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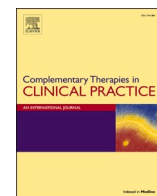
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Redefining hypnosis: A narrative review of theories to move towards an integrative model

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ABSTRACT

Hypnosis is an ancient mind-body intervention that has regained interest with the surge of research in the last decade documenting its clinical validity. Yet, theoretical controversies and misconceptions prevail among theorists, clinicians, and the general public, impeding the understanding, acceptance, replication, and use of hypnosis. Providing adequate information, which dispels misconceptions and promotes more balanced views, is warranted to facilitate the implementation and adoption of hypnosis in clinical and research settings. This review re-examines the conceptualisation of hypnosis throughout history and the theoretical controversies surrounding it while highlighting their meeting points and clinical implications. Despite dichotomies, a broad agreement appears across theoretical approaches regarding hypnotic analgesia effects, key components, and vocabulary. Further, theories highlight key factors of hypnotic responding. For instance, social theories highlight social and contextual variables, whereas state theories highlight biopsychosocial mechanisms and individual factors. Based on theories, the terms *hypnotherapy* or *clinical hypnosis* are recommended to refer to the therapeutic use of hypnosis in psychotherapeutic and medical contexts, respectively. This review concludes with a model that integrates various theories and evidence and presents hypnosis as a complex multifaceted intervention encompassing multiple procedures, phenomena, and influencing factors. This review intends to deepen our understanding of hypnosis, and promote its more rapid adoption and adequate implementation in research and clinical contexts, in addition to steering research towards evidence-based hypnotic practice. The review can have important research and clinical implications by contributing to advancing knowledge regarding hypnotic procedures, phenomena, and influencing factors.

1. Introduction

Hypnosis has recently regained interest with clinical investigations documenting its effectiveness for various physical and mental conditions, including distress, pain, and psychological disorders [1–7]. Emerging research has also supported the acceptability of hypnosis in psychotherapeutic and medical settings [5,6,8–20]. Hypnosis can be tailored to diverse populations and contexts and provided in various modes (live or recorded) and durations, without necessitating advanced technical pre-requisites nor the presence of a hypnotherapist (self-hypnosis) [6,9,21]. This adaptability, along with the strengthening evidence base documenting the utility of hypnotic interventions, has likely influenced hypnosis to gain wider acceptance as a therapeutic

intervention.

Theories are systematic explanations or ideologies that explain phenomena or events in a specific field of study including concepts, assumptions, and relationships to interpret observations and make predictions [22]. Several theories, with salient strengths, limitations, and heuristic values, have attempted to explain hypnosis, emphasising different aspects of hypnotic phenomena, and pinpointing various influencing factors [23–37]. However, despite extensive investigations of hypnotic neuro-cognitive, physiological, behavioural, and psychosocial effects, disagreements have prevailed among theorists, clinicians, and researchers regarding the procedures, phenomena, underlying mechanisms, and influencing factors of hypnosis. For instance, there is still no consensus on whether hypnosis involves a distinctive state and

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whether its clinical practice can be aptly conceptualized as hypnotherapy [38]. These theoretical disagreements have resulted in the prevalence of controversies and misinformation, obstructing the replication, comparison, acceptability, adoption, and implementation of hypnotic interventions in clinical investigations and interventions [39]. For instance, surveys have shown mixed views on hypnosis among clinicians, linked to the paucity of information regarding its clinical applications [9,40,41].

Theoretical and research investigations, attempting to deepen the understanding of hypnosis, did not preclude the prevalence of misconceptions and myths, which have prompted fears among the general public [9,42,43]. Widespread myths linking hypnosis to mesmerism or trance, propagated by mainstream media, stem from state theories and historical references to hypnosis [44]. For instance, American, Australian, and European students displayed negative views, linked to state theories and stage hypnosis, involving fears of being entranced, unconscious, forced to respond, or controlled by the *hypnotist* [42,45,46]. Misconceptions that hypnosis eliminates external awareness were also observed in 62% of 280 students from different countries who had no prior hypnotic experience [43]. These misconceptions were endorsed by state theorists and the American Psychological Association, depicting hypnosis as absent or diminished external awareness [24]. Further, a scoping review of hypnosis for paediatric procedural pain and distress revealed high rates of unwillingness to participate and dropouts (up to 52%) attributed to misconceptions, lack of interest, insufficient motivation, and fears among children and parents [39]. Myths linked to theories are briefly reviewed to set the scene for this review, although they were covered in greater depth in another paper by the authors [47].

In contrast to misconceptions, positive views towards hypnosis can promote hypnotic responding, in line with social-cognitive theories [48–54]. In a 2022 survey, 75% of 691 hypnosis clinicians in 31 countries postulated that patients' attitudes were extremely important for the successful use of hypnosis [4]. Numerous studies reported that participants were more willing to use hypnosis after receiving adequate information (e.g., via a training course and educational lecture dispelling myths or an explanation of what hypnosis is and how it works) [42,45,55,56]. Accordingly, the willingness to use hypnosis has been found to align with the provision of information that promotes positive treatment expectancies [57–59]. Henceforth, it is imperative to offer information that fosters evidence-based views of hypnosis to optimise individuals' attitudes towards hypnosis, thereby increasing their willingness to use it and their hypnotic responsiveness.

The provision of accurate information was also shown to improve clinicians' attitudes towards hypnosis [9,54]. Based on surveys, clinicians who had previous experience and knowledge of hypnosis tended to exhibit more favourable views of hypnotic interventions [41,45,55,60–65]. As clinicians play a key role in the implementation and acceptance of interventions, providing them with evidence is important to dispel misconceptions, where warranted [66–68]. Theoretical approaches to hypnosis and its implementation have not been recently explored in depth, with much of the focus in past research on attempts to characterise the diversity of suggestion-induced responses [69]. This narrative review intends to propagate adequate information for potential recipients, clinicians, and researchers by exploring theories and synthesising knowledge regarding hypnotic procedures and phenomena. The review addresses theoretical disagreements and related myths that have obstructed the adequate understanding and acceptance of hypnosis. Further, a model integrating prominent hypnosis theories, that comprehensively describe hypnotic procedures, phenomena, and influencing factors, is provided to assist researchers in designing and structuring their evaluations and research drawing on relevant aspects of theories. Models are simplified representation or abstraction of a complex system or concept based on the theoretical principles intended to facilitate understanding complex phenomena or processes, including key variables, effects, and underlying mechanisms [22].

1.1. Theoretical conceptualisations of hypnosis throughout history

While hypnosis has been used for therapeutic purposes since the ancient history of humanity, its practice as a medical treatment appears to have surfaced in the 18th and 19th centuries [70]. James Braid, one of the first to describe hypnosis [71], was a pioneer in using hypnotic treatments, primarily for acute pain and inducing hypnosis through eye fixation [2]. Although myths associating hypnosis with sleep originated from Braid's references, he favoured the term "monoideism" to characterise the state of focused attention experienced during hypnosis, distinguishing it from sleep [71]. The 19th century witnessed the use of hypnotic anaesthesia during hundreds of surgical procedures by surgeons like John Elliotson, James Esdaile, and Jules Cloquet, with morbidity deemed incredibly low during that period (40–45%) [72]. Despite the successful and safe use of hypnotic anaesthesia, its emergence as a competitor of inhaled anaesthetics was marred by controversy and political turmoil [72]. Notwithstanding its marginal use in comparison to anaesthesia, the British Medical Association advocated hypnosis for treating pain [72]. Amidst the World Wars, the practice of hypnosis for treating pain markedly upsurged on battlefields following shortages of pharmacological remedies [72]. These historical facts provide evidence supporting the usage of hypnosis as a treatment modality, particularly for pain.

In the last decade of the 19th century, the practice of hypnosis passed from surgical doctors to mental health professionals. After studying hypnosis with Jean-Martin Charcot and Hippolyte Bernheim, who largely influenced hypnotic theories and practice, Sigmund Freud rendered hypnosis a primary role in his psychotherapeutic approach [73]. Despite Freud's later stance and withdrawal from hypnosis, his derived hypnosis-informed elements, such as catharsis and the concept of resistance, continued to shape the therapeutic choices of psychotherapists, hypnotherapists, and clinicians [38,73].

The modern era of hypnosis research commenced in the 1930s with the substantial investigations of Dr Clark Hull and his student Dr Milton Erickson [74]. Erickson developed diverse psychotherapeutic approaches that often incorporated hypnosis and diverse hypnotic techniques such as direct suggestions, metaphors, and inductions [73]. He primarily examined the social-cognitive processes underlying hypnosis, behavioural responses to hypnotic suggestions, and the individual correlates of hypnotic suggestibility [75]. The Ericksonian hypnotic approach, which integrated indirect suggestions with psychoanalytical techniques, was adopted by psychotherapists, reigniting interest in hypnosis and further deepening the connection between hypnosis and psychotherapy [2,70]. During the 20th century, hypnosis found widespread utilisation in clinics and study settings, accompanying the expansion of Ericksonian hypnosis, the development of hypnotic suggestibility scales, and the advancement of research exploring hypnotic analgesia [72]. During this time of history, psychology and hypnotherapy appeared entangled, coinciding with research progress in the field of hypnotic analgesia [76].

In the 20th century, emerging research, highlighting the attentional and affective-cognitive pain determinants, guided the practice of hypnoanalgesia to modulate the cognitive components of pain [77]. The interest in utilising hypnosis for treating pain significantly grew following Theodore Barber's critical reviews of hypnosis for experimental pain and Ernest Hilgard's research on the analgesic effects of hypnotic dissociation [72]. Hilgard recognised that the pain experience is not solely influenced by painful stimuli but also depends on individual factors (e.g., expectations and beliefs) and the context in which pain occurs [2,70,78]. While the literature on hypnosis greatly influenced cognitive-behavioural pain modulation by emphasising the psychological aspects of pain, the early literature on pain seldom referred to hypnotic interventions [72]. Despite extensive experimental and clinical research in both cognitive and hypnotic pain control, the relationship between these two approaches was rarely investigated during the 20th century (1980–1990s, e.g., Ref. [12]), preventing the cross-fertilisation

of research endeavours [72]. However, in the 1990s, hypnosis was reported to be used for treating pain in more than a thousand surgeries and medical procedures [79]. In 1955, both the American and the British Medical Associations advocated including hypnosis in the medical curriculum. In 1958, a study by the Council on Mental Health of the American Medical Association endorsed the use of hypnosis in dental and medical practices. In 1960, the American Psychological Association recognised hypnotherapy as a division of psychotherapy, advocating its medical uses. In 1995, the American Medical Association and Technology Assessment Panel of the National Institutes of Health issued a statement supporting the use of hypnosis in treating pain with research suggesting its efficacy for chronic and cancer pain [72]. Thus, the 20th century witnessed a surge in research supporting the medical use of hypnosis, especially as a pain treatment, and the recognition of hypnotherapy as a branch of psychotherapy.

Interest in hypnosis increased during the 21st century with the upsurge in research suggesting its efficacy for various psychological and physical conditions [21]. Over the past four decades, the development of neurophysiologic techniques (e.g., electroencephalography) redirected the focus of hypnosis research towards exploring the physiological correlates of hypnotic responding [67,80]. Meta-analyses and systematic reviews indicated the utility of hypnosis for various medical conditions including acute and chronic pain [6,8,10–17], tension headaches and migraines [81], irritable bowel syndrome [82–85], and cancer-treatment side effects (e.g., nausea and vomiting) [1,86]. Hypnosis showed potential benefits in treating post-menopausal hot flashes according to an RCT [87] and neurodegenerative conditions, including amyotrophic lateral sclerosis, according to a longitudinal study [88]. A review and a randomised controlled trial supported hypnosis for smoking cessation [89,90]. Additionally, reviews indicated its potential effectiveness for weight loss [91] and various dermatological conditions including pruritus [21,92]. Hypnosis was also shown to be beneficial as an adjunct to pharmacological and non-pharmacological interventions for treating varied medical conditions including acute and chronic pain [6], children's procedural pain and distress [39], and symptoms of irritable bowel syndrome [93]. This research and historical evidence have supported the use of hypnosis as a treatment modality with diverse medical applications.

The integration of hypnosis with various forms of psychotherapy, both historically and in modern clinical practice and research, highlights the coupling of hypnosis and psychotherapy [9,39,94]. Research has frequently utilised hypnotic and posthypnotic suggestions to explore psychological functions and their neurocognitive mechanisms including memory, inhibition, perception, and motivation [38]. Meta-analyses and systematic reviews endorsed the use of hypnosis for psychological conditions such as depression [18], as well as anxiety and related disorders [5,19] including post-traumatic stress disorders [20]. Preliminary evidence additionally backed the amalgamation of hypnosis with psychotherapeutic interventions, including cognitive-behavioural therapy, relaxation, mindfulness, and distraction techniques, as a means to optimise therapy outcomes [39,94–96]. For instance, research suggested the utility of hypnosis as an adjunct to cognitive-behavioural therapy for promoting self-acceptance [97], smoking cessation, weight-loss, and treating various psychological conditions, such as obsessive-compulsive disorder, depression, and anxiety disorders [98]. Our previous review distinguished hypnotic and non-hypnotic interventions sharing similar procedures and phenomena to better understand hypnosis, emphasise specific areas warranting further investigations, and optimise therapies incorporating hypnotic techniques [47].

Despite the theoretical discrepancies and controversies that played a pivotal role in the history of hypnosis, agreements emerged amongst researchers on key hypnotic components, leading to the development of widely recognised hypnotic techniques [25,75]. In spite of the absence of an agreement on definitions of hypnosis, a consensus exists for common scientific language to describe hypnotic phenomena [25].

Notwithstanding the exaggerated allegations about the pain-relieving effects of hypnosis, theorists and researchers reached a consensus on the effects of hypnosis in modulating pain perception [72]. In accordance, the revised definition of the American Psychological Association (2015) depicted hypnosis as a treatment for medical and psychological ailments [24].

Conceptualisations of hypnosis as an add-on technique or treatment modality deriving from its medical use throughout history do not portray the historic entanglement of hypnosis with the current practice of psychotherapy [38]. Although hypnosis has been historically viewed and utilised as a treatment modality in medical contexts, particularly for pain, the depiction of hypnosis as a treatment in its own right is still argued about. Many experts consider hypnosis as an adjunct to therapy or a technique used to facilitate the therapeutic process in psychotherapy [38]. Hypnosis can facilitate psychotherapy by altering individuals' perceptions (e.g., hallucination), sensations (e.g., anaesthesia), movements (e.g., hand levitation), emotions (e.g., pleasant feelings) and cognitions (e.g., past regression) [38]. Further, although the dividing line between psychotherapeutic treatments and techniques appears clear, the boundaries between hypnosis and psychotherapy are not always clear.

1.2. Theoretical perspectives surrounding hypnosis

Several theories have attempted to explain hypnosis (Table 1) [23–37,99]. A systematic review identified the abundance of hypnosis theories and the presence of several reiterations of one theory that can be combined and presented as a single theory [100]. Our review presents prominent comprehensive theories that are deemed least derivative and overlapping with other theories and most empirically consistent with the research advancements that influenced hypnosis literature by pinpointing essential hypnosis components, phenomena, and influencing factors [100].

Psychoanalytic theories, representing initial attempts to explain

Table 1
A summary of theoretical perspectives surrounding hypnosis.

Theory	Focus
State theories (e.g., Ericksonian, conditioning, psycho-analytic)	Describe hypnosis as a distinctive state of modified awareness, established through induction and characterised by heightened suggestibility and automatic responding. Focus on hypnotic experiences and phenomena, including subjective, behavioural, and neurophysiologic alterations, that vary based on inter-individual hypnotic abilities [25].
Top-down theories (e.g., cold control)	Highlight the involvement of top-down metacognitive processes that alter attention, executive control, and cognitive monitoring in hypnotic responding [33].
Dissociative theories (dissociative experience, dissociative control)	Highlight the role of dissociation and dissociative tendencies in hypnotic responding [109].
Social-cognitive theories (e.g., response set and discrepancy attribution theories)	Describe hypnosis as a goal-oriented, non-automatic, active process depending on the hypothesised individual's response expectancies and willingness to actively adopt hypnosis [29,58,112–114]. Attribute hypnotic responding to the interaction of cognitive processes and psychosocial influences (e.g., the hypnotherapist's role, the context of delivery, and individuals' attitudes (e.g., views, demand characteristics)) [58]
Relational theories	Focus on the interpersonal processes and factors involved in hypnosis, such as the rapport, the relationship with the hypnotherapist, and hypnotic interactions [36,37].

hypnotic phenomena, depict hypnosis as an altered state of consciousness, based on Freud's distinction between conscious and subconscious processes [25]. Conditioning theories, based on state-focused approaches, describe hypnosis as a relaxed state between sleep and wakefulness characterised by conditioned responding and the inhibition of incompatible stimuli and responses [101,102]. Ericksonian theories, grounded in Erickson's clinically oriented approach, portray hypnosis as an altered state of consciousness in which personalised suggestions and multi-modal imagery are employed to access and resolve unconscious materials [31,32]. In turn, top-down theories highlight the involvement of top-down metacognitive processes that alter attention, executive control, and cognitive monitoring in hypnotic responding [33]. For instance, according to the cold control theory, hypnotic responses arise from diminished metacognition, that limits the accessibility of intentions and diminishes perceived control over responses, leading to experiencing automaticity and effortlessness [103]. Based on dissociation theories, hypnotic responding involves impaired self-monitoring eliciting a sense of involuntariness and effortlessness with reduced metacognition of agency (dissociated experience) or impaired executive control eliciting experienced automaticity (dissociative control) [34, 35].

Social-cognitive theories, such as the response set theory, attribute hypnotic responding to the interaction of cognitive processes and psychosocial influences (e.g., attitudes, beliefs, and demand characteristics) that impair self-monitoring [53,104]. In line with social-cognitive theories, the discrepancy attribution theory links hypnotic responding to cognitive and perceptual processes [105]. Relational theories emphasise the interaction between the hypnotherapist and hypnotised individuals while explaining hypnotic responding [36,37], and thus attribute hypnotic effects to the release of oxytocin [36] or the attachment style [37].

Theories of hypnosis are characterised by dichotomies over the existence of a unique hypnotic state and the role of induction in creating this state. Non-state theorists exclude the existence of a distinctive hypnotic state and reject the involvement of trance in generating responses to hypnotic suggestions. They describe hypnotic induction as the primary instruction to respond to suggestions, portraying hypnosis as a goal-oriented, non-automatic, active process reliant on the hypnotised individual's response expectancies and willingness to actively adopt hypnosis [53,99,104,106]. In contrast, state theorists describe hypnosis as a distinctive state of modified awareness, established through induction and characterised by heightened suggestibility and automatic responding accompanying subjective sensory, affective, and cognitive-perceptive alterations [99]. According to state theorists, describing hypnosis as a distinctive state distinguishes it from other therapies that do not involve subjective alterations in experience and underscores the role of hyper-suggestibility in hypnotic responding [99]. Subsequently, state theorists argue that not referring to the hypnotic state may limit hypnosis to the delivery and acceptance of suggestions, which prevents distinguishing hypnotic and non-hypnotic suggestions [23,99]. Recognising differences in hypnotic experiences, the American Psychological Association defines hypnosis as a state of focused attention and reduced peripheral awareness, characterised by sensory, perceptive-cognitive, or behavioural alterations following suggestions [24]. Although there is no consensus regarding descriptions of hypnosis, many researchers and theorists agree with the definition of the American Psychological Association [23].

Despite consensus regarding the increased responsiveness during hypnosis, controversy remains over the mechanism by which responsiveness increases [30]. Whereas state theorists claim that alterations in consciousness increase responsiveness, non-state theorists deny the existence of an altered state and claim that individual and social factors mediate hypnotic responses. Inconsistencies also remain around the role of hypnotic induction, the relation of hypnosis with suggestions, and definitions of related terminology such as *hypnotisability* and altered states of consciousness [99,107].

Despite divergences, hypnosis theories highlight important processes

and factors involved in hypnotic responding. State theories describe hypnosis as a distinctive state, distinguishing it from other interventions that do not involve subjective alterations in experience, and highlight the role of hyper-suggestibility as a major influencing factor in hypnotic responding [99]. Dissociation theories have significantly influenced contemporary views of hypnosis and sparked substantial research by describing the disruption of ordinarily conscious cognitive control processes during hypnosis, which highlights the role of dissociation and dissociative tendencies in hypnotic responding [49,108,109]. Non-state theorists emphasise the role of the situational context and individuals' demand characteristics in hypnotic responding, which explains why hypnotised individuals can respond to certain suggestions and resist suggestions contradicting their inner inclinations. Social-cognitive theories recognise the contribution of top-down cognitive processes in hypnotic responding, the goal-directed and strategic nature of hypnotic responses, and the essential role of participants' expectations, beliefs, and attitudes in generating non-volitional hypnotic responses [110]. By attributing variance in hypnotic responsiveness to higher sensitivity to discrepancy and increased focus, the discrepancy attribution theory highlights the role of motivation to be hypnotised, the setting, relaxation, and higher focus in hypnotic responses [105]. However, although hypnosis theories successfully highlight various factors of hypnotic responding, they fall short of comprehensively describing the multi-faceted hypnotic phenomena and can be limited by the inconsistency of supporting evidence.

Non-state social theories are supported by evidence of the role of the hypnotic context in hypnotic responding and the expectancy-mediated and goal-directed nature of hypnotic responses [26,49,53,111]. However, these theories do not adequately describe the subjective alterations in experiences that distinguish hypnotic responding from simple compliance with suggestions, such as the automaticity accompanying hypnotic responses, that were reported in highly suggestible individuals versus simulators [30,112,113]. Although some social-cognitive theories (e.g., response-set theory) incorporate automatic responding [53], social-cognitive approaches do not explain all aspects of the hypnotic phenomena and focus on conscious control and cognitive strategies, overlooking the automatic and involuntary nature of hypnotic responding [114].

The discrepancy attribution theory attributes higher hypnotic responsiveness to higher focus and sensitivity to the discrepancy, which may involve negative expectancies. This is contrary to evidence linking higher responsiveness to higher expectancies [115]. Further, research has shown that individuals with high hypnotic suggestibility did not differ from those with low suggestibility in attentional abilities [116] or sensitivity to discrepancy, as shown in their sense of agency [117]. Consequently, the fundamental premises underlying the discrepancy theory are incongruous with research findings that would otherwise substantiate key theoretical propositions.

Relational theories are supported by evidence of the interactional nature of hypnosis and the importance of therapeutic relationships and rapport in hypnotic responding [53,115]. However, these theories focus on rapport and interactional styles that, despite contributing to hypnotic responding, are neither essential nor enough to fully describe hypnosis. Thereby, these theories are unable to explain the multifactorial nature of hypnosis behind variance in hypnotic responding, nor the perceptual, cognitive, and behavioural alterations experienced during hypnosis. Further, studies have contradicted the attachment theories' assumption that hypnotic responding is mediated by oxytocin [118]. Although explaining interpersonal variables is important for understanding hypnosis, other processes and factors should be considered when explaining hypnosis, rather than focusing on a single perspective.

State theories are supported by evidence of subjective alterations in experience, including automaticity and increased hypnotic responsiveness [23,26,119–121]. For instance, specific hypnotic suggestions elicit neurophysiologic changes accompanying correspondent ideomotor, visual, cognitive-affective, sensory, and auditory responses, including

temporary amnesia, ideomotor responses, modified visual and auditory perceptions, or reduced pain following painful stimuli [122]. However, describing hypnosis as a distinctive state uses a singular set of features and neglects other important hypnotic phenomena and variables. Responses to different suggestions are not only due to trait hypnotic abilities, as postulated by state theories, but can also derive from compliance, imagination, expectancy, or a unique combination of these variables. Further, evidence is lacking regarding the physiological markers of the hypnotic state and mixed regarding the neural correlates of hypnotic responding [28,33,123]. For instance, claims that eye movements are indicators of the hypnotic state were based on observations of a highly suggestible individual [124] and were contradicted by a study that included individuals with low and high hypnotic suggestibility [125]. Furthermore, while psychoanalytic and state theories concerning hypnotic unconscious processes are supported by evidence of perceptual and sensory non-volitional experiences during hypnosis, it is important to note that these experiences are not exclusive to hypnosis [126].

Despite influencing contemporary hypnosis and psychotherapy, Erickson's postulations that hypnotic responding covary with ultradian rhythm are contrasted by evidence on the stability of hypnotic responsiveness and the involvement of top-down processes in hypnotic responses [110,127]. Contrary to conditioning theories, hypnosis cannot be solely reduced to a state of relaxation, although it may involve relaxation. This is evident in research on active-alert hypnosis, which evokes increased mental and physical activity [128,129]. Additionally, assumptions that hypnotic responding is conditioned are in contrast with research on the stability of hypnotic responsiveness over prolonged periods and disregard other factors influencing hypnotic responding such as motivation and attitudes [127]. In turn, top-down and dissociation theories are supported by evidence of alterations in corresponding neural systems, particularly in frontal networks that control and regulate top-down processes, as well as in communication between executive and monitoring systems [33]. However, these theories do not explain the different processes and factors of hypnotic responding, the inter-individual variability in hypnotic responsiveness, and neural observations in the executive functional network [108].

1.3. The root of controversies

Theories highlight essential hypnotic phenomena, procedures, and factors, but fall short in focusing on certain aspects of hypnosis and disregarding others (Table 1). Controversies in definitions and theories can be attributed to theorists' emphasis on the hypnotist or hypnotised individuals while explaining hypnosis [23,26,99]. Emphasising the hypnotist leads to depicting hypnosis as a technique involving procedures and specific roles, whereas emphasising hypnotised individuals depicts hypnosis as a set of phenomena involving subjective experiences characterised by inter-individual variability [23]. Due to variability in subjective hypnotic experiences, individuals may experience hypnosis differently by describing their hypnotic experience as a state of focused attention and relaxation or as a distinctive state of modified awareness [23,24,27,99,130]. Theoretical and conceptual controversies have prevailed along related myths portraying hypnosis as entailing simple compliance with suggestions, loss of control, amnesia, and a state of trance or *artificial somnambulism*. Although establishing the hypnotic context by describing the intervention as *hypnosis* instead of *relaxation* could increase hypnotic responsiveness [131], associating hypnotic responding with being in a state of trance versus cooperation reduced hypnotic responsiveness [132]. In spite of dichotomies, theories have not precluded progress in clinical practice with the shift of research from characterising the phenomenological features of hypnosis to investigating its clinical use in the 20th century [23].

2. Towards an integrative model of hypnotic procedures and phenomena

This section includes a model of hypnotic responding that describes hypnotic procedures, phenomena, and influencing factors, in line with prominent theories of hypnosis and Jensen's biopsychosocial model of hypnotic mechanisms (Fig. 1). The proposed model presents hypnotic procedures involving components and steps, as well as attitudinal and contextual factors influencing hypnotic responding, in line with social-cognitive theories. The neuro-mechanisms and effects of hypnosis along with biopsychological influencing factors are embedded in the model in line with the definition of hypnosis as a set of phenomena and state theories [67]. The model also includes hypnotic phenomena, entailing subjective, behavioural, and neurophysiologic alterations, that vary based on inter-individual hypnotic abilities [25]. Based on this model, hypnotic effects are not simply the product of hypnotic procedures but are influenced by variables related to hypnotised individuals, the hypnotist, and the context of delivery.

2.1. The core components of hypnotic procedures

Hypnosis is established with induction and involves delivering suggestions in a specific sociocultural context to elicit sensory, perceptual, cognitive, and behavioural alterations [24,26,117]. Hypnotic procedures consist primarily of three often overlapping phases or steps, comprising induction, suggestions, and de-induction. The preliminary pre-hypnotic phase involves establishing rapport, explaining hypnotic procedures, and collecting data on individual preferences and predisposing factors. This phase is intended to guide tailoring hypnosis by assessing individual needs and factors that can influence hypnotic responding.

The first hypnotic phase or induction comprises initial suggestions to prepare individuals for subsequent suggestions, establish the hypnotic context, promote focused attention, increase predisposition to respond to goal-directed suggestions, and enhance expectations of positive responses [23,80,133]. Hypnotic inductions typically involve describing the intervention as *hypnosis* to cue participants that the present situation may significantly deviate from ordinary conditions and promote responding to suggestions [131]. Inductions also entail instructions for relaxation, receptiveness to suggestions, and focused attention on an external object (eye-fixation) and/or internal experiences (breathwork, pleasant imagery) [133]. Inductions vary depending on the context of administration (e.g., hypnotherapy or standard hypnotic suggestibility scales), available time, individual preferences and characteristics, and the hypnotist's clinical considerations [110]. For instance, inductions can be brief (for a few minutes) or long (for 20 min or more) and can be passive (with eyes closure and relaxation) or active (with eyes open and alertness) [80,99].

Considerable empirical evidence indicates that inductions often yield limited or negligible impact on hypnotic responsiveness and may not be essential for the effectiveness of suggestions [134,135]. Even when inductions enhance responsiveness, their effect is typically modest when compared to other factors such as motivation, responsiveness to targeted suggestions in non-hypnotic contexts, fantasy-proneness, or absorption capacities [136,137]. Therefore, while induction is commonly included in the standard hypnotic procedures, its specific contribution to responses to subsequent hypnotic suggestions remains uncertain.

The second hypnotic phase involves delivering suggestions referring to verbal communications, prompting individuals to perform varied actions (e.g., motor, cognitive, perceptual) in a hypnotic context to elicit correspondent responses entailing targeted changes in overt behaviour, cognitions, affect, sensations and/or perceptions [99,110]. In hypnotherapy, suggestions are a therapeutic vehicle to treat or explore problems and can thus be used in a hypnotic context to promote positive therapy outcomes such as relaxation, pain relief, adaptive coping, and/or perceived self-efficacy [110]. Although hypnosis is not limited to

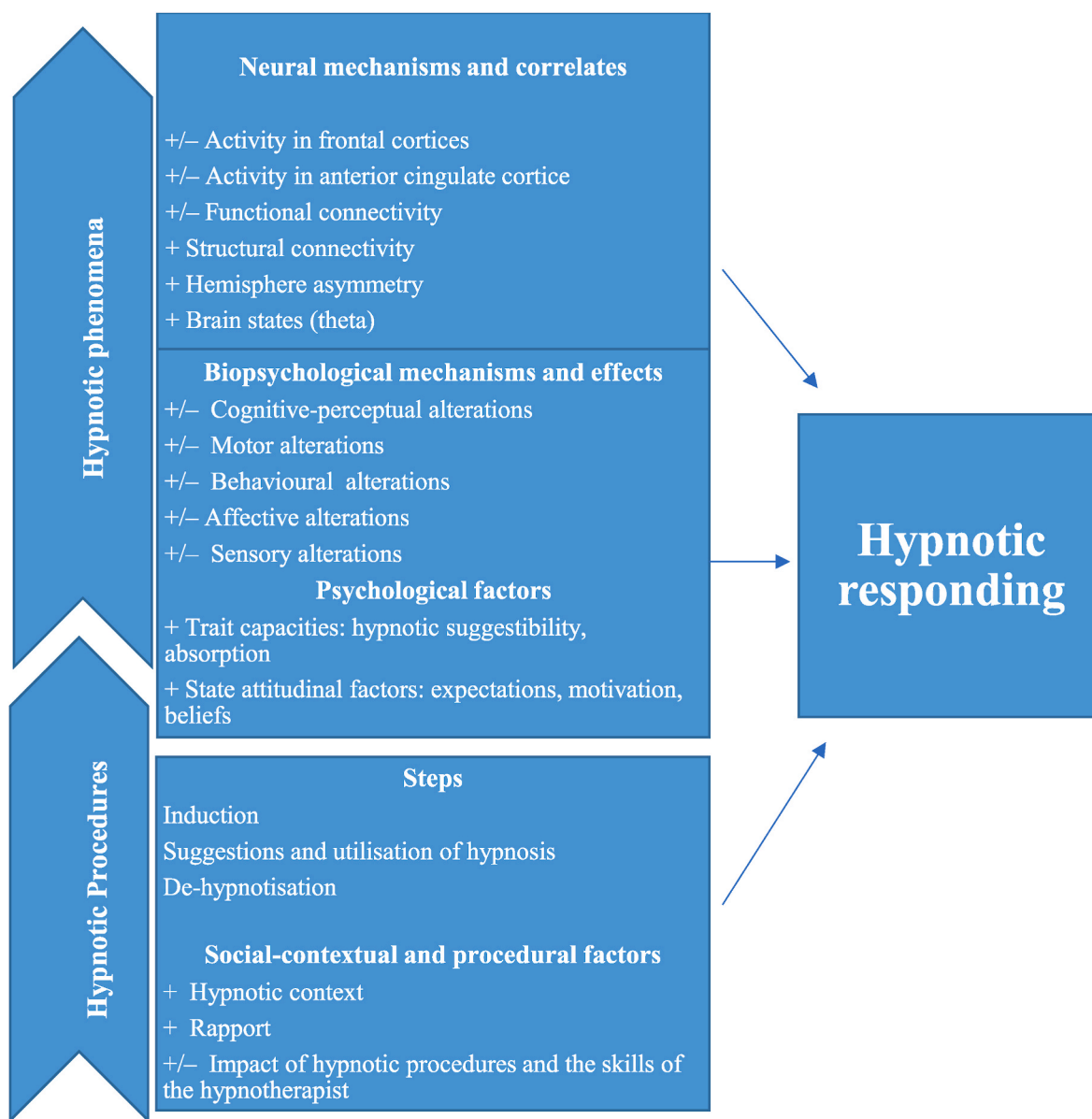


Fig. 1. A model of hypnotic responding.

delivering suggestions, suggestions are essential for hypnotic outcomes as suggested by evidence of therapeutic effects following suggestions without induction [71].

Intensification suggestions, entailing imagery and direct test suggestions, are usually delivered after induction, to promote absorption and expectations of positive responses to subsequent suggestions [138]. Intensification test suggestions include simple direct ideomotor and challenge suggestions (e.g., eye catalepsy). Direct-ideomotor suggestions induce a movement in the absence of conflicting sensory information by suggesting movements (e.g., instructions to lower hands) or a stimulus typically associated with corresponding movements (e.g., a heavy weight causing a hand-lowering response) [139,140]. Challenge-ideomotor suggestions entail the suppression of movements, followed by instructions to induce movements that counteract the primary suggestions and serve as a test for inhibitory motor suggestions (e.g., suggestions for arm-immobilisation followed by instructions to lift the hands) [139]. Following positive responses to intensification test suggestions, therapeutic suggestions are usually administered in line with therapy goals [72]. These therapeutic suggestions involve hypnotic suggestions that elicit effects experienced during hypnosis followed by

post-hypnotic suggestions intended to produce therapeutic effects following the hypnosis session [141,142]. Post-hypnotic suggestions are widely used in experimental hypnosis and can be valuable in hypnotherapy [110]. The third hypnotic phase, known as de-induction, entails suggestions to conclude hypnosis, redirect attention to the external environment, and restore ordinary alertness with typical expectations about one's behaviour and perceptions of external stimuli [139,143].

Suggestions can vary based on the required action, the targeted psychological function (nature of the elicited response), phrasing style, and content (Table 2) [25,142,144]. For therapeutic purposes, suggestions can differ in content or incorporated details, allowing tailoring hypnosis to individual needs, preferences, and the factors influencing hypnotic responding (Table 2) [141]. For instance, content suggestions can enhance absorption and visualisation, while process suggestions facilitate tailoring by enabling hypnotised individuals to project their preferences into the hypnotic experience [141]. Early research, using standard hypnotic suggestibility scales, has shown minimal differences in resistance to suggestions between standard and tailored hypnotic suggestions [144,145]. However, little is known regarding the selection of content suggestions in hypnotherapy. Further research is thus

Table 2
Classification of hypnotic suggestions.

Classification base	Suggestion type	Definition	Example	
Type of action [25] Targeted psychological function [25, 35]	Facilitative	Inducing an action	Lifting the hand	
	Inhibitory	Inhibiting an action	Eye catalepsy	
	Perceptual	Targeting perceptions (e.g., auditory, visual)	Positive hallucinations for perceiving stimuli that are not actually present, such as colour hallucinations where a grayscale is seen in distinct colours [150].	Negative hallucinations eliciting agnosia of the present stimulus, such as the hypnotic reduction of pain inflicted by a noxious stimulus [6].
		Motor/Ideomotor	Targeting movement (e.g., inducing involuntary or reflexive muscle movements)	Direct: suggestions for arm heaviness by imagining heaviness or a stimulus that produces it such as weights [139] Challenge: suggestions for hands' heaviness followed by instructions to lift the hands [139]
	Affective	Targeting feelings and emotions	Suggestions for mood changes (more positive mood)	
	Sensory	Targeting kinaesthetic experiences and sensations (ideosensory suggestions eliciting, visual, auditory, gustatory, or olfactory mental imagery invoking the senses)	Imagining eating a sour lemon which stimulates saliva secretion [141]	
		Cognitive	Targeting cognitive functions or top-down processes (modifying or substituting response to external stimuli, enhancing adaptive cognitive functioning)	Retrieving memories by past regression
	The extent of provided details [141]	Content	Providing a detailed description of the desired response, detailing the content of the person's thoughts, perceptions, beliefs, and experiences	<i>Imagine being in a garden with red roses that make you feel happy.</i>
		Process	Providing minimal details of the desired response, directing the attention and imagination towards engaging in a particular mental activity or journey	<i>Imagine being in your favourite place where you experience pleasant feelings.</i>
	Phrasing style [144]	Direct	Involving a clear request for a particular desired response with specific directions on how to respond	Instructions for eye closure (e.g., <i>close your eyes</i>)

Table 2 (continued)

Classification base	Suggestion type	Definition	Example
	Indirect	Delivered with a degree of ambiguity that relates to the desired response in a concealed or discreet way without explicitly specifying the action required for the desired response	Analogies, embedded suggestions, and metaphors (e.g., <i>allow your eyes to become like gentle curtains, softly closing and creating a peaceful sanctuary within</i>)
	Negative	Using language and instructions to discourage or reduce unwanted responses	Suggestions for the absence of pain (e.g., <i>you feel no pain</i>) [141]
	Positive	Using language and instructions eliciting positive responses	Suggestions for numbness (e.g., <i>you feel numbness</i>) [141]

required to examine the effects of tailored versus standardised hypnotic protocols and the benefits of cocreating imagery as appropriate for individual imaginative capacities.

Suggestions can be worded using different phrasing styles as tailored to individuals' preferences, cognitive capacities, and language skills (Table 2) [141]. Evidence regarding the impact of the wording style on subjective hypnotic experiences, such as involuntariness and pain, are mixed with the lack of research on the correlation between the degree of hypnotic responding and the wording of suggestions [144]. Early research has indicated the superiority of direct suggestions in modifying hypnotic experiences but evidence are lacking regarding the effects of indirect suggestions [146]. A recent meta-analysis additionally identified that substantial pain reductions were linked to the use of direct suggestions and a moderate to high degree of hypnotic suggestibility [6]. In contrast, early studies, using standard hypnotic suggestibility scales including direct test suggestions, showed a minimal difference in resistance to suggestions and the level of hypnotic responding with direct and indirect suggestions [145]. Further, a meta-analysis indicated that the use of one type of suggestions for all individuals without taking into account their hypnotic responsiveness may influence hypnosis outcomes [147]. Although evidence on the relation of suggestions' phrasing with hypnosis pain and distress outcomes in children lacks in systematic reviews [147], direct and indirect suggestions were equally effective in a study examining hypnosis for children's procedural pain [148]. Despite the ongoing debate around the relative benefits of indirect hypnotic suggestions, there has been a consensus that an adequately tailored combined use of both indirect and direct suggestions is likely to optimise hypnotic responding.

Variability in hypnotic effects can also be attributed to factors that can influence hypnotic responding beyond the phrasing of suggestions. For instance, individuals with high hypnotic suggestibility can experience more pronounced alterations in cognitions, perceptions, and the sense of agency, in response to specific suggestions [149]. The limited research on hypnotic components and the difficulty in isolating specific suggestions make it challenging to determine the effects of different suggestions and their utility.

The domain of hypnosis encompasses responses to specific types of suggestions, entailing alterations in overt behaviour, cognitions, perceptions, sensations, and the voluntary control of behaviours [71]. Subsequently, the hypnotic domain encompasses quantifiable and observable modifications in overt behaviours, perceptions, and cognitions, as well as in the subjective experience of agency, known as the sense of agency or the sense of conviction. The subsequent section will provide an overview of the objective and subjective effects of suggestions and the main features of hypnotic phenomena.

2.2. The key features of hypnotic phenomena

Phenomena refers to observable events or facts that are studied and analysed within a scientific framework to understand their underlying principles, behaviours, and relationships [151]. Hypnotic phenomena entail diverse sensory, motor, perceptual, cognitive, affective, and behavioural alterations in response to suggestions in a hypnotic context. Despite conceptual divergences, it is acknowledged that hypnotic phenomena involve subjective alterations in top-down mental metacognitive processes, such as cognitive monitoring, attention, and executive control [111,152]. The reduced metacognition and altered sense of agency are important phenomenological features that allow distinguishing hypnotic responding from simple compliance with suggestions [25,71,104,112,153]. Accordingly, motor, cognitive, affective, perceptive, behavioural, and/or sensory alterations occurring in response to hypnotic suggestions are likely to be experienced with minimal effort, a sense of involuntariness, and verisimilitude (i.e., perception as real) [71]. Early studies have reported high ratings of experienced reality during hypnotic responding, indicating that verisimilitude is a primary feature in hypnotic responding [25,71,154,155]. A plethora of reviews and theories have emphasised alterations in the sense of agency during hypnosis due to the prevalent sense of semi-automaticity, effortlessness, and involuntariness during hypnotic responding [71,110,137,156–158]. Further, neurophysiology studies have provided evidence for the involuntary and effortless nature of hypnotic responses and the heightened sense of reality towards hypnotic experiences [117]. Alterations in the sense of agency can influence overt hypnotic responding, as shown by the strong correlation between observed positive responses to hypnotic suggestions and the sense of involuntariness experienced during these responses [159]. However, experiencing a sense of involuntariness does not necessarily imply losing control, as hypnotised individuals can resist suggestions that conflict their inner inclination or expectations [160,161]. Thus, in accordance with research findings, hypnotic suggestions differ from simple instructions in that they induce responding effortlessly and intentionally, without coercion or reduced willpower, but rather by interrupting critical judgement and altering the sense of agency [26,27,44,112,142,162,163].

Although response expectancies that mediate placebo responses also contribute to hypnotic responding, the reduced metacognition of intentions distinguishes hypnotic responses from placebo responses [53,71]. This reduced metacognition is postulated to promote hypnotic responding by reducing the accessibility of intentions and thereby inducing a perceived reduced sense of agency over hypnotic responses that are experienced semi-automatically and effortlessly [103,149]. Hypnotic suggestions also allow modulating attention, mental selection of internal hypnotic experiences, and absorption, entailing executive, focal, and attentional cognitive processes of self-engagement towards inward hypnotic experiences [164–166]. Accordingly, focused attention and absorption are primary features of hypnotic experiences [7,26,110,162,167].

2.3. Influencing factors

Theoretical models depicting hypnosis as a technique focus on social and procedural factors of hypnotic responding, whereas theories describing hypnosis as a set of phenomena focus on individual factors. Thus, considering diverse theoretical perspectives, hypnotic effects are not merely due to the delivery of hypnotic procedures but are influenced by several individual and social-contextual factors [33,67]. Social-contextual factors are related to the hypnotherapist and the context of delivery, while individual factors encompass trait hypnotic capacities (that may be stable over prolonged periods) and modifiable state psychosocial and cognitive variables [67,141].

State psychosocial factors, including participants' willingness to be hypnotised [137,168], expectations [169], rapport with the

hypnotherapist [170], and motivation to respond to suggestions [171], are important determinants of hypnotic responding. Nevertheless, the correlation between cognitive abilities and hypnotic responding is intricate. While some recent neurocognitive studies indicated a positive correlation between hypnotic suggestibility and performance on cognitive tasks [172–174], other studies found no significant correlation [116,175]. Dissociative tendencies, involving a mild disruption in integrating feelings, thoughts, and experiences in the stream of consciousness [176,177], may moderate the relation between cognitive capabilities and hypnotic suggestibility [108]. This implies that individuals with higher dissociative tendencies may rely less on cognitive abilities when responding to suggestions compared to those with lower tendencies [108,178,179]. However, our review does not examine social personality variables (e.g., social desirability), psychopathologies, dissociative traits, paranormal phenomena, and supernatural beliefs. This is based on the limited evidence regarding their relationship with hypnotic responding and the difficulty of assessing and addressing these factors in acute clinical settings [50,141].

2.3.1. Individual trait factors

Since early use of hypnosis, clinicians, researchers, and theorists have acknowledged individual variability in hypnotic responsiveness. Furthermore, concepts such as hypnotic depth, hypnotisability, susceptibility, and suggestibility have played a significant role in shaping our understanding of hypnotic responses, thereby influencing the practice, theory, and measurement of hypnotic responsiveness [180]. The main trait psychological variables that can influence hypnotic responding include hypnotic suggestibility, absorption, and imagination capacities [50]. Although correlates of hypnotic responding in children may parallel those in adults, evidence is still limited in children.

2.3.1.1. Hypnotic suggestibility. Hypnotic suggestibility, referring to the capacity to experience behavioural, affective-cognitive, and physiological alterations in response to hypnotic suggestions, is an important factor of hypnotic responding [70,142]. High hypnotic suggestibility is characterised by altered metacognition, as evidenced by reduced meta-cognition pertaining to motor responses intentions and an altered sense of agency in highly suggestible individuals [117,181]. Research has shown a shared mechanism and link between responsiveness to specific suggestions and alterations in the sense of agency [182]. Hypnotic suggestibility is normally distributed in the general population with a majority displaying medium hypnotic suggestibility (70–80%) and a minority displaying low or high suggestibility (10–15%) [35,183]. Variability in hypnotic suggestibility can be due to individual factors such as psychological and genetic characteristics [49,184]. A study with 140 pairs of monozygotic twins aged between five and 22 years showed genetic contribution to hypnotic suggestibility ($r = 0.63$) [78]. High correlations were observed between catechol-O-methyl transferase polymorphism of two amino-acid forms (valine and methionine) and hypnotic suggestibility, with a strong additive effect of the valine allele, that is more predominant in highly suggestibility individuals [185,186]. Although increased suggestibility has been observed among girls, research on gender differences in hypnotic suggestibility is lacking and may present interpretive difficulties [187]. Early studies in the 60s and 70s indicated that children exhibit no gender differences in hypnotic suggestibility and generally display higher hypnotic suggestibility compared to adults [78,188,189]. According to these studies, hypnotic suggestibility is limited under the age of three years, increases to reach a peak between seven and 14 years, slightly declines in adolescence and remains constant through adulthood. Yet, hypnosis has been shown to be effective for procedural pain in children between two and 19 years [190]. A modest but positive correlation ($r = 0.43$) between IQ and suggestibility scores has been documented in children, but findings are inconsistent with the little evidence available on the role of developmental factors in hypnotic responding [187,191,192].

A recent meta-analysis of 85 trials examining the effectiveness of hypnosis for acute pain in 3632 participants indicated significant pain reductions in those with moderate-to-high hypnotic suggestibility and minimal benefits in those with low suggestibility [6]. High hypnotic suggestibility is not required for positive responses to many hypnotic suggestions and thus individuals with moderate hypnotic suggestibility can benefit from hypnosis due to their ability to respond to specific suggestions [193]. Nevertheless, the best candidate for hypnosis is a highly suggestible and motivated individual with whom the use of specific suggestions can modify physiological responses and subjective experienced alterations [27,142,194]. Despite evidence on the relation between placebo responsivity and hypnotic suggestibility, research comparing hypnotic analgesia and placebo responses is limited [195–197].

Contrary to non-state theorists' claims, hypnotic suggestibility has been conceived as a stable trait in adulthood rather than a learned modifiable ability as shown by high test-retest reliability of suggestibility tests ($r = 0.64\text{--}0.82$) over prolonged durations (15–25 years) [67,127,194,198–200]. Despite the evidence that hypnotic suggestibility can be modified through psychological and pharmacological interventions, attempts to alter hypnotic suggestibility have yielded mixed findings and there is still a poor understanding of the extent and reliability of these alterations [194,201–203]. Modifying hypnotic suggestibility scores by altering responses to test suggestions is believed to be through targeting potentially modifiable individual factors of hypnotic responding (e.g., attitude) that can influence the variability in correlations between hypnotic suggestibility and hypnosis outcomes [194]. This is consistent with research showing that the correlation between hypnotic pain reduction and hypnotic suggestibility varies in studies, ranging from weak ($r = 0.25$) to strong ($r = 0.55$) [67]. More recent studies have also demonstrated a temporary increase in hypnotic responsiveness through the neuromodulation of related cerebral activity using transcranial magnetic stimulation [203,204]. The variability in correlations between hypnotic suggestibility and hypnosis outcomes may result from inter-individual differences in the cognitive levels and ages of study participants. For instance, higher correlations have been observed in cases of acute and procedure-related pain in children ($r = 0.50\text{--}0.81$) [205–207]. However, studies on hypnotic suggestibility have predominantly focused on adults, making it challenging to generalise their findings to children, with whom data still lack on hypnotic suggestibility and its effect on hypnotic analgesia [15].

The magnitude of hypnotic effects is likely to be more pronounced in individuals with high suggestibility but may vary for specific responses within these individuals [71]. This variability may be due to the hypnotic context and techniques that may influence the extent to which hypnotic suggestibility may enhance outcomes. For instance, preliminary data indicates high involuntariness in verbal and motor responses to specific suggestions among individuals with high suggestibility [110]. The degree to which inductions may enhance hypnotic responding and consequently intensify behavioural and individual experiences was also reported to correlate with the presence of a hypnotic context in addition to hypnotic suggestibility [131,208].

2.3.1.2. Absorption and imaginative involvement. Research examining personality correlates of hypnotic responsiveness has primarily focused on absorption and imaginative involvement or fantasy proneness. Mental absorption is viewed by state and non-state theorists as a cognitive ability underlying individual differences in hypnotic responding and an essential feature of hypnotic responding [121,162]. Imagination involvement, referring to the cognitive capacity to generate vivid mental images and perceive those images as though they were real, has been postulated to play a central part in absorption and hypnotic responding [51]. Studies in adults have indicated that fantasy proneness or imaginative involvement are major aspects of absorption and correlate with the level of hypnotic responding [209,210]. However, weak to

moderate correlations between absorption or imaginative involvement and the level of hypnotic responding have been consistently reported ($r = 0.17\text{--}0.44$) [45,166,195,210]. The range and strengths of these correlations underscore the potential influence of moderating factors on the strength of correlation, and consequently the impact of absorption and imagination capacities on hypnotic responding. The correlation between absorption and hypnotic responding was weak in nonhypnotic contexts, moderate in hypnotic contexts, and high in imaginative contexts, suggesting that absorption capacities can enhance hypnotic responding, particularly in hypnotic and imaginative contexts [26,142,194]. Thus, while absorption can influence hypnotic responding, the extent of enhancement in responding can be modified by other factors, such as individuals' attitudes towards hypnosis and the context of delivering hypnotic interventions [166].

2.3.2. Individual state factors

Social-cognitive theorists propose that individual state factors, including attitude and demand characteristics, which involve therapy expectancies, motivation, and views towards hypnosis, play a crucial role in hypnotic responding and outcomes [48–52]. According to social-cognitive theories and definitions depicting hypnosis as a technique, the induced experiential set, resulting from one's attitude towards hypnosis coupled with suggestions in a hypnotic context, can distort the sense of agency experienced during hypnotic responding [112]. However, evidence is mixed with research indicating its weak to moderate correlation with phenomenological and behavioural responses to hypnotic suggestions ($r = 1.13 - 0.41$) [155,194]. In addition, despite the role of demand characteristics and response expectancies in hypnotic responding, the degree of verisimilitude experienced during hypnotic responses was not attributed to demand characteristics [211]. Further, findings on the relation between attitude (involving views, motivation, and expectation) and hypnotic responding are lacking and inconsistent, indicating weak to moderate correlations ($r = 0.1\text{--}0.31$), with the highest correlations found for expectations and motivation [212–214]. In conclusion, it can be inferred that not all attitudinal factors are equally important for hypnotic responding, with expectation and motivation emerging as the most influential contributors to hypnotic responses.

Response expectancies have been theorised to moderate the relationship between personality variables and hypnotic responding, in accordance with research linking them to absorption and fantasy proneness [104]. Additionally, the claims of theorists regarding the role of expectancies in hypnotic responding are supported by evidence of enhanced behavioural hypnotic responses and hypnotic analgesia associated with increased response expectancies [194,215,216]. Whereas willingness or motivation to be hypnotised and positive views of hypnosis are postulated to enhance hypnotic responding, negative attitude featuring hostility and reduced compliance can impede hypnotic responding and engagement in therapy [51,67]. While there are widespread beliefs and evidence that positive attitudes can enhance hypnotic responding in adults, to our knowledge, research lacks on children's attitudes towards hypnosis due to the absence of formalised assessment tools [214]. Therefore, further research is needed to explore the relationship between hypnotic responsiveness and attitudes toward hypnosis, especially in children.

2.3.3. Social and contextual factors

In addition to individual factors, social and contextual factors, such as the rapport with the hypnotherapist and the context in which suggestions are offered, can influence hypnotic responding [67]. The presence of a hypnotic context allows distinguishing hypnotic suggestions from simple instructions or non-hypnotic suggestions and contributes to enhancing behavioural and involuntary hypnotic responses [131,136,150,217–219]. Describing interventions as *hypnosis* is one of the key features of hypnotic inductions and was shown to enhance therapy expectations and hypnotic responding [131,219–221]. Studies

have indicated that the correlation between hypnotic suggestibility and hypnotic responding increases in a hypnotic context and decreases when the intervention is not labelled as *hypnosis* ($r = -0.34 - -0.65$) [67]. These findings suggest that the hypnotic context can moderate the relationship between hypnotic suggestibility and responsiveness to suggestions.

Establishing rapport with the hypnotherapist can also influence hypnotic responding by enhancing the readiness and motivation to respond to hypnotic suggestions effortlessly and involuntarily. Rapport was shown to influence the extent to which expectancies can enhance hypnotic responses including non-volitional responses [110,160]. Studies have shown that rapport with the hypnotherapist is accentuated in individuals with high suggestibility and correlates with the level of experienced automaticity during hypnotic responses [222]. A study involving training to alter hypnotic suggestibility showed that rapport correlated with hypnotic suggestibility ($r = 0.49$, $p < .001$) and hypnotic responses ($r = 0.42$, $p < .001$) [222]. Early studies have indicated that positive rapport can enhance hypnotic responding whereas negative rapport can hinder responding [223]. Similarly, a more recent study indicated weak to moderate positive correlations between positive rapport and hypnotic suggestibility ($r = 0.18-0.33$) in addition to the negative correlation of negative rapport and observed tension with hypnotic suggestibility ($r = -0.07 - -0.22$) [224]. While rapport can enhance hypnotic responsiveness in individuals with low hypnotic suggestibility, it is important to note that hypnotic suggestibility may moderate the impact of rapport on hypnotic responsiveness [225]. This explains the ability of individuals with high suggestibility to respond to hypnotic suggestions without established rapport. In addition to building rapport, the role of the hypnotherapist is crucial in fostering trust, cooperation, motivation, and a positive attitude involving high response expectancies, while addressing maladaptive coping and misconceptions, to promote hypnotic responding and outcomes [137].

3. Discussion

In spite of continuous endeavours from researchers, clinicians, and theorists to resolve fundamental disagreements, theoretical divergences remain, prompting misconceptions and hindering the adequate understanding of hypnosis. For instance, there are still disagreements about whether hypnosis constitutes a distinct state, whether hypnotic suggestibility is a stable trait, and whether the clinical utilisation of hypnosis can be aptly conceptualised as hypnotherapy. Theories of hypnosis are broadly divided into state and socio-cognitive approaches [69]. The state approach portrays hypnosis as a distinctive state characterised by enhanced focus, absorption, dissociation from surroundings, and augmented responsiveness to suggestions [99]. In contrast, socio-cognitive approaches denounce describing hypnosis as a special state of consciousness and emphasise the contribution of individual cognitive processes and social-contextual factors in hypnotic responding [106,226–229]. There is also an ongoing debate concerning the classification of hypnosis, specifically regarding whether it can be regarded as a treatment modality in its own right.

Although dichotomies and discrepancies have marked the history of hypnosis, broad agreement emerged amongst theorists on hypnotic key components, effects, and scientific vocabulary [230]. For instance, there is a consensus that the effects of hypnotic suggestions on altering subjective experiences extend beyond mere relaxation or compliance and involve a reduced sense of agency that does not preclude individuals from resisting suggestions [69]. In contrast to portraying hypnosis as mystical, overstating its efficacy, and dwelling on theoretical controversies, this review carefully examines hypnosis in theory and practice to improve its acceptance among clinicians and the broader community.

Beyond conceptualisation, understanding hypnosis in the context of broader therapeutic interventions can enhance the comprehension of the relational complexities of interpersonal and intrapersonal communications, as well as the interaction of mind and bodily processes in

psychotherapy and healthcare [231]. This allows using the power of suggestions, building positive expectancies, and enhancing motivation to elicit positive changes in the body and psyche. For instance, hypnotherapists, clinicians, and psychotherapists can use hypnosis to promote positive therapy outcomes through facilitating catharsis and shifts in mindsets and cognitive processes. Embedding hypnosis in therapeutic interventions necessitates advanced clinical training to develop the skills to think and act therapeutically and adaptively when addressing the various issues for which individuals seek hypnotic assistance [38]. As commitment to not harm is essential in therapy, therapists are advised not to use hypnosis for treating a condition that they are unable or unwilling to treat in non-hypnotic contexts [38]. It is attainable to develop, refine, and apply a therapeutic approach to hypnosis through understanding the communication between the mind and the body, the empathic connection between therapists and clients, and the emergence of non-volitional experiences through a reconfiguration of the conventional boundaries of the self [38].

Despite covering a range of hypnotic phenomena, procedures, and factors, theories fall short on accounting for other hypnotic aspects [69]. For instance, social-cognitive theories focus on social and procedural variables whereas state theories focus on the biopsychological mechanisms, effects, and individual factors of hypnotic responding. Further, existing theories are limited by the inconsistency of supporting evidence as they describe specific aspects of hypnosis but fail to offer a comprehensive description of the multi-faceted hypnotic phenomena [69]. Although studies have identified different groups of individuals with high hypnotic suggestibility [108,178,179], theoretical distinctions fail to account for the intra-individual differences in hypnotic responding [233]. Hence, it is essential for a viable theoretical explanation to effectively account for both the observed intra-individual and the inter-individual variations in hypnotic responding. Adequately explaining hypnosis requires integrating different perspectives and theories to understand the multiple hypnotic phenomena, procedures, and factors rather than focusing on a single approach or a set of phenomena or factors, as previously done in prominent theories. This review presents prominent hypnosis theories in a way that offers a plausible examination of empirical findings and not a subset thereof by taking into account the complex multi-factorial and multi-phenomenal nature of hypnotic responding [100].

Prominent theories of hypnosis have important research and clinical implications by pinpointing factors that can influence hypnotic outcomes [49], which should be considered when planning research. Non-state theories emphasise social-contextual (e.g., hypnotherapists' skills, the hypnotic context) and individual state variables (e.g., attitudes, demand characteristics) [30,111]. For instance, modern theories highlight the importance of expectations, self-directed cognitive strategies, and variations in frontal executive functions in facilitating responses to hypnotic suggestions [104,119,155,232]. These theories highlight the importance of building trust and a positive attitude by promoting motivation, positive expectations, and the active engagement of individuals in hypnosis. In turn, state theories recognise the subjective nature and inter-individual variability of hypnotic responses and experiences, and thereby underscore the importance of hypnotic trait abilities such as hypnotic suggestibility, in line with research on trait factors influencing hypnosis. Accordingly, theories draw attention to multilevel factors, related to individuals receiving hypnosis, the hypnotherapist, and clinicians, as well as the local context that may influence the acceptability, feasibility, and therapeutic outcomes of hypnosis. The impact of these factors on hypnotic responding is described in this review to show the importance of assessing and targeting them and identify knowledge gaps to address in future research [67].

Integrating diverse theories and reconciling theoretical perspectives with research evidence are important to adequately describe hypnotic procedures, phenomena, and factors. This review concludes with a model, integrating theoretical views and research evidence, that depicts hypnosis as a complex multi-factorial intervention. According to this

integrative model of theories, hypnosis is a complex intervention involving procedures that interact with contextual and attitudinal factors as well as phenomena comprising experienced alterations that are influenced by inter-individual trait variables. Accordingly, the effects of hypnosis are not only the result of hypnotic procedures but also trait and state variables related to hypnotised individuals, the hypnotherapist, and the context of delivery. The terms *hypnotherapy* or *clinical hypnosis* are used in this review to refer to the therapeutic use of hypnosis in respectively psychotherapeutic and healthcare contexts [23,110]. Explaining hypnotic phenomena, procedures, and influencing factors is intended to optimise the understanding, use, and evaluation of hypnotic treatments by facilitating their replication, acceptance, and implementation.

Based on our model, future evaluation could be aligned with the methodology for complex interventions drawing on implementation science to account for the complexity of hypnotic components and phenomena and their interaction with contextual factors [234]. For instance, a quiet environment, lack of interruptions, and having ample available time are conditions conducive to conducting hypnosis along with positive views of clinicians, access to hypnosis, and the availability of training [9]. Evaluating hypnosis as a complex intervention requires posing research questions that extend beyond its effectiveness and explore whether and how hypnotic interventions are acceptable, implementable, sustainable, scalable, and transferable across contexts. This can be done using frameworks such as that of the Medical Research Council and the National Institute of Health Research in the UK [234]. Questions that align with a complex intervention approach could encompass the relative value of hypnosis compared to other interventions such as distraction, the ability to implement and sustain hypnotic interventions within acute healthcare settings, the feasibility and acceptability of hypnosis, and how its accessibility could inform decision-making in real-world settings, such as reducing the use of pharmacological methods with their associated adverse effects to manage medical and psychological conditions [39,235,236]. By employing the methods outlined in future evaluations, theories regarding hypnosis could be refined, which, in turn, could guide the development of innovative new theory-informed hypnotic interventions.

3.1. Strengths and limitations

This review discusses major theories that can be drawn on to design hypnotic interventions, support implementation, structure evaluation, and alleviate theoretical controversies that have hindered the adoption of hypnosis. Despite not systematically reviewing theoretical evidence, this review discusses prominent theories based on a systematic review [69]. Instead of using a singular set of features as in previous developed theories, this review provides a model integrating different theoretical perspectives to comprehensively explain the complex multi-modal and multi-factorial nature of hypnosis entailing diverse procedures, phenomena, as well as intra and inter-individual factors. Consequently, this review comprises a major step towards advancing knowledge of hypnotic procedures and phenomena to promote replicating and comparing hypnotic interventions. This review also provides accurate information that holds significance in advancing knowledge and identifying areas that require exploration in further research [67].

As evidence are lacking on the correlates of the hypnotic state and inconsistent regarding the neurophysiologic changes underpinning hypnotic responding, neurophysiology studies are presented in this review to explain hypnotic effects, mechanisms, and inter-individual trait variability in hypnotic responding. For instance, findings on the neuro-mechanisms of hypnotic analgesia are presented to further support the previously reported findings regarding the effects of hypnosis on pain and distress.

4. Conclusion and future directions

This review presents different prominent theories of hypnosis, highlighting their salient strengths and heuristic values, while pinpointing their shortcomings, to allow understanding the domain of hypnosis phenomena more comprehensively. The review pinpoints agreements across theoretical approaches [230] including key hypnotic components, vocabulary, and effects on altering subjective experiences that surpass mere relaxation or compliance and reduce the sense of agency without preventing resistance to suggestions [69]. Thus, instead of dwelling on dichotomies, this review examines how theories overlap, highlights their clinical implications, and integrates diverse theoretical perspectives to allow knowledge on hypnosis to be advanced.

The review also proposes a model integrating empirical, clinical, and theoretical approaches to hypnosis to address dichotomies and shortcomings in hypnosis literature. Taking into account major hypnosis theories, the model portrays hypnosis as a complex multi-faced intervention encompassing multiple phenomena and procedures. According to this model, hypnotic effects are not merely produced by hypnotic procedures but are also influenced by trait and state variables related to hypnotised individuals, the hypnotherapist, and the context of delivery. By providing a comprehensive explanation of hypnotic procedures, phenomena, and influencing factors, this review seeks to promote the adoption of hypnosis and optimise the use and evaluation of hypnotic treatments.

4.1. Future directions

This review seeks to improve the accuracy of information provided and enhance the understanding of hypnosis in theoretical contexts to promote adoption in research and clinical settings. We hope that this review steers clinical research towards evidence-based practice of hypnosis and allow advancements in conceptualising, examining, and implementing hypnotic interventions. By addressing theoretical controversies and integrating theories to explain hypnotic procedures and components, the science and practice of hypnosis can be advanced based on empirical evidence. Further studies should explore hypnotic effects, mechanisms, procedures, and contextual factors as well as barriers and facilitators to the implementation and acceptance of hypnosis to promote the dissemination of hypnotic treatments. It is proposed that hypnosis be considered a complex intervention, which has implications for how evaluation and research should be structured. Extending evaluation of outcomes beyond individuals receiving hypnosis (e.g., distress, pain) to include health service outcomes (e.g., safety, efficiency) and implementation outcomes (e.g., adaptability, accessibility, sustainability, scaling up) has the potential to narrow the gap between evidence and translation into practice.

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