Getting Comfortable With Near Death Experiences

An Overview of Near-Death Experiences

by Bruce Greyson, MD

Near-death experiences (NDEs), profound experiences reported by some people who survive close brushes with death, are important to clinicians because they often lead to pervasive changes in attitudes and behavior; because they may be confused with psychopathological states; and because they may enhance our understanding of consciousness. Proposed psychological and physiological explanations lack empirical support and fail to explain NDEs, which pose a challenge to current models of the mind-brain relationship.

Introduction

When some people come close to death, they go through a profound experience that may include a sense of leaving the body and entering some other realm or dimension, transcending the ordinary confines of time and space. Although these events had been identified as a discrete syndrome as early as 1892, it was not until 1975 that Moody introduced the term near-death experiences (NDEs) for these phenomena. Moody described characteristic features commonly reported by survivors, including ineffability, overwhelming feelings of peace, seeing a tunnel, a sensation of being out of the body, meeting nonphysical beings including a “Being of Light,” reviewing one’s life, a border or point of no return, and coming back to life with marked changes in attitudes and with knowledge not acquired through normal perception. A recent review of the accumulated findings from thirty years of research since Moody’s seminal work has essentially confirmed his original description. An analysis of the incidence of NDEs among critically ill patients as documented in nine prospective studies in four countries yielded an average estimate of 17%.
of NDEs among critically ill patients as documented in nine prospective studies in four countries yielded an average estimate of 17%. With advancements in medical resuscitation techniques, the frequency of NDEs has increased, and thus about 9 million people in the United States alone have reported this kind of experience. In the last 30 years, the near-death phenomenon has been investigated extensively. Near-death experiences are important to physicians for three reasons. First, NDE precipitate pervasive and durable changes in beliefs, attitudes, and values. Second, they may be confused with psychopathological states, yet have profoundly different sequelae requiring different therapeutic approaches. Third, clarification of their mechanisms may enhance our understanding of consciousness and its relation to brain function.

One of the problems with research into NDEs is that, with a few notable exceptions, almost all NDE research has been retrospective, raising the question of the reliability of the experiencer’s memories. Autobiographical memories are subject to distortion over years, and memories of unusual or traumatic events may be particularly unreliable as a result of emotional influences. However, memories of NDEs are experienced as “more real” than memories of other events, and memories of NDEs have been shown to be unchanged over a period of 20 years.

Explanatory Models

Studies of near-death experiencers have shown them collectively to be psychologically healthy individuals who do not differ from comparison groups in age, gender, race, religion, religiosity, mental health, intelligence, neuroticism, extroversion, trait and state anxiety, or relevant Rorschach measures.

Expectancy

A plausible hypothesis postulates that near-death experiences are products of the imagination, constructed from one’s personal and cultural expectations, to protect oneself from facing the threat of death. Comparisons of NDE accounts from different cultures suggest that prior beliefs have some influence on the kind of experience a person will report following a close brush with death.

However, individuals often report experiences that conflict with their specific religious and personal expectations of death; people who had no prior knowledge about NDEs describe the same kinds of experiences as do people who are quite familiar with the phenomenon, and the knowledge individuals had about NDEs previously does not seem to influence the details of their own experiences; experiences that were reported before 1975, when Moody’s first book coined the term NDE and made it a well-known phenomenon, do not differ from those that were reported since that date; and young children, who are less likely to have developed expectations about death, report NDEs with features similar to those of adults.

Cross-cultural differences in NDE accounts suggest that it is not the core experience that differs but the ways in which people interpret what they have experienced in terms of the images, concepts, and symbols available to them.
Birth Memories

Some authors have suggested that NDEs, with their dark tunnel, bright light, and going to another realm, could represent memories of one’s birth. However, newborns lack the visual acuity, spatial stability of their visual images, mental alertness, and cortical coding capacity to register memories of the birth experience, and reports of out-of-body experiences (OBEs) and passing through a tunnel to another realm are equally common among persons born by Caesarean section and those born by normal vaginal delivery.14

Altered Blood Gases

A common assumption has been that anoxia or hypoxia, as a common final pathway to brain death, must be implicated in NDEs. However, NDEs occur without anoxia or hypoxia, as in non-life-threatening illnesses and near-accidents, and hypoxia or anoxia generally produces idiosyncratic, frightening hallucinations, and leads to agitation and belligerence, quite unlike the peaceful NDE with consistent, universal features. Furthermore, studies of people near death have shown that those who have NDEs have oxygen levels the same as, or higher than, those who do not have NDEs.15 Likewise, some authors have suggested that hypercarbia may contribute to NDEs; but several studies have reported carbon dioxide levels to be normal or below normal during NDEs.15

REM Intrusion

NDEs have been associated with intrusion into waking consciousness of cognition typical of rapid eye movement (REM) sleep. However, the REM intrusion hypothesis is contradicted by the common occurrence of NDEs under conditions that inhibit REM, such as general anesthesia,14 and by the finding of reduced REM in near-death experiencers.16

Toxic or Metabolic Hallucinations

NDEs have been dismissed as elaborate hallucinations produced either by medications given to dying patients or by metabolic disturbances or brain malfunctions as a person approaches death. However, many NDEs are recounted by individuals who had no metabolic or organic malfunctions that might have caused hallucinations, and patients who receive medications in fact report fewer NDEs than do patients who receive no medication.14

Furthermore, organic brain malfunctions generally produce clouded thinking, irritability, fear, belligerence, and idiosyncratic visions, quite unlike the exceptionally clear thinking, peacefulness, calmness, and predictable content that typify the NDE. Visions in patients with delirium are generally of living persons, whereas those of patients with a clear sensorium as they approached death are almost invariably of deceased persons. Patients who were febrile or anoxic when near death report fewer NDEs and less elaborate experiences than do patients who remain drug-free and are neither febrile nor anoxic. That is, drug- or metabolically-induced delirium, rather than causing NDEs, in fact inhibits them from occurring or being recalled.14

Neurochemistry

NDEs have been speculatively attributed to a number of neurotransmitters in the brain, most frequently endorphins or other endogenous opioids, a putative ketamine-like endogenous neuroprotective agent acting on N-methyl-D-aspartate (NMDA) receptors, serotonin, adrenaline, vasopressin, and glutamate. These speculations are based on hypothetical endogenous chemicals or effects that have not been shown to exist, and are not supported by any empirical data.17

Neuroanatomy

NDEs have also been speculatively linked to a number of anatomic locations in the brain, including the frontal lobe attention area, the parietal lobe orientation area, the thalamus, the hypothalamus, the amygdala, the hippocampus, Reissner’s fiber in the central canal of the spinal cord, and most often the right temporal lobe, based on purported similarity of NDEs to temporal lobe seizure phenomena. However, NDE-like phenomena are almost never seen in temporal lobe seizures, and electrical stimulation of the temporal lobes typically elicits fragmented bits of music, isolated and repetitive scenes that seemed familiar, hearing voices, experiencing fear or other negative emotions, or seeing bizarre, dream-like imagery, in addition to a wide range of somatic sensations that are never reported in NDEs.17

These putative neurological mechanisms, for which there is little if any empirical evidence, may suggest brain pathways through which NDEs are expressed or interpreted, but do not necessarily imply causal mechanisms.17
Effects of Near-Death Experiences

Positive Effects

Regardless of their cause, NDEs can permanently and dramatically alter the individual experiencer’s attitudes, beliefs, and values. The literature on the aftereffects of NDEs has focused on the beneficial personal transformations that often follow. A recent review of research into the characteristic changes following NDEs found the most commonly reported to be loss of fear of death; strengthened belief in life after death; feeling specially favored by God; a new sense of purpose or mission; heightened self-esteem; increased compassion and love for others; lessened concern for material gain, recognition, or status; greater desire to serve others; increased ability to express feelings; greater appreciation of, and zest for, life; increased focus on the present; deeper religious faith or heightened spirituality; search for knowledge; and greater appreciation for nature. These aftereffects have been corroborated by interviews with near-death experiencers’ significant others and by long-term longitudinal studies.

Negative Effects

Although NDErs sometimes feel distress if the NDE conflicts with their previously held beliefs and attitudes, the emphasis in the popular media on the positive benefits of NDEs inhibits those who are having problems from seeking help. Sometimes people who have had NDEs may doubt their sanity; yet they are often afraid of rejection or ridicule if they discuss this fear with friends or professionals. Sometimes NDErs do receive negative reactions from professionals when they describe their
The Division of Perceptual Studies

The Division of Perceptual Studies at the University of Virginia Health System is a research unit within the Department of Psychiatry and Neurobehavioral Sciences at the University of Virginia Health System.

It was founded 45 years ago under the leadership of the late Ian Stevenson, after an initial endowment from the late Chester F. Carlson, inventor of xerography. The Division’s main purpose, and the raison d’être for its foundation, is the scientific, empirical investigation of phenomena that challenge currently accepted models of the nature of mind and consciousness and their interactions with the physical world. Despite widespread accounts and popular interest in these phenomena, there is a paucity of careful scientific research into their occurrence and processes.

The Division’s researchers are dedicated to the use of scientific methodologies in their investigation of a range of such phenomena that so far have defied adequate explanation. Examples of such phenomena include near-death experiences, out-of-body experiences, claimed memories of previous lives, apparitions, deathbed visions, accounts of apparent spontaneous paranormal phenomena, and laboratory experiments on apparent paranormal phenomena.

The Division is the oldest university-based research unit in the world established specifically for the empirical study of the relationships of mind to brain. Although it is part of the University of Virginia, its research is not funded by state money but is supported entirely by grants from outside foundations and institutions and from donations from private individuals.

The Division maintains the Ian Stevenson Memorial Library, a specialized library of scholarly books and journals, which is a resource affiliate of the Library of Congress and the National Library of Medicine; and the Ray Westphal Neuroimaging Laboratory, a state-of-the-art EEG facility with an electromagnetically and acoustically shielded experimental chamber. Although the Division has focused its resources on research rather than education, it does provide summer research fellowships for medical students and research electives for both medical students and psychiatric residents, and has hosted a post-doctoral fellowship.

The director of the Division is Bruce Greyson, MD. Current faculty researchers include Carlos Alvarado, PhD, Ross Dunseath, PhD, Edward Kelly, PhD, Emily Kelly, PhD, and Jim Tucker, MD.
mystical consciousness typically seen in NDEs; and
depersonalization differs from NDEs in its age and
gender distribution, unpleasant and dreamlike quality,
and separation of the observing self from the functioning
self.\(^7\)

**Dissociation**

NDEs have been compared with dissociation, the
separation of thoughts, feelings, or experiences from
the normal stream of consciousness and memory that is
an adaptive response to trauma common in otherwise
normal people. Many NDEs share with dissociation
the disconnection of perception, cognition, emotion,
and identity from the mainstream of the individual’s
conscious awareness. NDErs may have a tendency to
dissociate in response to catastrophic events, though
not in response to everyday stressors. Symptoms of
dissociation among near-death experiencers, though
higher than among non-experiencers, are still within
the range of the normal population and far below that
seen in clinical dissociative disorders. The dissociative
symptom profile of NDErs is suggestive of a normal
psychophysiological response to stress, rather than a
pathological type of dissociation or a manifestation of
dissociative disorder.\(^7\)

**Posttraumatic Stress Disorder**

NDEs may lead to symptoms of posttraumatic stress
disorder (PTSD) like recurrent, intrusive recollections
of the event, recurrent distressing dreams of the event,
diminished interest in previously important activities,
estrangement from others, and a sense of foreshortened
future. The incidence of PTSD symptoms among NDErs
is higher than that among survivors of close brushes
with death without NDEs, although it is within the
normal range and far below that seen in clinical PTSD.
The NDErs’ profile of moderate elevation of intrusive
thoughts, images, feelings, and dreams, but no elevation
of avoidant psychic numbing, behavioral inhibition,
or counterphobic activities, is typical of a nonspecific
response to catastrophic stress rather than of PTSD.\(^7\)

**Other Pathological Conditions**

NDEs differ from autoscopy, seen in a variety of
brain lesions, in that the observing self or point of
perception in NDEs is experienced as outside the body,
from which perspective the subject sees his or her own
inactive physical body, rather than seeing an apparitional
“double” (or more typically a portion of one) from the
perspective of the physical body, as in autoscopy. NDEs
are more complex than the mental imagery induced
by drugs, and more often endowed with personal
meaning, and often occur in the absence of psychoactive
substances. NDEs can be differentiated from brief
psychotic disorders by their acute onset following a
stressful precipitant, and by the experiencers’ good
premorbid functioning and positive exploratory attitude
toward the experience.\(^7\)

**NDEs in Psychiatric Patients**

In a large sample of patients in a psychiatric
outpatient clinic, among those patients who had come
close to death, scores on every measure of psychological
distress were lower for those who reported NDEs than
for those who did not. The percent of patients in this
study reporting near-death experiences was comparable
to that found in the general population, suggesting that mental illness itself is not associated with near-death experiences, but in fact NDEs may mitigate the distress of mental illness.20

Near-Death Experiences & Consciousness

Some of the phenomenological features of NDEs are difficult to explain in terms of our current understanding of psychological or physiological processes. For example, experiencers sometimes report having viewed their bodies from a different point in space and are able to describe accurately what was going on around them while they were ostensibly unconscious;21 or that they perceived corroborated events occurring at a distance outside the range of their sense organs, including blind individuals who describe accurate visual perceptions during their NDEs.22

Furthermore, some NDErs report having encountered deceased relatives and friends, and some child NDErs describe meeting persons whom they did not know at the time of the NDE but later identified as deceased relatives from family portraits they had never seen before. Other experiencers report having encountered recently deceased person of whose death they had no knowledge, making expectation a highly implausible explanation.23 These aspects of NDEs present us with data that are difficult to explain by current physiological or psychological models or by cultural or religious expectations.22

These features and the occurrence of heightened mental functioning when the brain is severely impaired, such as under general anesthesia and in cardiac arrest, challenge the common assumption in neuroscience that consciousness is solely the product of brain processes, or that mind is merely the product of brain processes,24

References
23. Greyson B. Seeing dead people not known to have died. Anthropology & Humanism 2010;35:159-171.

Disclosure
None reported.