


Recalled Experience of Death: transcending the cerebrocentric model of consciousness

Rememoração da Experiência de Morte: transcendendo o modelo cerebrocêntrico da consciência (abstract: p. 17)

Rememoración de la Experiencia de Muerte: trascendiendo el modelo cerebrocéntrico de la conciencia (resumen: p. 17)

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To explore the scientific approach to Recalled Experience of Death (RED) and correlate it with the philosophical foundations of Family and Community Medicine to expand the understanding of the human consciousness. Non-systematic review on PubMed database for relevant "prospective studies" on "near-death experience". Five prospective studies documented RED phenomenon occurrences during clinical death. RED-studies strengthen an organismic model of existence and challenge consciousness concept as epiphenomenon of brain activities. This prompts a new understanding of mind-brain relationship inspired by quantum mechanics unified informational field, i.e., consciousness as non-local. This knowledge can help healthcare professionals in dealing with patients with existential problems as in mental health, palliative care, and spiritual issues. RED-studies epitomise a pre-paradigmatic stage in the construction of a new concept of human consciousness in relation to the brain.

Keywords: Spirituality. Conscience. Near-death experience. Epistemology. Family practice.



Introduction

The Near-Death Experience (NDE) is a subjective experience of consciousness expansion in moments physiologically close to death. NDE is described in secular and religious texts from different cultures¹. The advent and institution of cardiopulmonary resuscitation (CPR) has produced remarkable scientific interest on this subject, as reports on NDE have increased. Similar phenomena of consciousness expansion have also been reported in other contexts: hypovolemic shock, meditative states, deep depression, near drowning, isolation, and effects of psychedelic substances¹. Thus, NDE reports, possibly due to lack of specific terminology, have begun to encompass other situations, not necessarily resulting from clinical death itself. This has contributed to a comprehensive definition, challenging studies and research on NDE. In 2022, Parnia et al.², have proposed a new term denominated Recalled Experience of Death (RED), closer to authentic-NDE or classic-NDE, retaining the specificity in relation to clinical death.

This article aims entails, firstly, to present the new terminology proposed by leading researchers of consciousness expansion in relation to death. Secondly, to highlight the centrality of clinical death as a preferred consciousness research model to challenge the prevailing concept that consciousness is a complex emergent property of the brain. Thirdly, to demonstrate that RED studies provide empirical foundations for the organismic paradigm of Family and Community Medicine (FCM). Finally, to illustrate that understanding of consciousness as non-local can have practical implications to healthcare professionals in dealing with specific clinical contexts.

Recalled Experience of Death (RED)

In 2022, Parnia et al.², have proposed “guidelines and standards for the study of death and recalled experiences of death”. This is a multidisciplinary consensus that guides future research of “transcendent experiences in relation to an encounter with death” (p. 3). RED has been defined “as a specific cognitive and emotional experience that occurs during a period of LOC [loss of consciousness] in relation to a life-threatening event, including cardiac arrest”² (p. 4). This definition re-establishes primacy of clinical death as the phenomenon-inducing factor, since death would be inevitable if intensive care interventions were not implemented to avoid it³. The loss of consciousness precipitated by the imminence of death by a severe event/illness and the absence of coma-related experiences, (dreams, delusions, and hallucinations) underpins the proposed terminology. RED is a paradoxical lucidity comprising a heightened sense of consciousness perception and well-structured thought processes, associated with the absence of external/visible signs of consciousness². For instance, survivors of cardiac arrest (CA) consistently describe a unique and universal cognitive state: a specific set of memories, including conscious mental activity, in their encounter with death (Frame 1). Additionally, other aspects forge the new terminology: sense of transcendence, ineffability, and positive transformative effects in relation to the meaning/purpose of life².

**Frame 1.** RED themes and narratives².

RED themes	Narratives
Separation	"I left my body...I remember being in the hospital room and realising that I was not in my body." "I remember leaving my body and rising up to the ceiling of the room."
Heading to a "destination."	"I began rising... I continued [moving] for some time before I became aware of a small bright light in the distance in the direction I was headed."
Reliving the recording of life: actions and intentions matter.	"[In my life review] I was able to re-experience myself in all events in my life." "I could examine [my experiences] from multiple perspectives, such as the people they affected." "Many events in my life I experienced, but not from how I remembered it, but from the point of view, I experienced it from how the people...experienced it around me."
"Home" again.	"The traveling began to slow, and I had a sense that I was arriving somewhere." "I knew I was home."
The return.	"At one point, [I was] 'told' I wasn't allowed to pass yet and had to 'go back'." "I wanted to stay in the world of love, peace, and light, but they reminded me of my responsibilities back."
Reported effects after the experience.	"This experience has changed my life and my thinking. I am no longer afraid of dying, as I have experienced it once." "I have been much more mindful of others. It is easier for me to put myself in other people's shoes. It is easier for me to act out of love and compassion. However, it's still something I put work in."

Source: Adapted from Parnia et al².

In Frame 1, "Separation" includes visual/auditory perceptions, associated with recollection of actual verifiable real events at the time of CA. Parnia et al.², have proposed a new nomenclature for this phenomenon called External Visual Awareness (EVA). This experience "reflects a specific and lucid state of visual (with/without auditory) awareness of one's own body and its surroundings [...] paradoxically perceived through an external view of oneself"²² (p. 14). The term EVA is more specific than the commonly used Out-of-Body Experience (OBE), since other RED experiences also occur outside the body, but are not related to the resuscitation environment, therefore not easily verifiable (Frame1).

Pathophysiology of clinical death

RED-Prospective studies of CA demonstrate that all patients included are clinically dead - period of unconsciousness where patients' heartbeat, breathing, and blood pressure are absent. CPR is needed within the shortest period of time (5-10 minutes), otherwise brain damage may be irreversible⁴. Thus, CA patients are proxy-models of the first stages of the death process by: (1) Absence of brain's cortical function, based on Glasgow Scale, i.e., disappearance of verbal, motor, and ocular responses; (2)



Absence of brainstem reflexes, e.g., pharyngeal or gag reflex, corneal/pupillary reflexes; and (3) Absence of functioning breathing centre, close to the brain stem⁴. These clinical findings demonstrate absence of coordinated brain function.

The Systolic Blood Pressure (SBP) rises to values close to 60-80mmHg with the initiation of timely CPR. However, these values are insufficient to guarantee good cell perfusion. With minimum SBP values, the mean arterial pressure (MAP) decreases and, consequently, cerebral perfusion pressure reduces as it is directly related to MAP. Thus, brain damage occurs due to reduced supply of oxygen and glucose to brain cells⁵.

Studies of automatic defibrillator implants in the heart allow for evaluation of brain activities by inducing a CA to test the defibrillator. In this scenario, the electroencephalogram (EEG) reveals an isoelectric trace (flat line) on average 15 seconds after CA, i.e. brain activity inactivates after approximately 15 seconds in CA⁶.

Thoughts elaboration occurs in several areas of cerebral cortex and not just in a specific region. A globally disordered/dysfunctional brain does not produce lucid thought processes with memory retention, as memory loss is the most sensitive way to capture reduction in brain function. Thus, the intensity of brain injury is proportional to the severity of amnesia. Clinically, any reduction in cerebral blood flow leads to impaired attention and dysfunctional brain coordination⁷. Nonetheless, RED occurs when brain activity is extremely debilitated. It would not be possible, therefore, for a dying brain to maintain and form memories with such lucidity and complexity as documented in RED. Researchers have implicated RED with brain intermediate metabolites such hypoxia, hypercarbia, etc⁸. Nevertheless, data from high-quality studies is needed to substantiate such hypotheses².

Methods

A non-systematic literature review was carried out. As intervention studies are not possible, observational studies are the gold standard on the NDE phenomenon. Therefore, prospective studies on NDE during CA in-hospital settings were sought.

The terms “Prospective Studies” and “Near-Death-Experience” were searched on 02/05/2024 at 14:44 hours on PUBMED, without date limit (Frame 2).

Frame 2. Mesh terms: “prospective studies” and “near-death-experience.”

(cohort studies[mesh:noexp] OR longitudinal studies[mesh:noexp] OR follow-up studies[mesh:noexp] OR prospective studies[mesh:noexp] OR cohort[TIAB] OR longitudinal[TIAB] OR prospective[TIAB]) AND (“Near-Death Experience” OR (Near-Death Experiences [tiab]) OR (Near Death Experience [tiab]) OR (Near Death Experiences [tiab]) OR (out of body experience [tiab]) OR (out of body experiences [tiab]) OR (death[ti] and experience[ti]) OR (death[ti] and experiences[ti]))

Source: elaborated by the authors.

The initial search resulted in 53 articles, of which 48 did not meet the inclusion criteria. Based on titles and abstracts these 48 articles were excluded because they covered a variety of unsuitable topics (Figure 1).

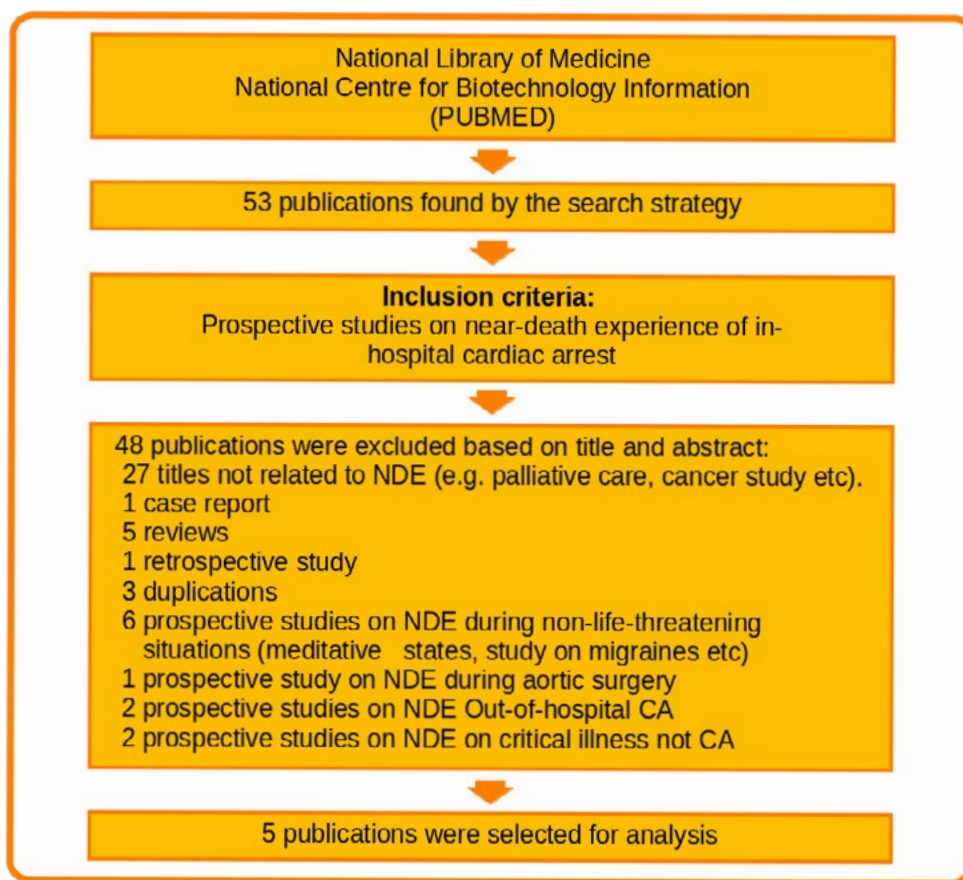


Figure 1. Study selection process.

Source: elaborated by the authors

The five prospective studies included in the analysis were published between 2001-2023 (Frame 3).

Frame 3. Five selected prospective studies.

Author	Parnia et al. ⁹	Lommel et al. ¹	Parnia et al. ¹⁰	Sterz et al. ¹¹	Parnia et al. ¹²
Year	2001	2001	2014	2023	2023
Article	A qualitative and quantitative study of the incidence, features, and aetiology of near-death experiences in cardiac arrest survivors.	Near-death experience in survivors of cardiac arrest: a prospective study in the Netherlands.	AWARE—AWAREness during REsuscitation—A prospective study.	Lapses of the Heart: Frequency and Subjective Salience of Impressions Reported by Patients after Cardiac Arrest.	AWAREness during REsuscitation - II: A multi-center study of consciousness and awareness in cardiac arrest.
Duration	1 year	8 years	4 years	7 years	5 years
Research centre	Unicentre	Multicentre	Multicentre	Unicentre	Multicentre
EVA reports	-	Witness verified EVA	Witness verified EVA	-	-
Studies' highlight	Objects with specific images were allocated at the top of the shelves (only people with EVA experience could observe them).	Control group with statistical significance.	Objects with specific images were allocated at the top of the shelves (only people with EVA experience could observe them).	Notebook PC positioned above an emergency bed, facing the ceiling, displaying images selected randomly from a pool.	Use of EEG* and rSO2 for monitoring into CPR during in-hospital CA.

*Electroencephalogram

Source: elaborated by the authors.

Results

The selected prospective studies illustrate the scope and importance of RED research. One of the RED-research challenges have been the documentation of EVA events. Frame 3 shows that only Van Lommel et al¹. and Parnia et al¹⁰. achieved this objective. Thus, these two studies were selected for in-depth analysis.

In 2001, Parnia et al.⁹ (Frame 3) attempted to investigate prospectively the potential authenticity of EVA experiences. Boards with different figures were suspended from the wards' ceiling before the study's commencement. These images, facing the ceiling, were not visible from the floor. Four participants, who met the criteria for RED, were assessed for any EVA experiences. However, no EVA was reported, despite well-structured, narrative-driven, easily remembered, and lucid events. i.e. RED phenomenon.

In 2001, Van Lommel et al.¹ published in *The Lancet* a prospective multicentre cohort study of CA survivors, conducted in ten Dutch hospitals. The study duration was eight years. The main objective was to explore causes/factors related to RED's frequency, depth, and content. The total sample were 344 CA survivors of which sixty-two patients had some recollection during the CA: 21 were classified as superficial RED (6%), 18 moderate RED (5%), 17 deep RED (5%) and six (2%) very deep RED. Approximately 41 (12%) described it as a "core experience". The depth of the RED phenomenon followed the criteria established by Kenneth Ring Scale that measures the intensity of RED according to specific characteristics of the experience reported by the patient. With a control group of 282 CA survivors, Van Lommel et al. were able to statistically document that there was no demographic, medical (CPR duration), pharmacological (drug effects), or psychological factors that explained RED phenomenon.

The study¹ comprised three structured interviews, the first being conducted a few days after the CA. Two other interviews were taken in the second and eighth year after CA, aiming to evaluate the impact of RED on psychosocial and spiritual domains in relation to the control group. The RED arm participants showed positive/transformational effects in relation to the meaning/purpose of life with very short-lived event capable of triggering significant changes in several aspects of life: (a) social (empathy, lovingness, acceptance of others, involvement with family); (b) religious (life's meaning, spirituality); (c) attitude towards death (less fear and certainty in life after death); and (d) appreciation of everyday life and understanding of oneself (self-knowledge). Van Lommel et al.¹ documented RED associated with EVA. This phenomenon was confirmed through reports from healthcare professionals during CPR:

An ambulance brings in a 44-year-old cyanotic, comatose man [...]. found about an hour before in a meadow by passers-by. After [...] heart massage and defibrillation are also applied [...] we want to intubate the patient, he turns out to have dentures in his mouth. I remove these upper dentures and put them onto the 'crash car' [...] After about an hour and a half the patient [...] is transferred to the intensive care unit to continue the necessary artificial respiration. Only after more than a week do I meet again with the patient [...to] distribute his



medication. The moment he sees me he says: ‘Oh, that nurse knows where my dentures are’. I am very surprised. Then he elucidates: ‘Yes, you were there when I was brought into hospital and you took my dentures out of my mouth and put them onto that car, it had all these bottles on it and there was this sliding drawer underneath and there you put my teeth.’ [...] When I asked further, it appeared the man had seen himself lying in bed, that he had perceived from above how nurses and doctors had been busy with CPR. He was also able to describe correctly and in detail the small room in which he had been resuscitated as well as the appearance of those present like myself. At the time that he observed the situation he had been very much afraid that we would stop CPR and that he would die. And it is true that we had been very negative about the patient’s prognosis due to his very poor medical condition when admitted. The patient tells me that he desperately and unsuccessfully tried to make it clear to us that he was still alive and that we should continue CPR. He is deeply impressed by his experience and says he is no longer afraid of death¹. (p. 2041)

In 2014, Parnia et al.¹⁰, published an international (Australia, England, and USA) and multicentre (15 hospitals) prospective study on CA lasting four years. The 2060 CA patients provided a sample of 140 participants, as most patients died and/or were too poorly to participate in the interviews. The objective of the study was to analyse the incidence of RED and the wide range of mental experiences that occur during CA episodes. It adopted an innovative methodology to evaluate the accuracy of EVA reports during the CA. Signs have been placed on top of resuscitation-room furniture hoping that patients would recall these signs when leaving the body and assuming a position from above.

Interviews took place in stages: (1) General questions were asked about the perception of consciousness and memories during CA; (2) Open questions were asked about the experiences and Greyson Scale was applied requiring a ≥ 7 cut-off point to be included. Individuals with detailed memories during CPR were selected for the third phase of interviews.

Although no patient demonstrated clinical signs of consciousness during CPR, 39% (55/140) responded positively to the question “Do you remember anything from the time during your unconsciousness?”¹⁰ (p.1801).

Of 140 patients interviewed seven (5%) had detailed memories and RED, but only one patient met the RED criterion with detailed memory of CPR event. This EVA was verified by a medical record review documenting the use of Automated Electronic Defibrillator and the health team involved in CPR. This report provides evidence that RED-EVA occur neither at the beginning of CA nor at its recovery phase, but rather during a profound period of dysfunctional brain activity:

[Before the CA] ...I was still talking to [the nurse] and then all of a sudden, I wasn’t. I must have (blanked out) ...but then I can remember vividly an automated voice saying, “shock the patient, shock the patient,” and with that, up in [the] corner of the room there was a [woman] beckoning me. . . I can remember thinking to myself, “I can’t get up there” ... she beckoned me... I



felt that she knew me, I felt that I could trust her, and I felt she was there for a reason and I didn't know what that was ... and the next second, I was up there, looking down at me, the nurse, and another man who had a bald head... I couldn't see his face but I could see the back of his body. He was quite a chunky fella...He had blue scrubs on, and he had a blue hat, but I could tell he didn't have any hair, because of where the hat was. The next thing I remember is waking up on [the] bed. And [the nurse] said to me: "Oh you nodded off. . .you are back with us now." Whether she said those words, whether that automated voice really happened, I don't know... I can remember feeling quite euphoric... I know who [the man with the blue hat was) ...I [didn't] know his full name, but... he was the man that...[I saw] the next day...I saw this man [come to visit me] and I knew who I had seen the day before.¹⁰ (p. 1803)

The EVA phenomenon could not be verified through the objects placed on the furniture as the CA associated with EVA occurred in an unprepared room for this phenomenon. EVA is scientifically important because the reported perceptions can be corroborated by family members and medical staff about when/how the perceptions occurred. They differ from hallucination (not based on reality) and illusion (incorrect assessment of reality).

Sterz et al.¹¹, introduced a technical enhancement to verify the occurrence of EVA. A notebook PC was positioned two meters above an emergency bed, facing the ceiling, displaying images selected from a pool of 29. Despite the effort (7 years), verification of EVA was not documented in this study.

The AWAreness during REsuscitation - II¹² attempted to map the cognitive activity and awareness during CA by two strategies: (a) a tablet-computer containing independent audiovisual stimuli was clamped above the patient's head. The tablet randomly projected one of 10 stored images onto its screen. Bluetooth headphones were placed over the ears during CPR, sending audio cues (three fruits: apple, pear, banana) every minute for five minutes. Due to a small sample of survivors, only 1/28 (3.5%) identified the auditory stimulus; (b) a portable 4-lead-frontotemporal electroencephalography was attached to patients' heads during CPR. Real-time spikes of EEGs were captured in the 3–5 second pauses in chest compressions for checking patients' pulse. This interval window rendered "consecutive" EEG images using a screenshot. The final EEG data comprised 53/85 subjects who had interpretable EEG data with 466/851(55%) images. Absence of cortical brain activity (flatline EEG) was dominant (47% of data/images), seizure-like (epileptiform) activity represented 5%. Additionally, "near-normal/physiological" EEG emerged: Delta (22%) and Teta (12%) activities up to CPR 60 minutes, as well as Alpha 6% of data/images (up to CPR 35 minutes) and Beta 1%. The relative frequency of "near-normal" EEG patterns declined over time, especially after 50 minutes of CPR. However, the study fails to document the association of patients who reported awareness and RED with EEG activities consistent with consciousness and vice-versa. For instance, two of the 28 interviewed subjects had EEG data, but were not among those with explicit cognitive recall¹³. Despite bispectral EEG be the standard in intensive care for evaluating consciousness in comatose patients¹⁴, Martial et al.¹⁵, highlight that "visual inspection of screenshot



EEG images [...] to classify EEG patterns, [limit] the interpretation of these important data, that would have benefited from in-depth (time) frequency analyses” (p. 1). However, as Parnia remarks “the identification of brain EEG biomarkers suggestive of lucid consciousness does not indicate brain processes produce the recalled experience of death”¹⁴ (p. 1). For instance, RED-EVA phenomenality remains a challenge to the physicalist/materialist concept of consciousness.

Discussion

Philosophical reflections

Family and Community Medicine is one of the specialties in clinical medicine that questions the mechanistic/reductionist premises of biomedicine from holistic, systemic, and complexity theory perspectives^{16,17}. One of the proposed explanatory models is critical realism, where “novel properties occur in complex systems: emergence (...) because of multiple non-hierarchical and non-linear relationships between components of the system. The whole is greater than the parts”¹⁸ (p.169). Medicine pursues the understanding of the whole being by narrowing its study to smallest biological mechanism, i.e., the molecular level. Then, through systemic and complexity theory the whole is an emergent property not envisioned by examining its constituent components. According to Neighbour¹⁹, systems are usually hierarchical and layered-complex organisation, within which “each hierarchical level [layer] of organisation [has] goals imposed from above, but [that are] free to develop its own autonomous way to achieve them”¹⁹ (p. 10). In this philosophical premise, consciousness is an epiphenomenon emerging from brain neuronal activities, as proposed by Edgar Morin²⁰:

Human cognitive activity is the cogitation of the computation of computations. Cogitation is an emergent activity, at the same time, as it is the spirit. Thus, it is necessary to understand the notion of emergence in terms of a complex theory of organisation: a whole emerges from the constituent elements that integrate it and the organising whole that was constituted acts retroactively on the parts that constitute it. Such retroactivity only allows the functioning of these parts as a function of the whole, therefore, it can be concluded that the spirit is an emergent activity that retroacts on the functioning of brain cells, even if it is of a different nature from the emerging level. It is the level that converts a chemical-electrical activity into another language, that of representation²⁰. (p. 23-4)

Neighbour¹⁹ applies the concept of emergence to understand complex phenomena: “take a neuron, nothing special in cellular terms; but connect enough of them up, and you have the human brain, possessed of perhaps the most miraculous emergent property of all – consciousness” (p. 257). Certainly, the wholeness of a system is greater than the individual parts; it is of another nature. Hence, each community has its own “culture”, or paraphrasing Morin, its own “spirit”. The community resulting from



consciousness interactions produces its own “being”. However, the same reasoning cannot be applied to neurons belonging to a lower level.

McWhinney and Freeman²¹ applying Alfred Whitehead’s organismic cosmology explore the general principles of existence. This means the mind and consciousness cannot be fully elucidated at the physicochemical/biological level of the brain. According to Whitehead²² the whole as a higher dimension has an organising principle that:

In the case of the animal, the mental states enter into the plan of the total organism and thus modify the plans of successive subordinate organisms until the ultimate smallest organisms [...] an electron within a living body is different from an electron outside it, by reason of the plan of the body [...] this plan includes the mental state²². (p. 79)

The self-eco-organisation concept of complexity and “emergence theory” differs from the organismic paradigm of a conscious universe as the former is bottom-up approach and the latter a top-down. Thus, concerning the origin of consciousness, McWhinney and Freeman²¹ are dissonant in relation to the emergence theory of consciousness. For them, there is a “quantum leap” for each hierarchical level of complexity, from “inert matter” (physical-chemical) to life (plant) and from consciousness (animal) to self-consciousness (human)²³. Consciousness as a higher organising principle cannot be derived from a lower hierarchical level. Regarding this, RED prospective studies provide the missing concreteness to theories related to the phenomenon of consciousness. As Parnia et al.¹², suggest, “the paradoxical finding of lucidity and heightened reality when brain function is severely disordered or has ceased raises the need to consider alternatives to the epiphenomenon theory”¹² (p. 9).

RED-studies corroborate McWhinney and Freeman’s²¹ understanding as in clinical death consciousness continues to be, i.e., consciousness transcends the body. RED-studies should stimulate new concepts regarding the relationship between consciousness and brain.

According to Van Lommel^{4,6,7}, the brain would not have a consciousness-producing function, but an interface function that allows consciousness to be experienced through one’s own body. This is just one part of consciousness expanded during RED. The author makes an analogy with an informational field whereby the brain would be a kind of transducer that interfaces with this informational consciousness-field. Examples are radios, television sets, smartphones and computers that capture information in electromagnetic waves. These devices tune-in with an informational wave spectrum and generate content perceptible to senses. Problems in any part of these devices interfere with signal capture, which may affect the expression of the content or quality of screen image. However, as the sound/image are not generated by these gadgets, even if they are damaged, “their” contents are not destroyed. Consequently, physical problems that alter the functioning of the brain can affect the expression of consciousness, but itself remains intact.⁴ There is a parallel with the postulates of quantum physics, where events are simultaneous and interconnected. During RED consciousness is non-local, there is no time and space, there is no



beginning and no end⁴. This is similar to subatomic-particle indeterminacy principle of quantum mechanics behaving sometimes like a wave (phase) and sometimes like a particle (real):

Phase-space is an invisible, non-local, higher-dimensional space consisting of wave-fields of probability, where every past and future event is available as a possibility [...] it is helpful for understanding the transition between the fields of consciousness in the phase-space (to be compared with the probability fields as we know from quantum mechanics) and the body-linked waking consciousness in the real-space, because these are the two complementary aspects of consciousness⁴. (p. 146)

The default mind-set regarding consciousness is spatial. The brain as the producer, prisoner of mental and consciousness activities. This understanding fosters the division between mind-body and inner-outer world. RED-studies linked with quantum mechanics of non-local consciousness can provide a different perspective: the vibrational wave-like information field needs inner time to vibrate. Thus, mind and matter can be related to time (and not space), as phase in process. Consciousness or the “experiencer” houses two poles: (a) physical, as past (“memory”); and (b) mental, as infinite possibility (future). These two poles are in the present, that is, in the now. Based on Whitehead’s ideas, Rupert Sheldrake clarifies the mind-body relation with time²⁴:

Experience is always “now,” and matter is always “ago.” The link from the past to the present is physical causality, as in ordinary physics, and from the present to the past is feeling, or, to use Whitehead’s technical term, “prehension,” meaning, literally, seizing, or grasping²⁴. (p. 216)

Reality is composed of events in a process informing each subsequent event, which requires a conscious being in the now, that is always renewed, materialising in the past and opening infinite possibilities for the future, i.e. a new subject of experience²⁴.

Implications for healthcare

Primary Health Care uses time and continuity of care to build personalised relationships that help strengthen trust in healthcare professionals. Additionally, family physicians have a biopsychosocial approach to healthcare structured via the person-centred clinical method, systemic and organismic thinking. Sometimes, this approach requires the construction of genograms that help contextualise the lifecycle and intra-family relationships, as well as socioeconomic factors in the management of health problems²⁵. Thereby, studies on RED can contribute to further expanding the therapeutic skills of health professionals.

Mental healthcare is strongly influenced by the biological/reductionist medicine model. Existential problems of living have been transmuted into diseases by modern Psychiatry. Van Os²⁶ calls this process hermeneutic assimilation whereby psychiatrists



“capture the person’s experiences and put them in a framework that’s not theirs”, i.e., in accordance with the Diagnostic and Statistical Manual of mental disorders. Thus, psychological suffering is real, not categories created by Psychiatry²⁶.

The postulated concepts of non-local consciousness contribute to other perspectives on mental health problems. Since mental phenomena do not have the same material objectivity of the body, they cannot become diseased²⁷. This strengthens a critical perspective of the non-existence of mental diseases associated with any physicochemical dysfunction involving brain monoamines²⁸. Consequently, the content of RED can contribute to improving the relational elements and non-specific rituals in the encounter between patient and healthcare professional²⁶, such as offering an explanatory model and proposing a theory for change. For instance, patients with suicidal thoughts may realise the futility of such act, since death does not necessarily end their suffering, which is of another order or magnitude. Some surviving CPR narratives illustrate this point:

All of life’s challenges have been chosen for a reason and each event teaches us something we need to learn in order to evolve to the next lesson.” or “...Each person’s hardships are directly related to the lesson that person must learn. It is our choice whether we accept the challenge or not². (p. 8)

Other phenomena, e.g. hearing voices, seeing “non-existent beings” (auditory/visual hallucinations) might also benefit from RED explanatory model as these individuals may be capturing different spectrums of non-local consciousness informational field. Certainly, this topic should be presented within the context of a productive therapeutic relationship characterised by empathy, an active and attentive attitude, and the ability to motivate, collaborate, and facilitate emotional expression²⁶.

Palliative care is another moment in the lifecycle of patients that can benefit from RED-studies³. Some phenomena associated with this period, e.g. vision of deceased relatives, terminal lucidity, feeling of being supported, visit to other dimensions, etc.²⁹ can be explained in the light of non-local consciousness. Most RED content contemplates a common pattern in relation to death, endowed with feelings of plenitude, serenity, and unity with the whole (Frame 1). Such experiences can help to relief anxiety and fear related to death. In palliative care, the pain experienced by an individual encompasses physical, social, emotional, and spiritual dimensions³⁰. In this classification, emotional pain may be related to fear of death, a feeling common to those who encounter their own finitude and, potentially, generating anguish. The following RED reports exemplify this point:

I felt very comfortable, and I was being approached by a being – a being of light. As he came to me, I recognized that it was my grandfather. He had passed away about five years prior to that.” or “There was a stream of beings guiding me. They affirmed my answers, clarified my confusions, and comforted my bewildered heart². (p. 7)



As RED are situations that approach death and give it a new meaning, such experiences can offer useful tools to be worked on with those facing fear, insecurity, and anxiety in relation to the finitude of physical body.

Research on RED can bring health professionals and patients of different beliefs closer to the topic of spirituality. Often, people who have gone through RED become more loving, tolerant, connected with spiritual values and a purpose in life, as illustrated by narratives of CA survivors: “I have been much more mindful of others. It’s easier for me to put myself in other people’s shoes. It’s easier for me to act out of love and compassion...”²² (p. 8). Or “I saw the divine spark, that light that connects us to the creator, to the source where we return with unimaginable joy”²² (p. 7). RED represents a scientifically validated explanatory model to elucidate mystical and religious experiences of different cultures³¹. Hence, RED can be a great ally in the clinical encounter by opening an in-the-now shared space of meaningful understanding of human vulnerability and transcendence, which can foster a holistic healing process³².

Conclusion

RED-studies are counterintuitive, as they challenge the cerebrocentric paradigm, which believes consciousness is a phenomenon emerging from the complexity of neuronal activity. However, current scientific evidence makes it impossible to deny claims of consciousness regarding death. RED-studies are a kind of “anomaly” to the hegemonic biomedical paradigm, as they require another explanatory model about the nature of human consciousness and its interface with brain. The paradigm of non-local consciousness, as a unique informational field that is expressed in the diversity of natural phenomena, may represent a pre-paradigmatic phase in the construction of a new understanding of consciousness²¹. Hence, this knowledge can be used to inform healthcare practice, especially when dealing with existential issues and human suffering. Certainly, there are controversies regarding the nature of consciousness, and it is hoped that new prospective studies on CA survivors will illuminate this debate.



Authors' contribution

All authors actively participated in all stages of preparing the manuscript.

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Conflict of interest

The authors have no conflict of interest to declare.

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References

1. Van Lommel P, Van Wees R, Meyers V, Elfferich I. Near-death experience in survivors of cardiac arrest: a prospective study in the Netherlands. *Lancet*. 2001;358(9298):2039-2045. doi:10.1016/S0140-6736(01)07100-8.
2. Parnia S, Post SG, Lee MT, et al. Guidelines and standards for the study of death and recalled experiences of death—a multidisciplinary consensus statement and proposed future directions. *Ann NY Acad Sci*. 2022;1511(1):5-21. doi:10.1111/NYAS.14740.
3. Norman AH. Recalled Experience of Death: awareness beyond the brain – *BJGP Life*. https://bjgplife.com/recalled-experience-of-death/?preview_id=19424.
4. Van Lommel P. Non-local Consciousness: A Concept Based on Scientific Research on Near-Death Experiences During Cardiac Arrest. *Journal of Consciousness Studies*. 2013;20(1-2).
5. Parnia S, Fenwick P. Near death experiences in cardiac arrest: visions of a dying brain or visions of a new science of consciousness. *Resuscitation*. 2002;52(1):5-11. doi:10.1016/S0300-9572(01)00469-5.
6. Van Lommel P. Near-Death Experience, Consciousness, and the Brain: A New Concept about the Continuity of Our Consciousness Based on Recent Scientific Research on Near-Death Experience in Survivors of Cardiac Arrest. *World Futures*. 2006;62(1-2):134-151. doi:10.1080/02604020500412808.
7. Van Lommel P. *Consciousness Beyond Life: The Science of the Near-Death Experience*. New York: HarperCollins; 2010.
8. Klemenc-Ketis Z, Kersnik J, Grmec S. The effect of carbon dioxide on near-death experiences in out-of-hospital cardiac arrest survivors: a prospective observational study. *Crit Care*. 2010;14(2): R56. doi:10.1186/cc8952/comments.
9. Parnia S, Waller DG, Yeates R, Fenwick P. A qualitative and quantitative study of the incidence, features and aetiology of near-death experiences in cardiac arrest survivors. *Resuscitation*. 2001;48(2):149-156. doi:10.1016/j.resuscitation.2014.09.004.
10. Parnia S, Spearpoint K, de Vos G, et al. AWARE—AWAREness during REsuscitation—A prospective study. *Resuscitation*. 2014;85(12):1799-1805. doi: 10.1016/J.RESUSCITATION.2014.09.004.
11. Sterz F, Berger ML, Ruzicka G, Beisteiner R. Lapses of the Heart: Frequency and Subjective Salience of Impressions Reported by Patients after Cardiac Arrest. *J Clin Med*. 2023;12(5):1968. doi: 10.3390/JCM12051968/S1.
12. Parnia S, Keshavarz Shirazi T, Patel J, et al. AWAREness during REsuscitation - II: A multi-center study of consciousness and awareness in cardiac arrest. *Resuscitation*. 2023;191. doi: 10.1016/j.resuscitation.2023.109903.



13. Greyson B, van Lommel P. AWAreness during REsuscitation and EEG activity. *Resuscitation*. 2024;194. doi: 10.1016/j.resuscitation.2023.109924.
14. Parnia S. Reply to AWAreness during REsuscitation and EEG activity. *Resuscitation*. 2024;194. doi: 10.1016/j.resuscitation.2023.110080.
15. Martial C, Fritz P, Lejeune N, Gosseries O. Exploring awareness in cardiac arrest studies: Methodological challenges. *Resuscitation*. 2024;194:109980. doi: 10.1016/j.resuscitation.2023.109980.
16. Ramirez Jaco B, Norman AH. A filosofia da Medicina de Família e Comunidade segundo Ian McWhinney e Roger Neighbour. *Rev Bras Med Fam Comunidade*. 2020;15(42):1991. doi: 10.5712/rbmfc15(42)1991.
17. Norman AH, Tesser CD. Following Mawhinney's footsteps: From family medicine to traditional and complementary medicine. *Interface: Communication, Health, Education*. 2019;23. doi: <https://doi.org/10.1590/Interface.190036>.
18. Appleby A. Right idea, wrong science? Should Critical Realism be the new science of medical practice? *British Journal of General Practice*. 2024;74(741):168-169. doi: 10.3399/BJGP24X736857.
19. Neighbour R. *The Inner Physician: Why and How to Practise "Big Picture Medicine"*. London: Royal College of General Practitioners; 2016.
20. Morin E. O problema epistemológico da complexidade. In: *O Problema Epistemológico da Complexidade*. Lisboa: Europa-América; 2002:128.
21. McWhinney I, Freeman T. *Textbook of Family Medicine*. Oxford: Oxford University Press; 2009.
22. Whitehead AN. *Science and the Modern World*. New York: Free Press; 1967.
23. Schumacher EF. *A Guide for the Perplexed*. London: Sphere Books; 1978.
24. Sheldrake R. Setting science free from materialism. *Explore: The Journal of Science and Healing*. 2013;9(4):211-218. doi: 10.1016/j.explore.2013.04.004.
25. Christie-Seely J. *Working with the Family in Primary Care: A Systems Approach to Health and Illness*. Westport: Praeger Publishers; 1984.
26. Van Os J, Guloksuz S, Vijn TW, Hafkenscheid A, Delespaul P. The evidence-based group-level symptom-reduction model as the organizing principle for mental health care: time for change? *World Psychiatry*. 2019;18(1):88-96. doi: 10.1002/WPS.20609.
27. Szasz TS. The myth of mental illness. *American Psychologist*. 1960;15(2):113-118. doi: 10.1037/h0046535.
28. Middleton H, Moncrieff J. Critical psychiatry: a brief overview. *BJPsych Adv*. 2019;25(1):47-54. doi: 10.1192/bja.2018.38.



29. Fenwick P, Lovelace H, Brayne S. Comfort for the dying: five-year retrospective and one-year prospective studies of end-of-life experiences. *Arch Gerontol Geriatr.* 2010;51(2):173-179. doi: 10.1016/J.ARCHGER.2009.10.004.
30. Mehta A, Chan LS. Understanding of the concept of “total pain”: A prerequisite for pain control. *Journal of Hospice and Palliative Nursing.* 2008;10(1):26-34. doi: 10.1097/01.NJH.0000306714.50539.1A.
31. Grant E, Murray SA, Kendall M, Boyd K, Tilley S, Ryan D. Spiritual issues and needs: perspectives from patients with advanced cancer and non-malignant disease. A qualitative study. *Palliat Support Care.* 2004;2(4):371-378. doi: 10.1017/s1478951504040490.
32. Ventres WB. The Importance of Inclusivity During the Spiritual Assessment. *Am Fam Physician.* 2023;107(2):116-116.



Explorar a abordagem científica da Rememoração da Experiência de Morte (REM) e correlacioná-la aos fundamentos filosóficos da Medicina de Família e Comunidade para ampliar a compreensão da consciência humana. Revisão não-sistemática na base de dados PubMed de “estudos prospectivos” relevantes sobre “experiência de quase-morte”. Cinco estudos prospectivos documentaram ocorrências do fenômeno REM durante a morte clínica. Estudos REM fortalecem um modelo organísmico da existência e desafiam o conceito de consciência como epifenômeno das atividades cerebrais. Sugere-se uma nova compreensão da relação mente-cérebro inspirada no campo informacional unificado da mecânica quântica: a consciência como não-local. Esse conhecimento pode auxiliar profissionais de saúde no cuidado de pacientes com problemas existenciais como saúde mental, cuidados paliativos e questões espirituais. Estudos REM representam uma fase pré-paradigmática na construção de um novo conceito de consciência humana em relação ao cérebro.

Palavras-chave: Espiritualidade. Consciência. Experiência de quase-morte. Epistemologia. Medicina de família e comunidade.

Explorar la cientificidad de la Rememoración de la Experiencia de Muerte (REM) y correlacionarla con fundamentos filosóficos de Medicina Familiar y Comunitaria ampliándose la comprensión de la conciencia humana. Revisión no-sistemática en PubMed de “estudios prospectivos” sobre “experiencias cercanas a la muerte”. Cinco estudios prospectivos documentaron ocurrencias del fenómeno REM durante la muerte clínica. Estudios REM fortalecen un modelo organísmico de existencia y desafían conceptos de conciencia como un epifenómeno de actividades cerebrales. Postulase una comprensión de la relación mente-cerebro inspirada en campo informativo unificado de la mecánica cuántica: la conciencia como no-local. Este conocimiento puede ayudar profesionales de salud a cuidar a pacientes con problemas existenciales como salud mental, cuidados paliativos y problemas espirituales. Estudios REM representan una fase pre-paradigmática en la construcción de un nuevo concepto de conciencia humana con relación al cerebro.

Palabras clave: Espiritualidad. Conciencia. Experiencia cercana a la muerte. Epistemología. Medicina familiar y comunitaria.