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Consistency of near-death experience accounts over two decades: Are reports embellished over time?[☆]

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Summary

Aim: "Near-death experiences," commonly reported after clinical death and resuscitation, may require intervention and, if reliable, may elucidate altered brain functioning under extreme stress. It has been speculated that accounts of near-death experiences are exaggerated over the years. The objective of this study was to test the reliability over two decades of accounts of near-death experiences.

Methods: Seventy-two patients with near-death experience who had completed the NDE scale in the 1980s (63% of the original cohort still alive) completed the scale a second time, without reference to the original scale administration. The primary outcome was differences in NDE scale scores on the two administrations. The secondary outcome was the statistical association between differences in scores and years elapsed between the two administrations.

Results: Mean scores did not change significantly on the total NDE scale, its 4 factors, or its 16 items. Correlation coefficients between scores on the two administrations were significant at $P < 0.001$ for the total NDE scale, for its 4 factors, and for its 16 items. Correlation coefficients between score changes and time elapsed between the two administrations were not significant for the total NDE scale, for its 4 factors, or for its 16 items.

Conclusion: Contrary to expectation, accounts of near-death experiences, and particularly reports of their positive affect, were not embellished over a period of almost two decades. These data support the reliability of near-death experience accounts.

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Introduction

Profound subjective experiences that are reported after resuscitation from clinical death have been described in the medical literature since the 19th

century.^{1,2} They were identified as a discrete syndrome more than a century ago,³ and have been reported more frequently in the past 30 years.^{4,5} Recent research suggests that these “near-death experiences” (NDE) are reported by 12–18% of cardiac arrest survivors.^{6,7} They seem to be more consistent with a normal response to stress than with a pathological disorder.^{8,9} Near-death experiences have been linked to physiological states accompanying the process of dying,^{10,11} and to psychological responses to the perceived threat of dying.^{12,13} Despite questions about their etiology, near-death experiences are important to physicians for two reasons. First, they may be confused with psychopathological states, yet have profoundly different sequelae requiring different therapeutic approaches.^{14,15} Second, clarification of their mechanisms may enhance our understanding of consciousness and its relation to brain function.^{16,17}

Embellishment of near-death experience accounts, if it did occur, would diminish their importance and theoretical challenge. Autobiographical memories are subject to various types of distortion over years,^{18,19} and memories of unusual or traumatic events may be particularly unreliable as a result of emotional influences.^{20,21} It is reasonable, therefore, to question the long-term reliability of memories of near-death experiences,^{22,23} which many describe as the most emotional event of their lives.

The present study was an attempt to document the consistency of near-death experience accounts by administering a quantitative measure of near-death experiences to the same cohort on two occasions about 20 years apart.

Materials and methods

In the early 1980s, the author collected near-death experience accounts from more than a hundred patients who had contacted him to share their stories, as described elsewhere.²⁴ Each person in this volunteer sample cohort completed a questionnaire from which an NDE scale was developed.²⁴

The NDE scale consists of 16 multiple-choice items comprising four factors. The first factor addresses cognitive processes such as accelerated thought processes and a “life review.” The second factor addresses affective processes such as intense feelings of peace and joy. The third factor addresses purportedly paranormal processes such as a sensation of being “out of the body.” The fourth factor addresses experiences of transcendence such as encounters with what are interpreted as religious

figures. The NDE scale has high internal consistency, split-half reliability, 6-month test–retest reliability, and correlation with prior measures of near-death experience.²⁴ Each of its 16 items differentiates independently close brushes with death with and without near-death experiences.²⁵ A recent Rasch rating-scale analysis established that the NDE scale yields a unidimensional measure with interval-scaling properties that differentiates near-death experiences qualitatively and quantitatively from other responses to the threat of death.²⁶

In 2002, the author attempted to recontact by mail the original participants to have them complete the NDE scale again, without reference to the first administration some 20 years ago. I wrote all those participants at their last known address, and sought more current addresses through organizational membership lists, personal contacts, and Internet search engines. Between 2002 and 2005, I collected NDE scale scores from 72 individuals who had last completed this scale in the early 1980s. Those 72 respondents comprised 63% of the 115 in the original sample who were not known to have died.

This study was approved by the University of Virginia Institutional Review Board for the Social and Behavioral Sciences, and all participants provided written informed consent.

Statistical analysis

Two-tailed paired-samples *t*-tests were used to compare NDE scale scores on the first and second administrations, and two-tailed paired-samples Pearson correlation coefficients to assess both the reliability of scale items over time and the association between scale score changes and time elapsed between the two administrations. SPSS Version 13.0 was used to perform all analyses.

Results

The mean age of the 72 participants was 46.9 years (S.D. = 10.1) at the time of the first administration of the NDE scale and 65.9 years (S.D. = 10.0) at the time of the second. The mean number of years elapsed since the near-death experience was 17.7 (S.D. = 14.2) at the time of the first administration of the scale and 36.7 (S.D. = 13.8) at the time of the second. The mean time that had elapsed between the two administrations of the NDE scale was 19.1 years (S.D. = 2.4).

Table 1 presents the mean NDE scale scores on the first and second administrations. The total NDE

Table 1 NDE scale scores, correlations between scores, and correlations between change and time elapsed ($N=72$)

Item	$T=1^a$	$T=2^b$	$t(d.f. = 71)$	P	r_{scores}^c	P_{scores}	$r_{change\ and\ time}^d$	$P_{change\ and\ time}$
Total NDE scale	14.60 ± 6.97	14.24 ± 7.94	0.69	0.49	0.83	<0.001	-0.14	0.24
Cognitive items	3.06 ± 2.18	3.32 ± 2.37	-1.28	0.20	0.71	<0.001	-0.07	0.54
Time distortion	1.47 ± 0.86	1.32 ± 0.85	1.59	0.12	0.54	<0.001	-0.03	0.83
Thought acceleration	0.57 ± 0.82	0.78 ± 0.88	-2.07	0.04	0.49	<0.001	-0.07	0.54
“Life review”	0.35 ± 0.75	0.44 ± 0.77	-1.31	0.20	0.66	<0.001	-0.03	0.78
Sudden understanding	0.67 ± 0.87	0.78 ± 0.92	-0.83	0.41	0.56	<0.001	-0.18	0.14
Affective items	5.06 ± 2.60	4.83 ± 2.85	1.01	0.32	0.77	<0.001	-0.17	0.14
Peace	1.57 ± 0.71	1.53 ± 0.77	0.73	0.47	0.79	<0.001	-0.02	0.89
Joy	1.26 ± 0.84	1.21 ± 0.89	0.78	0.44	0.76	<0.001	-0.21	0.07
Feeling of “cosmic unity”	1.22 ± 0.81	1.04 ± 0.93	1.78	0.08	0.51	<0.001	-0.17	0.15
Light	1.00 ± 0.87	1.06 ± 0.89	-0.65	0.52	0.66	<0.001	-0.06	0.61
Purportedly paranormal experiences	2.85 ± 1.77	2.64 ± 1.88	1.33	0.19	0.73	<0.001	0.05	0.67
Sensory vividness	1.06 ± 0.85	1.00 ± 0.89	0.58	0.57	0.56	<0.001	0.05	0.66
“Extrasensory perception”	0.36 ± 0.72	0.22 ± 0.56	1.80	0.08	0.50	<0.001	-0.03	0.80
“Precognitive visions”	0.17 ± 0.53	0.21 ± 0.53	-0.077	0.44	0.63	<0.001	-0.11	0.35
“Out-of-body experience”	1.26 ± 0.75	1.21 ± 0.82	0.85	0.40	0.76	<0.001	0.23	0.05
Transcendental items	3.65 ± 2.66	3.44 ± 2.76	1.00	0.32	0.79	<0.001	-0.14	0.26
Unfamiliar environment	1.31 ± 0.88	1.15 ± 0.91	1.50	0.14	0.54	<0.001	-0.13	0.27
Unidentified “presence”	0.93 ± 0.95	0.97 ± 0.96	-0.48	0.63	0.70	<0.001	-0.02	0.88
Religious or deceased “spirits”	0.54 ± 0.84	0.56 ± 0.82	-0.18	0.85	0.70	<0.001	-0.17	0.16
Border or “point of no return”	0.88 ± 0.90	0.76 ± 0.86	1.38	0.17	0.70	<0.001	-0.01	0.96

^a Mean NDE scale score ± S.D. at first administration.

^b Mean NDE scale score ± S.D. at second administration.

^c Pearson correlation coefficient between NDE scale scores at first and second administration.

^d Pearson correlation coefficient between change in NDE scale scores and time elapsed between two administrations.

scale score declined nonsignificantly (0.36 point) between the two administrations. The score on the cognitive factor rose 0.26 point, while scores on the other three factors declined, on the affective factor by 0.22 point, the paranormal factor by 0.21 point, and the transcendental factor by 0.21 point. Nine of the 16 individual items were reported less frequently at the second administration of the NDE scale, and seven of the 16 individual items were reported more frequently at the second administration. Paired-samples *t*-tests did not reveal statistically significant differences on any of the individual 16 items, any of the 4 factors, or on the total NDE scale score.

Table 1 also presents the two-tailed paired-samples Pearson correlation coefficients between the two administrations. The test–retest reliability over the two-decade period was highly significant ($P < 0.001$) for each of the 16 individual items, for each of the 4 factors, and for the NDE scale as a whole. Table 1 also presents the Pearson correlation coefficients between absolute changes in NDE scale scores and time elapsed between the two administrations of the scale. Changes in the total NDE scale score were not significantly associated with the elapsed time interval, nor were changes among any of the 4 factors, nor any of the 16 individual items.

Discussion

This study documented the consistency in memories of near-death experiences over a period of two decades. Scores on the NDE scale administered in the 1980s and again to the same individuals an average of more than 19 years later showed no significant differences. Scores were statistically unchanged over this two-decade period on the total NDE scale, on each of its four factors, and on each of its 16 individual items. Contrary to speculations that memories of near-death experiences become more pleasant over time,²⁷ there was a nonsignificant decline in reports of a positive affect.

This was the first study to assess the reliability of near-death experience reports over many years using a quantitative measure. Its conclusions are limited by its reliance on participants' reports of what they experienced. We cannot know how representative this sample was of all near-death experiencers. These participants had not been exposed to the NDE scale during the two decades between the first and second administration. It is of course possible that some of these respondents had reviewed their responses in the interim. However, not a single participant expressed any

recognition, when sent the NDE scale a second time, that he or she had completed that same questionnaire many years ago. Furthermore, it is conceivable that participants' memories of their near-death experiences had been embellished prior to the first administration of the NDE scale, but then stabilized and underwent no further change over the subsequent two decades. It would be useful to explore that possibility through a prospective study in which reports are collected immediately after a near-death experience and then again 20 years later.

These findings corroborate previous studies that have shown no significant effect on near-death experience accounts of the passage of time. Most of those earlier studies were cross-sectional analyses comparing cases that were reported at differing time intervals after the occurrence of the experience.^{26,28} There have been only two previous longitudinal studies of the consistency of near-death experience accounts, describing the test–retest reliability over shorter periods of 2–6 months²⁴ and 2–8 years.⁷ Neither of those studies found any significant change in the details of the experience over time.

Conclusion

These findings contradict the expectation that accounts of near-death experiences are embellished over time. This evidence that accounts of near-death experiences, and particularly reports of their positive effect, are reliable over a period of two decades supports the validity of studies of such experiences that had occurred years their investigation. Memories of near-death experiences appear to be more stable than memories of other traumatic events. Their further exploration may help us understand persistent physiological and psychological responses to extreme threats.

Conflict of interest

The author has no conflict of interest related to this manuscript.

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