% | 32.5% | 74.4% |
| 1. Would you be willing to attend on a monthly basis for several months if requested?
 | 1.7% | 4.7% | 2.5% | 15.3% | 24.6% | 33.6% | 17.4% |
| 1. Do you believe the Consultation would be informative?
 | 0.9% | 1.7% | 0.5% | 12.3% | 21.5% | 38.5% | 24.5% |

*Note: N =* 633.

**Table S3**. Response Endorsement Rates for PCAS-9 Emotional Subscale in Sample 2

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | Not at all stressful | A little stressful | Somewhat stressful | Very stressful | Extremely stressful | Extremely, extremely stressful |
| Emotional  |  |  |  |  |  |  |
| 1. How stressful would you find it to be overall?
 | 16.5% | 24.5% | 28.4% | 17.1% | 8.4% | 5.2% |
| 1. How stressful would you find discussing severe physical symptoms or side effects (e.g., painful bone tumor, severe nausea, problems swallowing food)?
 | 27.1% | 28.6% | 23.4% | 13.0% | 6.0% | 1.9% |
| 1. How stressful would you find discussing emotions, like feeling sad, scared, or angry?
 | 21.2% | 26.0% | 28.8% | 13.4% | 7.1% | 3.5% |

*Note: N =* 462.

**Table S4.** Response Endorsement Rates for PCAS-9 Cognitive and Behavioral Subscales in Sample 2

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Item | Definitely no | Probably no | Possibly no | Unsure | Possibly yes | Probably yes | Definitely yes |
| Cognitive |  |  |  |  |  |  |  |
| 1. Do you think a Palliative Care Consultation would help with physical quality of life?
 | 0.4% | 1.1% | 0.9% | 11.0% | 22.5% | 35.7% | 28.4% |
| 1. Do you think a Palliative Care Consultation would help with feelings of sadness and depression?
 | 1.3% | 2.6% | 1.9% | 18.6% | 27.5% | 30.1% | 18.0% |
| 1. Do you think a Palliative Care Consultation would help prolong life?
 | 7.1% | 19.0% | 9.3% | 30.5% | 0.2% | 18.4% | 9.5% |
| Behavioral  |  |  |  |  |  |  |  |
| 1. Would you be willing to attend the Consultation?
 | 0.4% | 0.4% | 0.9% | 3.0% | 14.9% | 32.9% | 47.4% |
| 1. Would you try to schedule it as soon as possible?
 | 1.3% | 0.9% | 1.7% | 10.4% | 15.2% | 34.6% | 35.9% |
| 1. Would you be willing to attend on a monthly basis for several months if requested?
 | 1.1% | 1.3% | 1.3% | 8.9% | 21.2% | 35.1% | 31.2% |

*Note: N =* 462.

**Table S5.** Response Endorsement Rates for PCAS-9 Emotional Subscale in Sample 3

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Item | Not at all stressful | A little stressful | Somewhat stressful | Very stressful | Extremely stressful | Extremely, extremely stressful |
| Emotional  |  |  |  |  |  |  |
| 1. How stressful would you find it to be overall?
 | 18.5% | 23.4% | 30.6% | 12.1% | 9.7% | 5.6% |
| 1. How stressful would you find discussing severe physical symptoms or side effects (e.g., painful bone tumor, severe nausea, problems swallowing food)?
 | 44.0% | 23.4% | 19.8% | 8.5% | 2.0% | 2.4% |
| 1. How stressful would you find discussing emotions, like feeling sad, scared, or angry?
 | 27.4% | 31.9% | 18.1% | 10.5% | 7.7% | 4.4% |

*Note: N =* 225.

**Table S6.** Response Endorsement Rates for PCAS-9 Cognitive and Behavioral Subscales in Sample 3

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Item | Definitely no | Probably no | Possibly no | Unsure | Possibly yes | Probably yes | Definitely yes |
| Cognitive |  |  |  |  |  |  |  |
| 1. Do you think a Palliative Care Consultation would help with physical quality of life?
 | 2.0% | 2.4% | 1.2% | 21.4% | 28.2% | 28.6% | 16.1% |
| 1. Do you think a Palliative Care Consultation would help with feelings of sadness and depression?
 | 3.2% | 5.8% | 4.8% | 22.6% | 27.8% | 22.2% | 13.7% |
| 1. Do you think a Palliative Care Consultation would help prolong life?
 | 8.1% | 12.5% | 8.9% | 36.7% | 16.5% | 12.1% | 5.2% |
| Behavioral  |  |  |  |  |  |  |  |
| 1. Would you be willing to attend the Consultation?
 | 2.8% | 1.2% | 1.6% | 6.9% | 27.4% | 24.6% | 35.5% |
| 1. Would you try to schedule it as soon as possible?
 | 4.0% | 3.2% | 5.6% | 15.7% | 19.8% | 29.0% | 22.6% |
| 1. Would you be willing to attend on a monthly basis for several months if requested?
 | 4.0% | 3.6% | 2.8% | 17.3% | 24.2% | 30.2% | 17.7% |

*Note: N =* 225.

**Table S7.** Internal Consistency of the PCAS-9 Total Scale across Key Demographic and Health Subgroups in Samples 1 to 3

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Sample 1*N*=633 | Sample 2*N*=462 | Sample 3*N*=225 |
|  |  |  |  |
| Age |  |  |  |
| ≥65 | .81 | .76 | .78 |
| <65 | .81 | .77 | .87 |
| Gender |  |  |  |
| Female | .83 | .76 | .85 |
| Male | .78 | .77 | .82 |
| Education  |  |  |  |
| ≥Bachelor’s degree | .79 | .78 | .82 |
| <Bachelor’s degree | .85 | .73 | .85 |
| Financial straina |  |  |  |
| Present | .84 | .77 | .84 |
| Absent | .79 | .76 | .83 |
| Location, region |  |  |  |
| Northeast | .93 | .87 | .86 |
| Midwest | .93 | .89 | .88 |
| South | .89 | .90 | .80 |
| West | .87 | .92 | .84 |
| International | .75 | .59 | .81 |
| Location, palliative care gradeb |  |  |  |
| A/B | .82 | .76 | .85 |
| C/D | .79 | .81 | .81 |
| Cancer diagnosis |  |  |  |
| Prostate | .78 | .77 | -- |
| Breast | .82 | .78 | -- |
| Skin | .83 | .73 | -- |
| Lung | .84 | .81 | -- |
| Colon/rectal | .85 | .78 | -- |
| Other | .74 | .75 | -- |
| Metastases |  |  |  |
| Present | .72 | .80 | -- |
| Absent | .82 | .75 | -- |
| Primary non-cancer diagnosis |  |  |  |
| COPD |  |  | .77 |
| Heart Failure |  |  | .88 |
| Kidney Failure |  |  | .89 |
| Comorbidity |  |  |  |
| Present | .84 | .78 | .84 |
| Absent | .79 | .75 | .72 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Table S7 (continued).

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Sample 1*N*=633 | Sample 2*N*=462 | Sample 3*N*=225 |
|  |  |  |  |
| Multimorbidity |  |  |  |
| Present | .82 | .75 | .84 |
| Absent | .80 | .78 | .83 |
|  |  |  |  |
| Perceived Heath |  |  |  |
| Poor/fair | .85 | .76 | .85 |
| Good/Very good/excellent | .79 | .77 | .79 |

 |  |  |  |

*Note:* Values indicate Cronbach’s alphas for each subgroup in each Study.

aFinancial strain was assessed using the Financial Strain Index (1)

bStates were categorized according to their palliative care grades as indicated by the most recent state-by-state report card on access to palliative care released by the Center to Advance Palliative Care (2). In A/B states, >60% of hospitals in the state had a palliative care program, whereas is C/D states palliative care programs were present in only 21-60% of hospitals.

**Table S8.** PCAS-9 Measurement Invariance by Key Demographic and Health Characteristics across Samples 1 to 3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | Reference Model | CFI | RMSEA | ΔCFI | ΔRMSEA |
| Age (≥65 vs. <65) |  |  |  |  |  |
| 1. Configural | -- | .976\* | .067\* | -- | -- |
| 2. Weak | 1 | .975\* | .064\* | .000\* | .003\* |
| 3. Strong | 2 | .972\* | .065\* | .003\* | .001\* |
| 4. Strict | 3 | .969\* | .063\* | .003\* | .002\* |
|  |  |  |  |  |  |
| Gender (female vs. male) |  |  |  |  |  |
| 1. Configural | -- | .977\* | .065\* | -- | -- |
| 2. Weak | 1 | .977\* | .061\* | .000\* | .004\* |
| 3. Strong | 2 | .976\* | .060\* | .001\* | .001\* |
| 4. Strict | 3 | .971\* | .060\* | .004\* | .001\* |
|  |  |  |  |  |  |
| Bachelor’s education (present vs. absent) |  |  |  |  |  |
| 1. Configural | -- | .978\* | .064\* | -- | -- |
| 2. Weak | 1 | .978\* | .060\* | .000\* | .003\* |
| 3. Strong | 2 | .974\* | .062\* | .004\* | .002\* |
| 4. Strict | 3 | .964\* | .058\* | .000\* | .004\* |
|  |  |  |  |  |  |
| Financial strain (present vs. absent) |  |  |  |  |  |
| 1. Configural | -- | .975\* | .068\* | -- | -- |
| 2. Weak | 1 | .975\* | .065\* | .001\* | .003\* |
| 3. Strong | 2 | .972\* | .065\* | .003\* | .000\* |
| 4. Strict | 3 | .964\* | .068\* | .008\* | .003\* |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table S8 Continued** |  |  |  |  |  |
|  |  |  |  |  |  |
| Model | Reference Model | CFI | RMSEA | ΔCFI | ΔRMSEA |
| Perceived health (poor/fair vs. good/very good/excellent) |  |  |  |  |  |
| 1. Configural | -- | .976\* | .067\* |  |  |
| 2. Weak | 1 | .973\* | .067\* | .002\* | .001\* |
| 3. Strong | 2 | .971\* | .066\* | .002\* | .001\* |
| 4. Strict  | 3 | .967\* | .066\* | .004\* | .000\* |
|  |  |  |  |  |  |
| Comorbidity (present vs. absent) |  |  |  |  |  |
| 1. Configural | -- | .972\* | .072\* |  |  |
| 2. Weak | 1 | .972\* | .069\* | .001\* | .003\* |
| 3. Strong | 2 | .972\* | .065\* | .000\* | .004\* |
| 4. Strict  | 3 | .971\* | .061\* | .001\* | .004\* |
|  |  |  |  |  |  |
| Multimorbidity (present vs. absent) |  |  |  |  |  |
| 1. Configural | -- | .969\* | .076\* |  |  |
| 2. Weak | 1 | .969\* | .072\* | .000\* | .004\* |
| 3. Strong | 2 | .968\* | .069\* | .001\* | .003\* |
| 4. Strict  | 3 | .968\* | .065\* | .001\* | .004\* |
|  |  |  |  |  |  |
| Metastases (present vs. absent)a |  |  |  |  |  |
| 1. Configural | -- | .968\* | .076\* |  |  |
| 2. Weak | 1 | .967\* | .074\* | .002\* | .002\* |
| 3. Strong | 2 | .966\* | .071\* | .000\* | .003\* |
| 4. Strict  | 3 | .965\* | .067\* | .001\* | .004\* |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table S8 Continued** |  |  |  |  |  |
|  |  |  |  |  |  |
| Model | Reference Model | CFI | RMSEA | ΔCFI | ΔRMSEA |
| State palliative care grade (A/B vs. C/D) |  |  |  |  |  |
| 1. Configural | -- | .975\* | .068\* |  |  |
| 2. Weak | 1 | .976\* | .063\* | .001\* | .005\* |
| 3. Strong | 2 | .975\* | .061\* | .001\* | .002\* |
| 4. Strict  | 3 | .974\* | .058\* | .001\* | .003\* |

Note: *N* = 1,320. CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation. ΔCFI = change in CFI between the present model and its reference model. ΔRMSEA = change in RMSEA between the present model and its reference model. Configural = a configural invariance model where the factor structure (number of factors and items, and which factor each item loads on) is fixed to be equivalent across groups. Weak = a weak invariance model where each corresponding factor loading is fixed to be equivalent across groups. Strong = a strong invariance model where each corresponding item mean is fixed to be equivalent across groups. Strict = a strict invariance model where each corresponding error variance is fixed to be equivalent across groups.

**\***Acceptable model fit using existing guidelines (3-5)

aSamples 1 and 2 only, *N*=1,095

**Table S9.** Interpretations of PCAS Scores

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Total** | **Emotional** | **Cognitive** | **Behavioral** |
| **Score** | **%** | **Score** | **%** | **Score** | **%** | **Score** | **%** |
| Opposed | 9-29 | 3.7 | 3-9 | 16.9 | 3-9 | 6.1 | 3-9 | 4.4 |
| Skeptical | 30-43 | 36.6 | 10-13 | 33.4 | 10-14 | 35.8 | 10-14 | 23.8 |
| Optimistic | 44-52 | 44.0 | 14-16 | 34.6 | 15-17 | 33.4 | 15-18 | 42.9 |
| Favoring | 53-60 | 16.1 | 17-18 | 15.2 | 18-21 | 18.1 | 19-21 | 38.2 |

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