


Phenomenology of ketamine-induced dissociative states and their application for psychotherapy

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Overview

- Ketamine treatment
 - Dosage
 - Factors that impact the dissociative experience
 - Phenomenology of four dissociative states
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Why is ketamine unique?

- Rapid-onset antidepressant and the only anti-suicidal drug on market
- Biologically safe with excellent safety profile
- Unfortunately, ketamine also generates peculiar (and very annoying) psychological side-effects (vivid imagery, excitement, visual hallucinations, trance-like cataleptic state) dubbed “dissociative states.”





Dissociative states

- “Dissociative states” are not side-effects, but the very nature of ketamine actions that have been utilized as an anesthetic agent for longer than half a century.
- Unlike all other anesthetic agents, except nitrous oxide, ketamine does not extinguish consciousness.
- In contrast, ketamine exerts its effect through a functional and electrophysiological disconnect between the thalamo-neocortical and limbic areas of the brain. Subsequently, it “dissociates” mind from body (thus the name of “dissociative anesthetic”).




Dosage

- Ketamine does not have a characteristic dose-response continuum by progressive titration; the dissociation is present or absent with a very narrow transition zone.
- At doses below a certain threshold, ketamine produces analgesia and anxiolysis; however, once the critical dosage threshold of roughly 1 to 1.5 mg/kg IM (or 0.5 to 0.75 mg/kg IV) is reached, the characteristic dissociative state abruptly appears.
- It should be noted that ketamine is a nonreversible agent; once the dissociative state is initiated, it cannot be aborted.




Dosage and dissociation

- Dissociative experiences begin at one-sixth to one-tenth the dose used for general anesthesia
 - Loss of reality contact
 - Non-ordinary state of consciousness
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Three factors that impact the dissociative experience

- The dose of ketamine
 - The physical “setting” of the ketamine administration
 - The mindset (often just referred to as “set”) of the person prior to the ketamine administration.
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Four
dissociative
states

Mild Dissociative State

Intermediate Dissociative
State

Severe Dissociative State

Profound Dissociative State

Mild Dissociative State

Empathogenic ("generating a state of empathy" or "heart-opening") experience.

Low sub-psychedelic dose of ketamine (0.25 mg/kg – 0.5 mg/kg IM, or 25 mg – 50 mg IM).

Lasts 45 to 50 minutes

Characteristics of the Mild Dissociative State

- The awareness of the body remains well-preserved;
- The body feels very comfortable and relaxed;
- The ego functioning is well-maintained; however, the ego defenses are significantly lessened;
- The person experiences feelings of empathy and compassion for themselves;
- The mind feels emotional warmth, well-being, and joy;
- Strong feelings of love and peace are prevailing;
- Feelings of euphoria, pleasure and joy are common;
- Feelings of ecstasy and enhanced sensuality are frequent;
- The mind is dreamy with frequent non-specific colorful visual effects;
- The person may feel they have forgiveness and understanding of themselves and for those with whom they have important relationships.

Mild Dissociative State

- Combination with therapeutic techniques
- High degree of recall



Intermediate Dissociative State

“Out-of-body
experience”
(OOBE)

Medium
psychedelic dose of
ketamine (0.75
mg/kg – 1.5 mg/kg
IM, or 75 mg – 125
mg IM)

Lasts from 45
minutes to 1 hour

Characteristics of Intermediate Dissociative State

- Feelings of complete separation from one's body;
- The ego defenses are significantly diminished; however, the rudimentary ego structure is still preserved, and the experienter is well-aware of the self;
- Awareness of becoming a non-corporeal being;
- Apparent visits to mythological realms of consciousness;
- Apparent encounters with non-terrestrial beings (e.g., "space aliens");
- Emotionally intense visions (e.g., deceased relatives, "angels," "spirits");
- Encounters with archetypal beings (e.g., Krishna, Buddha, Christ);
- Vivid dreams and memories of past or future incarnations;
- Re-experiencing the birth process.

Intermediate Dissociative State

- Similarity to medium dose of classic hallucinogens
- Adjunct to psychodynamic psychotherapy
- Partial recall





Severe Dissociative State

Near-death
experience (NDE)

High psychedelic
dose of ketamine
(2.0 mg/kg – 3.0
mg/kg IM, or 150 –
250 mg IM)

Lasts from 45
minutes to 1 hour

Characteristics of Severe Dissociative State

- Feelings of complete departure from one's body;
- Feelings of complete ego dissolution and loss of identity;
- A strong belief of being physically dead;
- Experience of psychological death of the mind (the self);
- Feelings of becoming a single point of consciousness (the Self, or a soul) that is simply aware of itself with no other points of reference;
- Sensations of moving through a tunnel;
- Experience of reliving one's entire life;
- Becoming aware that one is responsible for every thought, word, and action of one's life prior to the NDE;
- Awareness of how others were affected by one's thoughts, words, and actions;
- Performing the moral judgment of the self-based on one's own sense of right and wrong holding one accountable for one's thoughts, words, and actions;
- Experience of visiting non-physical realities (either paradisiacal or hellish realms of consciousness) based on one's own self-judgment;
- Encounters with non-corporeal entities;
- Experience of visiting an eternal, featureless void (nothingness);
- Experience of psychological rebirth of the ego.

Severe Dissociative State

- Similarity to high dose hallucinogen experience
- Range of near-death experiences
- Partial recall





Near-death experiences

- Transformative and capable of inducing positive changes in spiritual development and worldview.
- Ketamine-induced NDEs appear to be equivalent to natural NDEs and may facilitate stable recovery by accelerating patients' psycho-spiritual growth and broadening their worldviews.
- In addition to bringing an insight into one's existential problems, the NDE can also generate a spontaneous resolution of the patient's addictive illnesses, psychological problems, and personality disorders.
- These experiences can also generate a spontaneous spiritual conversion and a dramatic improvement in moral character.

Profound Dissociative State

- Ego-dissolving transcendental (EDT) experience (an ecstatic state of the dissolution of boundaries between the self and external reality)





Profound Dissociative State

- Feelings of complete dissolution of one's body;
- Feelings of complete dissolution not only of ego but also the self;
- Sense of transcending normal mass/space/time continuum;
- Feelings of interconnectedness with all people (or sense of experiencing collective consciousness);
- Feelings of cosmic unity with nature;
- Feelings of cosmic unity with the universe;
- Feelings of becoming a "Unified Field";
- Feelings of becoming God, frequently experienced as an ocean of brilliant white light;
- Deep feelings of love, peace, serenity, joy and bliss;
- Profound sense of sacredness of the experience;
- Profound sense of ineffability of the experience;
- Intuitive belief that the transcendental experience is a source of objective truth about the nature of absolute reality.

Profound Dissociative State

Not always dose dependent. May occur with a low dose (0.25 mg/kg – 0.5 mg/kg IM, or 25 – 50 mg IM). More frequent with a dose (0.75 mg/kg – 2.0 mg/kg IM, or 75 – 200 mg IM)

Last from 45 minutes to 1 hour

Excellent adjunct to transpersonal psychotherapy.



Ego-dissolving transcendental experiences

- EDT experiences frequently generate some resolution of the patient's addictive illnesses, psychological problems, and personality disorders, including instances of spontaneous healing from chronic psychosomatic illnesses.
- Anecdotal accounts of patients who had a spontaneous remission of some forms of serious medical disease.
- EDT experiences have the advantages of potentially rapidly accelerating patients' psycho-spiritual growth, broadening their worldviews, and possibly generating a spontaneous spiritual change with an improvement in moral character.

Ketamine-Induced Dissociative (Non-Ordinary) States of Consciousness

| State | Features | Typical Ketamine Dose | Duration |
|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------|
| Empathogenic, Or Mild Dissociative State | Awareness of body; comfort and relaxation; reduced ego defenses; empathy, compassion, and warmth; love and peace; euphoria; mind is dreamy with non-specific colorful visual effects. | Low sub-psychedelic dose similar to that used for anxiolysis and/or analgesia (25 mg – 50 mg IM). | 45 – 120 minutes |
| Out-of-Body Experience (OOBE), Or Intermediate Dissociative State | Complete separation from one's body; significantly diminished ego defenses; visits to mythological realms of consciousness; encounters with non-terrestrial beings; emotionally intense visions (e.g., deceased relatives, spirits); vivid dreams of past and future incarnations; re-experiencing the birth process. | Medium psychedelic dose such as that used for mild conscious dissociative sedation (75 mg – 125 mg IM) | 45 – 60 minutes |

Ketamine-Induced Dissociative (Non-Ordinary) States of Consciousness

| State | Features | Typical Ketamine Dose | Duration |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------|
| Near-Death Experience (NDE), Or Severe Dissociative State | Departure from one's body; complete ego dissolution/loss of identity; experience physical (body) and psychological (mind) death; experience being a single point of consciousness simply aware of itself; reliving one's life; aware of how actions have affected others, with moral judgment of self. | High psychedelic dose such as that used for moderate to severe conscious dissociative sedation (150 – 250 mg IM) | 45 – 60 minutes |
| Ego-dissolving Transcendental Experience (EDT), Or Profound Dissociative State | Ecstatic state of the dissolution of boundaries between the self and external reality; complete dissolution of one's body and self (soul); transcending normal mass/time/space continuum; collective consciousness; unity with Nature/Universe; sacredness. | Rare in low doses (25 mg – 50 mg IM), more common in high psychedelic doses (75 – 200 mg IM) | 45 – 60 minutes |



Conclusion

- Ketamine is the only legally-available substance within the United States that can reliably produce psychedelic experiences.
- It is biologically safe, has an excellent safety profile, and generates four distinct non-ordinary states of consciousness that can be successfully used as adjuncts to psychodynamic, existential, transpersonal and growth-oriented psychotherapies.
- Unfortunately, it also generates a very annoying psychological side-effect (euphoria) that seduces many providers in repeatedly using it as a rapid-acting antidepressant despite a very short remission.

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Thank you

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