

# Three cases of near death experience: Is it physiology, physics or philosophy?

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## KEY WORDS

Out of body experience  
Transcendental  
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## ABSTRACT

**Background:** Near-Death experience (NDE) following a severe head injury, critical illness, coma, and suicidal attempt has been reported. **Purpose:** Purpose of study was to examine why a few patients report NDE after survival, do cultural and socio-demographic factors may play a role? **Methods:** The details of 3 cases of patients who reported near-death experience (NDE), is presented here. Several theories regarding the reasons, of the various components of the experiences, are discussed with a brief review of literature. **Results:** All the three patients report the out of body experience OBE. All the three patients reported to remember initially the events that took place during this time, but after some time all three patients could not recall exactly the events that had happened. **Conclusion:** Whether these are only hallucinations or a proof of 'after life' will remain debatable until more data is communicated.

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## Introduction

*'Up from the earth's centre through the seventh gate  
I rose, and on the throne of Saturn sate,  
And many Knots unravel'd by the road;  
But not the knot of human death and fate.  
Rubaiyat (Omar Khayyam/E. Fitz Gerald-1859)*

Near-Death experience (NDE) following a severe head injury, critical illness, coma, and suicidal attempt has been reported. Why a few patients report NDE after survival is debatable though cultural and socio-demographic factors may play a role. In this paper we summarize the features reported in different stages of NDE by 3 patients who were seen by the physicians during hospitalization and in followup visits with family.

## Methods

We report subjective accounts of NDE in 3 patients of age 30, 22 and 4 years respectively who survived a life-threatening condition. A period in which they were unconscious was also noted and considered to be NDE. This was done after recovery from Coma. Interviews were done with the patient and family members about the details of the experience. Ethical approval was obtained for the study.

## Results

### Patient 1

A 30 year postgraduate, Hindu, married woman with a 5 month old baby, with severe head injury was brought to emergency in Glasgow Coma Scale Score of E1 V1 M2. She was operated for acute subdural hematoma of left side. She was on ventilator for 8 days and was unconscious for around two months. After this she made gradual recovery over 1 year. During this period of unconsciousness she described that she was in a brilliant light in which she floated. She then went to 'heaven' where there were a pantheon of Gods with 'hierarchy'. There was the trinity of Brahma, Vishnu and Shiva but even they were in hierarchy 'junior' to 'Om' an apparition of light. She could recall what had been earlier discussed between doctors about technical

matters regarding ventilator, endotracheal tube and tracheostomy. Though she was reluctant she was then 'sent back' by 'Om'. Over the next 7 years she has slowly forgotten most of her description but her belief has persisted.

### Patient 2

A 22-year-old graduate, Hindu male suffering from peritonitis had an anaphylactic reaction leading to cardiac arrest for around 10 minutes. He was resuscitated and recovered from this period of unconsciousness in about 36 hours and from sepsis in about 3 weeks. During the unconscious period he described travelling in a tunnel of white light which he was rushing through. He felt a sense of absolute peace and calm during the arrest. He also had an out of body experience (OBE) when he observed with detachment from outside, the rush of medics to resuscitate him. After few months, he could not recall the details other than the light.

### Patient 3

A 4-year-old male, Hindu child was brought in hypotensive shock to emergency secondary to gastroenteritis and dehydration. He was pulseless and unconscious. Over a period of around one week his sensorium improved. After extubation he started describing his experience of being in silvery white clouds with 'time dilatation' or expansion i.e. he felt he was there for months although his altered sensorium was for about a week. Subsequently he forgot most of the experience. The response of family members was initially neutral and advised the child not to dwell upon it.

## Discussion

NDE elements include awareness of being dead. OBE in which a person experiences the world from outside the physical body may include moving through a tunnel, communication with light, observation of celestial landscape, meeting with deceased persons, life review and presence of border.<sup>1,2</sup>

Clinical death is preceded by insufficient blood supply to the brain because of inadequate blood circulation, breathing, or

both. If, in this situation, resuscitation is not started within minutes, irreparable damage occurs to the brain and the patient will die. In 1980, Ring had proposed 5 stages: peace and contentment, detachment from physical body, entering a transitional region of darkness, seeing a brilliant light and entering through the light into another realm of existence.<sup>1</sup>

Sabom had classified NDE into 3 types: out-of-body; transcendental involving passage of consciousness into a foreign dimension and combined experience.<sup>3</sup> NDE survivors have also reported viewing resuscitation efforts from outside, meeting a 'being of light' who helped them evaluate their lives and finally deciding to return to life rather than go into the bliss of death.<sup>4</sup> Vision of Christ and Yama (the God of death in Hindu Pantheon) have also been reported.<sup>5</sup>

Cognitive processes consistent with near death experiences and resuscitation details from the period of cardiac arrest has been reported by 10-20% of cardiac arrest survivors.<sup>6,7</sup> Similarly, accounts of children having near death experiences similar to adult have been reported in those who survived cardiopulmonary arrests or coma associated with trauma, hyperosmolar states, or drowning.<sup>8</sup> A similar experience has been reported by a woman who had undergone brain surgery during the period of flat EEG.<sup>2</sup> In cardiac arrest within seconds from the onset of syncope, the EEG usually becomes flat.<sup>2</sup>

Survivors of NDE have reportedly heard conversations and observed actions of people around them during the time of their comatose state.<sup>9</sup> Furthermore, blind people describing veridical perception during out-of-body experiences in NDE has been reported.<sup>2</sup> Similar experiences though fragmentary can be induced through electrical stimulation of temporal lobe during epilepsy surgery, hypercarbia, cerebral hypoxia as in fighter pilots or as in hyperventilation followed by Valsalva manoeuvre.<sup>2</sup>

Penfield had reported complex hallucinations induced by stimulation of temporal cortex which are perceived as memories by the patient.<sup>10</sup> LSD effects, Ketamine induced experiences from NMDA receptor blockade and the role of endorphin, serotonin and enkephalin are also known.<sup>2,9,11,12</sup>

Although there are neuropsychological, neurochemical or neurohumoral hypotheses about NDE, yet its reported to be a non-pathological experience that involves the psychological processes of dissociation as a response to trauma.<sup>7</sup> Depersonalization has also been suggested as a possible explanation in the face of danger.<sup>13</sup> However, in absence of danger during cerebral ischemia of syncope occasional pleasant feelings and feelings of detachment have been reported.<sup>14</sup>

The reward system could influence the feelings of rapture or peace often reported in NDE. Visual activity promoted by REM mechanisms during retinal or temporo occipital ischemia could lead to the 'light' of NDE.<sup>14</sup> Some NDEs are similar to REM intrusion states. The REM promoting cholinergic PPT (pedunculo pontine) and LDT (latero dorsal tegmental) pathways are important in promoting reward behaviour.<sup>14</sup> Though NDEs lack the characteristics of dreams, but REM intrusion during danger provides mechanism for limbic and paralimbic structures underlying transcendental and paranormal qualities of NDE.<sup>15</sup>

Other theories of NDE include spiritual theories which presume that consciousness has an independent existence with a belief in after life<sup>16</sup> or that NDE could be described as birth memories.<sup>17</sup> Yet cultural beliefs<sup>18</sup> and expectations<sup>9</sup> modify the

accounts of NDE. Blackmore described that sometimes mind can acquire a mental model of reality assumed upon imagery and memory instead of sensory impressions.<sup>19</sup> Plato and other philosophers have proposed many explanations regarding the relationship between perception and reality. Moreover, Darwinian natural selection need not favor veridical perceptions as what matters in evolution is utility and the effects of selection on sensory perception needs study.<sup>20</sup> According to Fish, a mental state that may be intrinsically quite different from a veridical perception might come to be mistaken for so, and hence gets the status of a hallucination.<sup>21</sup> Accounts of death bed visions have been consistent with the interpretation as comforting hallucinations with contextual variations.<sup>22</sup> Other studies question the assertion that patients were actually clinically dead and emphasize differences in EEG and variability in brain of each individual.<sup>23,24</sup> These questions are also pondered by people involved in research in noetic science. However, it gets intriguing when, 'mathematical models' of 'parallel universe' in quantum physics mimic 'experiences' of these patients.<sup>25</sup>

In India authors have reported near-death experiences in 16 cases in north,<sup>18</sup> and 13 in south<sup>26</sup> with some features appearing culture bound.<sup>18,27</sup> Other studies reported features of NDE in 10 patients<sup>5</sup> who were in a life threatening illness, some of whom were given emergency life sustaining procedures.<sup>5,28</sup> Other researchers also have documented observations of near-death experiences in India.<sup>29</sup>

It is beyond the scope of this article to discuss the immense amount of similar literature in Hindu scriptures, like Mahabharat or the Upanishads. Physicians caring for patients who are dying may need to respond to many questions and also reactions to impending death.<sup>30</sup> Many patients appear to be permanently changed by an NDE which cannot be ignored.<sup>31</sup>

## Conclusion

Larger studies may facilitate communication regarding expression of personal memories during the critical period. The basis of explanation could encompass psychological to neurophysiological mechanism, keeping in mind the cultural context or ethos<sup>32</sup> and age groups such as children.<sup>33</sup> Whether these are only hallucinations or a proof of 'after life' will remain debatable until more data is communicable.

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