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FACTOR STRUCTURE, RELIABILITY, AND VALIDITY OF THE DEATH ATTITUDE PROFILE-REVISED

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ABSTRACT

The present study examined the factor structure, reliability, and validity of the Death Attitude Profile-Revised (DAP-R; Wong, Reker, & Gesser, 1994) using a sample of 403 hospital and hospice nurses. A principal-components factor analysis of the DAP-R indicated that the DAP-R may consist of six factors instead of the five originally reported by Wong et al. The first four factors reported by Wong et al., which correspond to the subscales that they labeled Fear of Death, Death Avoidance, Approach Acceptance, and Escape Acceptance, were replicated in the present study, and these subscales were found to have acceptable levels of internal consistency and to possess some degree of concurrent validity. However, the items which loaded on the fifth factor in Wong et al.'s study (their "Neutral Acceptance" subscale) were split across two factors in the present study, suggesting that this subscale may not be measuring a unitary construct.

Several different instruments have been developed for measuring attitudes toward death, including the Death Anxiety Scale (Templer, 1970), the Revised Death Anxiety Scale (Thorson & Powell, 1994), the Threat Index (Krieger, Epting, & Leitner, 1974; Neimeyer, 1994), the Multidimensional Fear of Death Scale (Hoelter, 1979), the Collett-Lester Fear of Death Scale (Lester, 1994),

the Fear of Personal Death Scale (Florian & Kravetz, 1983), the Coping with Death Scale (Bugen, 1980-81), and the Death Self-Efficacy Scale (Robbins, 1994). Most of the existing instruments in this area focus on negative attitudes toward death; however, it may be useful in some research and clinical settings to have an instrument available which can assess positive and neutral attitudes toward death as well as negative attitudes. Based on a conceptual analysis of attitudes toward death and a review of the results of past research in this area, Wong, Reker, and Gesser (1994) concluded that at least five different types of attitudes toward death can be identified, and they developed an instrument (the Death Attitude Profile-Revised, or DAP-R) which they claimed measures these five types of attitudes. Wong et al. based this claim on the results of a principal components factor analysis of this scale using a sample of 300 adults ranging in age from eighteen to ninety years. They reported that a five-factor structure consistent with their theoretical formulation emerged from this analysis, and they named and described the five factors as follows: 1) the Fear of Death subscale (7 items), which measures negative thoughts and feelings about death; 2) the Death Avoidance subscale (5 items), which measures attempts to avoid the topic of death; 3) the Approach Acceptance scale (10 items), which measures the extent to which a person views death as the entry point to a happy afterlife; 4) Escape Acceptance (5 items), which measures the extent to which a person views death as offering an opportunity to escape from a painful existence; and 5) Neutral Acceptance (5 items), which measures the extent to which a person accepts death as a reality in a neutral manner, i.e., neither welcoming nor fearing death (Wong et al., 1994). In addition to describing the results of their factor analysis, they also provided initial evidence in support of the reliability and validity of the DAP-R.

Neimeyer (1997-98) has rated the DAP-R as being one of the most psychometrically sound measures of attitudes toward death currently available, citing the initial data presented by Wong et al. in their validation study of the revised instrument. In addition to referring to evidence of the subscales' internal consistency and test-retest reliability and evidence in support of the convergent and discriminant validity of the instrument, Neimeyer (p. 106) remarks upon the fact that the "conceptually complex factor structure of the DAP-R has been closely approximated" in the factor analysis conducted by Wong et al. Thus, current evidence suggests that the DAP-R has good psychometric qualities; however, additional confidence could be placed in this instrument if the five-factor solution obtained by Wong et al. were to be replicated in a different sample. This was the primary purpose of the present study: to examine the factor structure of the DAP-R in a large sample using the same factor analytic techniques employed by Wong et al. (1994) and to compare the resulting factor structure to the structure reported by Wong et al. The second purpose of the study was to examine other psychometric properties of the DAP-R, including its reliability and validity, in the present sample.

METHOD

Participants

Data for the present study were collected as part of a larger study examining relationships between attitudes toward death and attitudes toward caring for dying patients among nurses. Participants in the study were nurses employed by a large hospital or by a hospice organization in an urban area of a Midwestern state. The instruments used in this study, along with a cover letter describing the study and requesting participation, were mailed to all nurses at the hospital and hospice (N = 963) through the internal mail systems of those organizations. A total of 403 nurses (374 hospital nurses and 29 hospice nurses) returned the research instruments, yielding a response rate of 41.8 percent. Three hundred sixty-two of the nurses (91%) were females and thirty-six (9%) were males. The mean age of the participants was 41.8 years (SD = 9.60), and the mean number of years of nursing experience was 14.5 (SD = 9.68). Two hundred eighty-one of the nurses (69.7%) were Caucasians, seventy-eight (20.2%) were African Americans, fourteen (3.5%) were Asian Americans, thirteen (3.2%) were Hispanics, one participant (0.2%) was a Native American, and sixteen participants (4%) did not report their ethnicity. Education level of the sample was as follows: ten (2.5%) were LPNs, twenty-eight (6.9%) had a nursing diploma, 201 (49.9%) had an Associate's degree in nursing, 133 (33%) had a Bachelor's degree in nursing, twenty (5%) had a Master's degree or above in nursing, and eleven participants (2.7%) did not report their educational level.

Measures

Participants were asked to complete a demographic questionnaire, the DAP-R, and the Frommelt Attitude Toward Care of the Dying Scale (Frommelt, 1991). The DAP-R consists of thirty two items; the response format for each item is a 7-point Likert scale ranging from "strongly disagree" to "strongly agree," yielding a score for each item from 1 to 7, respectively (Table 1). Each of the five subscale scores is calculated by adding together the respondent's scores on each of the items on that subscale and then dividing the sum by the number of items in that subscale. Thus, scores on each subscale can range between 1 and 7. The Frommelt scale is a thirty-item scale designed to measure nurses' attitudes regarding various issues associated with providing care to dying patients. The response format for each item is a 5-point Likert scale that ranges from "strongly disagree" to "strongly agree." Fifteen of the items are worded positively, and fifteen are worded negatively. Positive items are scored from 1 (strongly disagree) to 5 (strongly agree); scoring is reversed for the negative items. Thus, possible scores on this scale range from 0 to 150, with higher scores representing more positive attitudes toward providing care for dying patients. Frommelt (1991) provides evidence in support

Table 1. Death Attitude Profile-Revised

1. Death is no doubt a grim experience.
2. The prospect of my own death arouses anxiety in me.
3. I avoid death thoughts at all costs.
4. I believe that I will be in heaven after I die.
5. Death will bring an end to all my troubles.
6. Death should be viewed as a natural, undeniable, and unavoidable event.
7. I am disturbed by the finality of death.
8. Death is an entrance to a place of ultimate satisfaction.
9. Death provides an escape from this terrible world.
10. Whenever the thought of death enters my mind, I try to push it away.
11. Death is deliverance from pain and suffering.
12. I always try not to think about death.
13. I believe that heaven will be a much better place than this world.
14. Death is a natural aspect of life.
15. Death is a union with God and eternal bliss.
16. Death brings a promise of a new and glorious life.
17. I would neither fear death nor welcome it.
18. I have an intense fear of death.
19. I avoid thinking about death altogether.
20. The subject of life after death troubles me greatly.
21. The fact that death will mean the end of everything as I know it frightens me.
22. I look forward to a reunion with my loved ones after I die.
23. I view death as a relief from earthly suffering.
24. Death is simply a part of the process of life.
25. I see death as a passage to an eternal and blessed place.
26. I try to have nothing to do with the subject of death.
27. Death offers a wonderful release of the soul.
28. One thing that gives me comfort in facing death is my belief in the afterlife.
29. I see death as a relief from the burden of this life.
30. Death is neither good nor bad.
31. I look forward to life after death.
32. The uncertainty of not knowing what happens after death worries me.

of the reliability and validity of this Scale. The inclusion of this Scale in the present study provided an opportunity to examine the concurrent validity of the DAP-R.

Analyses

All analyses were conducted using the SAS System for Windows (Version 6.12) (SAS Institute, 1996).

RESULTS

Factor Structure of the DAP-R

A principal-components factor analysis of the DAP-R was conducted using an orthogonal (varimax) rotation. This is the same factor analytic procedure used by Wong et al. (1994) in their evaluation of the psychometric properties of the DAP-R. The rotated factor pattern is shown in Table 2, with the DAP-R items ordered according to their subscale membership and the highest factor loading for each item underlined. In this sample, the factor analysis yielded six factors, rather than the five reported by Wong et al., but overall, the results of the present analysis were quite similar to those obtained by Wong et al. The most coherent way to compare the results of the present analysis with those reported by Wong et al. is to discuss the results one factor at a time.

The first factor to emerge from Wong et al.'s analysis was the factor that they labeled as the "Approach Acceptance" subscale, consisting of ten DAP-R items (items 4, 8, 13, 15, 16, 22, 25, 27, 28, and 31), and this was also the first factor to emerge in the present analysis, with the identical ten items loading on this factor. This factor accounted for 24 percent of the variance in the present sample, compared with 33.3 percent of the variance in Wong et al.'s sample.

The second and third factors that emerged from Wong et al.'s analysis, which they labeled the "Fear of Death" subscale (consisting of items 1, 2, 7, 18, 20, 21, and 32) and the "Death Avoidance"subscale (consisting of items 3, 10, 12, 19, and 26) were reversed in order in the present analysis (in terms of percent of variance for which the factors accounted), but the items which loaded on each of these two factors were identical to those reported by Wong et al., with only one exception. In the present sample, item 1 ("Death is no doubt a grim experience") loaded most heavily on the "Death Avoidance" factor rather than the "Fear of Death" factor. However, the loadings for item 1 across these two factors in the present sample were not highly disparate (.36 versus .27), and if this item were going to load on some factor other than the factor on which it loaded in Wong et al.'s study, the next most logical factor would be the other factor that measures "negative" views of death, i.e., the Death Avoidance factor. This item was also somewhat problematic in Wong et al.'s analysis, since its factor loading on the "Fear of Death" factor was only .44 in that study. In terms of content, this item seems to fit better with this subscale than with the "Death Avoidance" subscale. Wong et al.'s second factor (the Fear of Death factor) accounted for 13.4 percent of the variance in their results, whereas the analogous factor (the third factor) in the present study accounted for 7.5 percent of the variance. Wong et al.'s third factor (the Death Avoidance factor) accounted for 7.7 percent of the variance in their results, whereas the analogous factor (the second factor) in the present study accounted for 14.9 percent of the variance.

The fourth factor in Wong et al.'s study, which they labeled the "Escape Acceptance" factor, was identical to the fourth factor in the present analysis, with the

Table 2. Rotated Component Structure of the Death Attitude Profile-Revised

Item No.	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
			"Approach Acceptance" Subscale			
4	.75	.00	−.01	−.05	.02	.02
8	.72	−.12	−.03	.08	.09	.03
13	.63	.06	−.07	.37	.04	−.01
15	.74	.12	−.04	.01	.18	.08
16	.76	.05	−.06	.06	.21	−.01
22	.70	−.03	.03	.05	.04	−.08
25	.81	.01	−.08	.25	.13	−.02
27	.69	−.15	−.05	.24	.14	−.08
28	.75	−.16	−.16	.13	−.11	−.02
31	.68	−.10	−.31	.15	−.05	.03
			"Death Avoidance" Subscale			
3	−.03	.79	.19	−.02	−.10	.06
10	.06	.74	.24	.10	−.11	.02
12	.01	.85	.09	.04	−.03	−.03
19	−.04	.83	.19	−.03	−.09	−.13
26	−.14	.75	.16	−.03	−.12	−.10
			"Fear of Death" Subscale			
1	−.08	.36	.27	.02	−.21	.29
2	.00	.28	.65	−.03	−.20	−.01
7	−.15	.30	.66	−.10	−.04	−.09
18	−.09	.53	.56	−.01	−.13	−.16
20	−.37	.32	.43	.00	−.06	.03
21	−.07	.21	.80	−.12	−.06	−.02
32	−.12	.07	.83	.04	−.04	.03
			"Escape Acceptance" Subscale			
5	.09	.04	−.12	.64	.11	−.11
9	.07	.06	.00	.75	−.08	.05
11	.16	.03	.05	.68	.12	−.01
23	.19	−.10	.00	.78	.10	.04
29	.17	.00	−.08	.80	−.05	.01
			"Neutral Acceptance" Subscale			
6	.12	−.12	−.19	.05	.65	−.06
14	.17	−.12	−.02	.02	.77	.10
17	.00	−.07	−.23	.04	.19	.71
24	.12	−.19	−.11	.12	.77	.15
30	−.03	−.08	.08	−.07	.01	.80

Note: Highest factor loading for each item is underlined.

same five DAP-R items (items 5, 9, 11, 23, and 29) loading on this factor in both studies. This factor accounted for 6 percent of the variance in Wong et al.'s results and 5.2 percent of the variance in the present results.

The primary difference between the results of Wong et al.'s factor analysis and those of the present analysis was that the five DAP-R items which had loaded on the fifth factor (the "Neutral Acceptance" factor) in Wong et al.'s study were split across the fifth and sixth factors in the present study, with items 6, 14, and 24 loading on the fifth factor and items 17 and 30 loading on the sixth factor. Wong et al.'s fifth factor had accounted for 5.7 percent of the variance in their results; in the present study, the fifth and sixth factors accounted for 4.8 percent and 3.9 percent of the variance, respectively. Overall, Wong et al.'s five factors accounted for a total of 66.2 percent of the variance in their results; the six factors in the present study accounted for 60.3 percent of the variance in the results.

Table 3 presents correlation coefficients among the five subscales of the DAP-R as defined by Wong et al. These correlations were compared to the correlations reported by Wong et al. (1994, p. 135) using Fisher's r-to-Z transformation (Hays, 1988, pp. 590-593). Five of the ten intercorrelations differed significantly from those reported by Wong et al.: the correlation between Fear of Death and Neutral Acceptance ($r(374) = -.27$ vs. $r(300) = -.12$; $p < .05$), Fear of Death and Escape Acceptance ($r(378) = -.12$ vs. $r(300) = -.28$; $p < .05$), Death Avoidance and Neutral Acceptance ($r(374) = -.27$ vs. $r(300) = .02$; $p < .001$), Neutral Acceptance and Approach Acceptance ($r(364) = .15$ vs. $r(300) = -.07$ $p < .01$), and Approach Acceptance and Escape Acceptance ($r(369) = .34$ vs. $r(300) = .57$; $p < .001$).

For purposes of comparison, Table 4 presents correlation coefficients among the first four subscales of the DAP-R (as defined by Wong et al., 1994) and the fifth and sixth factors that emerged from the present factor analysis.

Reliability of the DAP-R

The reliability of the DAP-R in the present sample was assessed by examining the internal consistency (Cronbach's alpha) of each of the five sucbscales as defined by Wong et al. (1994) and of the fifth and sixth factors that emerged from the present factor analysis. The alpha coefficients for the five DAP-R subscales were as follows: Fear of Death, .82; Death Avoidance, .87; Approach Acceptance, .91; Escape Acceptance, .81; and Neutral Acceptance, .60. These coefficients were very similar to those obtained by Wong et al. (1994, p. 136), who reported coefficients of .86, .88, .97, .84, and .65, respectively. Thus, four out of the five subscales of the DAP-R appear to have good internal consistency, with the only exception being the Neutral Acceptance subscale. The latter result is not entirely surprising in light of the finding in the present sample (described above) that items on the Neutral Acceptance subscale failed to load on a single factor. The alpha coefficients for the two factors on which these items loaded in the present sample were .69 and .46, respectively.

Table 3. Correlation Coefficients for the DAP-R Subscales (N = 379)

	2	3	4	5
1. Fear of Death	.57***	−.28***	−.12*	−.27***
2. Death Avoidance		−.09	.01	−.27***
3. Approach Acceptance			.34***	.15**
4. Escape Acceptance				.07
5. Neutral Acceptance				

*p < .05
**p < .01
***p < .001

Table 4. Correlation Coefficients for the First Four DAP-R Subscales and Factors 5 and 6 (N = 379)

	5	6
1. Fear of Death	−.34***	−.12*
2. Death Avoidance	−.28***	−.15**
3. Approach Acceptance	.29***	−.01
4. Escape Acceptance	.15**	−.02
5. Factor 5		.19***
6. Factor 6		

*p < .05
**p < .01
***p < .001

Concurrent Validity of the DAP-R

As a means of checking the concurrent validity of the DAP-R in the present sample, correlations between the subscales of the DAP-R (as defined by Wong et al., 1994) and the Frommelt scale were examined. The predicted pattern of results was that scores on the Frommelt scale would be negatively correlated with scores on the two DAP-R subscales that measure negative attitudes toward death (Fear of Death and Death Avoidance) and positively correlated with the three DAP-R subscales that measure positive or neutral attitudes toward death (Approach Acceptance, Escape Acceptance, and Neutral Acceptance). These predictions were based on the rationale that nurses who have positive attitudes toward caring for dying persons (i.e., nurses who score high on the Frommelt scale) would be likely to have positive or neutral attitudes toward death, thus scoring low on the Fear of Death and Death Avoidance subscales and scoring high on the other three DAP-R subscales, and that nurses who have negative attitudes toward caring for

dying persons would show the opposite pattern of results. Four out of the five predicted relationships were observed in the present sample. Scores on the Frommelt scale were significantly negatively correlated with the Fear of Death subscale ($r(357) = -.34, p < .001$) and Death Avoidance subscale ($r(356) = -.37, p < .001$) and positively correlated with the Neutral Acceptance subscale ($r(357) = .22$, $p < .001$) and Approach Acceptance subscale ($r(346) = .21, p < .001$). The only predicted relationship that was not observed in the present sample was that between scores on the Frommelt scale and scores on the Escape Acceptance subscale of the DAP-R; these scales were uncorrelated in the present sample ($r(356) = .03$). Overall, however, the present findings provide some evidence in support of the concurrent validity of the DAP-R.

For purposes of comparison, the correlations between the fifth and sixth factors to emerge from the present analysis and scores on the Frommelt scale were calculated; the fifth factor was significantly positively correlated with scores on the Frommelt scale ($r(362) = .37, p < .001$), but the sixth factor was unrelated to scores on this instrument ($r(361) = .03, p = .57$).

DISCUSSION

The results of the present study partially supported the factor structure of the DAP-R as reported in the initial validation study of this instrument (Wong et al., 1994), in that the first four factors from that study were replicated in the present sample (with only slight differences). Also, the subscales associated with these four factors were found to have good internal consistency in the present study, with internal consistency coefficients very similar to those reported by Wong et al. Thus, the first four subscales of the DAP-R (i.e., Fear of Death, Death Avoidance, Approach Acceptance, and Escape Acceptance) appear to be measuring separate factors and also appear to be fairly reliable. The present study also provided some evidence of the concurrent validity of the DAP-R in terms of the relationships between scores on some of the subscales of this instrument and scores on an instrument measuring attitudes toward caring for dying patients.

The only problematic subscale of the DAP-R is the "Neutral Acceptance" subscale; the present results indicate that this subscale may not be measuring a unitary construct, since the items composing this subscale loaded on two different factors in the present study, and since this subscale exhibited a rather low level of internal consistency in both the initial validation study and in the present study. This raises the question of what the items contained in this subscale are actually measuring. Content analysis of the three items that loaded on the fifth factor (i.e., item 6: "Death should be viewed as a natural, undeniable, and unavoidable event," item 14: "Death is a natural aspect of life"; and item 24: "Death is simply a part of the process of life") suggests that this factor is measuring the extent to which a respondent views death as a natural part of life, whereas the two items that loaded on the sixth factor (i.e., item 17: "I would neither fear death nor welcome it" and

item 30: "Death is neither good nor bad") seem to be measuring a more purely "neutral" attitude toward death.

Thus, the results of the present study suggest that the DAP-R may consist of six rather than five factors, but this conclusion should be viewed as tentative until future factor-analytic studies of the DAP-R provide more data regarding the factor structure of this instrument in other samples. This is particularly true in light of some of the potential limitations of the present study, which include the fact that the sample consisted entirely of nurses, whose responses to the DAP-R may differ systematically from other groups in the general population, and the possibility of volunteer bias in the present results. In the meantime, it appears that researchers and clinicians can use the first four subscales of the DAP-R to assess individuals' attitudes toward death (both positive and negative) with a fair amount of confidence in the reliability and validity of those subscales.

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