

Psychology of addiction

Shamil Wanigaratne

Abstract

Psychology as a discipline has played a major part in both addiction research and treatment. It is a key player in the multidisciplinary approach that the 'biopsychosocial' conceptualization demands. Applied psychology in the area of addictions can be categorized into the following broad areas: learning theory-based; psychodynamic; and transtheoretical approaches. Brief outlines of the popular models are presented in this contribution. Significant recent developments in psychology of addictions are the Dynamic Model of Relapse from the learning theory area and the PRIME theory of motivation from the transtheoretical area. Both these developments are departures from the linear two-dimensional perspective that has been characteristic of existing models, to multi-dimensional non-linear models, and they utilize theories such as chaos theory and catastrophe theory in the modelling process. Explanations and predictions based on these approaches are similar to those used in explaining and predicting complex phenomena such as weather patterns. Since both these developments are new they are yet to be tested in the field. The comprehensive nature of the models holds a lot of promise for the greater understanding of addiction and for the development of effective interventions.

Keywords CBT; cognitive-behavioural therapy; excessive appetite model; PRIME theory; psychodynamic; relapse prevention; self-medication theory; stages of change model; synthetic theory

The word 'addiction' is derived from the Latin verb *addicere* meaning 'to devote; to give oneself over to'.¹ The phenomenological description of the nature of addiction and the clinical definitions encapsulated by Griffith Edwards and colleagues form the basis of our current thinking about addiction.²

There is no shortage of explanations of the nature of addiction; in a recent review, West identified 98 theories and models of addiction.³ Categorizing the various theories and models in a meaningful manner is a difficult task, but they can be seen

as taking broadly behavioural, social or biological perspectives; there is general consensus that addiction is a biopsychosocial phenomenon. Although theories and models of causation and maintenance have been developed in each of the constituent disciplines of the biopsychosocial model, it is often difficult to separate the psychological from the biological and social. This contribution discusses the psychological theories of addiction that are currently prevalent, but it must be emphasized that there is considerable overlap between psychological theories and biological and social spheres.

Psychological theories and models that attempt to explain the cause and maintenance of addictions can be grouped into three categories:

- learning theory-based models
- psychodynamic theories
- transtheoretical models.

Learning theory-based models

Theories have been developed from classical and operant conditioning and social learning paradigms to explain addictive behaviour as over-learned habits that can be analysed and modified in the same way as any other habit.⁴ Taking substance misuse as an example, the development of addiction can be seen as a continuum from experimentation and recreational use through to problematic use and dependence. The continual, excessive use and 'loss of control' marks the passing over of the threshold into dependence. Addiction is often seen as a maladaptive coping mechanism that has led to negative consequences.

Classical conditioning

Theories based on classical conditioning have been used to explain the acquisition of an addiction and the phenomenon of craving, which is central to the concept of addiction. Conditioning theories of craving and their clinical applications in cue exposure, a form of behaviour therapy, are reviewed by Drummond.⁵

Environmental stimuli associated with drug-taking, such as drug paraphernalia, can come to exert conditioned effects in their own right, and these effects may be involved in the phenomenon of drug craving.⁶ This has led to the development of cue exposure, which aims to break down the conditioned drug effects that are thought to contribute to the behavioural pattern of drug-seeking that characterizes an addiction. It uses the classical conditioning principle termed 'extinction' and is built on the premise that repeated, non-reinforced exposure to drug cues (e.g. the sight of a syringe) will diminish any conditioned drug effects. However, the usefulness of this approach as a behavioural intervention in outpatient settings remains to be seen, as outcome data are equivocal.

Operant conditioning

Operant conditioning paradigms have been used to explain the nature of addiction. An addictive behaviour or a drug is seen as a reinforcer in the conditioning process in much the same way as food or sex. A reinforcer is defined as an event that strengthens the likelihood that the preceding behaviour will recur, which can be described as either positive or negative in action:

- a positive reinforcer acts by inducing a novel state
- a negative reinforcer reduces an aversive state.

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Drugs of abuse can serve as both positive and negative reinforcers. For example, when a drug alleviates the symptoms of withdrawal it is acting as a negative reinforcer, and when a drug induces a state of euphoria it is acting as a positive reinforcer. Complex reinforcement schedules and processes have been put forward to explain a range of addictive behaviours.⁷

Drive reduction theory,⁸ based on classical and operant conditioning, has been the dominant explanatory model in the psychology of addiction for more than 40 years. Currently, positive reinforcement explanations are favoured over negative enforcement explanations, such as the avoidance of withdrawal distress.⁹

Social learning theory

Social learning theory¹⁰ had an enormous impact on psychology and caused something of a revolution in learning theories by introducing the concept of cognitive processes in learning. Cognitive factors or processes such as anticipation, planning, expectancies, attributions, self-efficacy and decision-making were all shown to play a part in learning. Cognitive-behavioural therapy (CBT) is a product of social learning theory. A number of theories and models explaining the development and maintenance of addictions have been formulated from a social learning perspective. The cognitive-behavioural model of the relapse process developed by Marlatt and Gordon (see Figure 1),⁴ and the treatment approach of relapse prevention which is based on it, has undoubtedly had a great impact. Interventions based on this model (relapse-prevention work) need to contain elements which increase the individual's awareness of the relapse process in general and his or her own pattern in relation to this, for example by examining the patterns of the individual's previous relapses. Increasing awareness or insight would also involve looking at the individual's general strengths and weaknesses as well as general coping strategies. Relapse prevention requires the development of specific coping strategies to deal with high-risk situations, such as skills training, and more global coping strategies to address issues of lifestyle imbalance and covert antecedents of relapse. A good relapse-prevention programme would include all the above elements and instil in an individual a sense of preparedness and confidence similar to that of someone who has undergone a good programme of 'fire training' or 'fire drill'.¹¹

Relapse prevention

Since the first publication of the Relapse Prevention model in 1985 it has been widely accepted and has become part of the mainstream thinking in addictions treatment settings internationally. During this period the model has also attracted some criticism from researchers who have highlighted its limitations in a number of areas, such as:

- the accommodation of the influence of craving and withdrawal symptomatology
- the role of motivation, outcome expectancies, self-efficacy and social support in the relapse process
- the need to incorporate more complexity.¹²

Taking all these factors into consideration, a reconceptualized dynamic model of the relapse process has been developed. The shift has essentially been from a linear, two-dimensional model to a complex non-linear multidimensional model, with factors at different levels interacting in a dynamic manner to precipitate

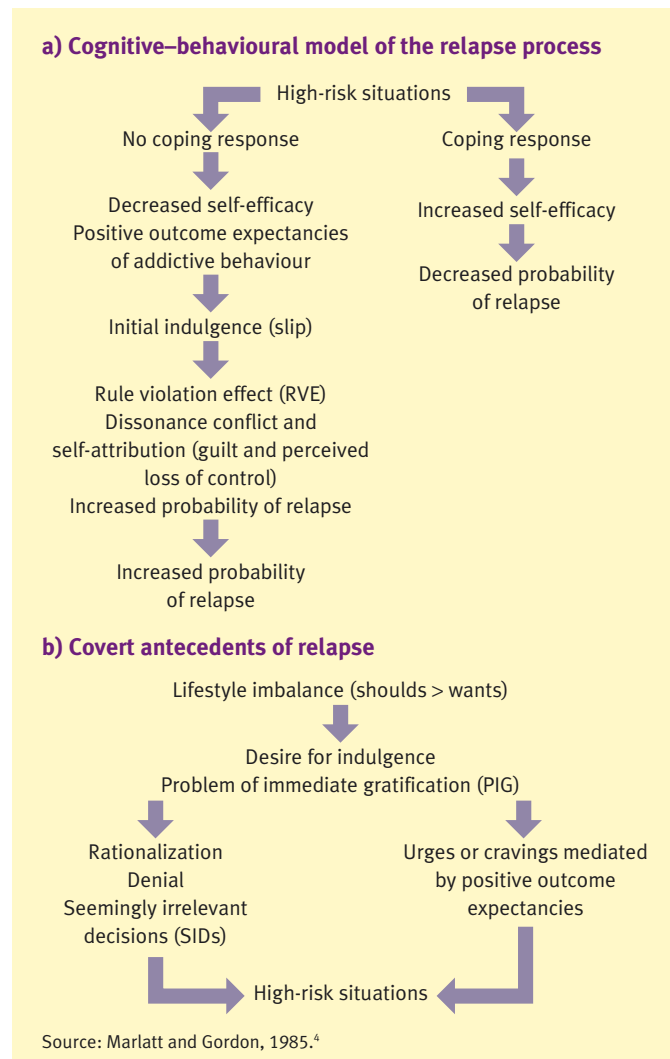


Figure 1

a relapse.¹³ As illustrated in Figure 2, distal risk factors (blue circle) interact with proximal risk factors (green circle) which are both influenced by situational factors (yellow circle) to form a self-organizing system and the balance or how the balance tips that ultimately determines outcome.

The cognitive model of addiction (see Figure 3) is gaining interest.¹⁴ This model describes addictive behaviours as arising out of interplay between layers or levels of beliefs. An individual's core beliefs, or core schemas, are activated by a critical incident, which gives rise to anticipatory beliefs related to addiction, which in turn give rise to cravings. Cravings then activate permissive beliefs to indulge in the addiction, which subsequently leads to the addictive behaviour. This explanatory model of cognitive processes involved in the addictive behaviour enables the construction of individually based interventions.

Psychodynamic theories

An overview of psychological theories and models in the area of addiction would not be complete without the inclusion of

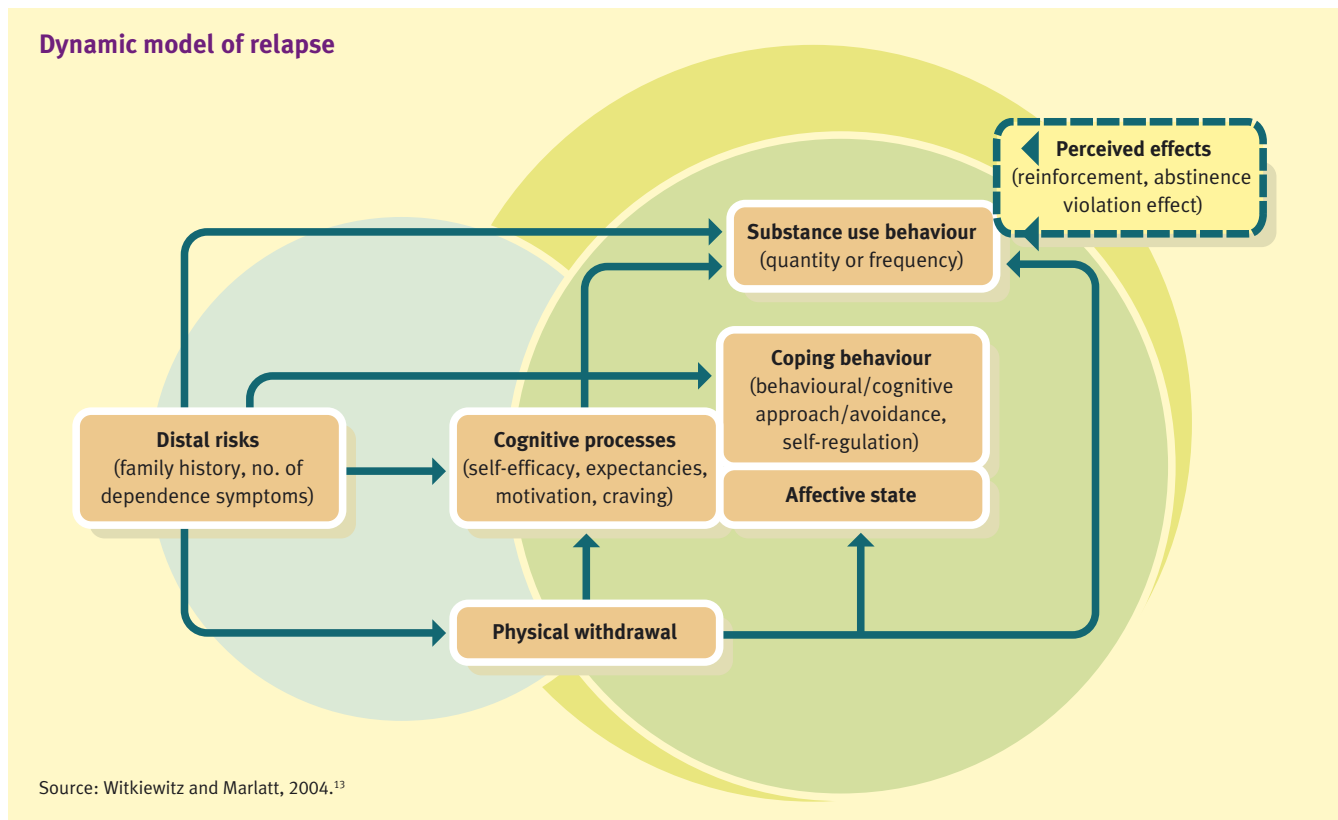


Figure 2

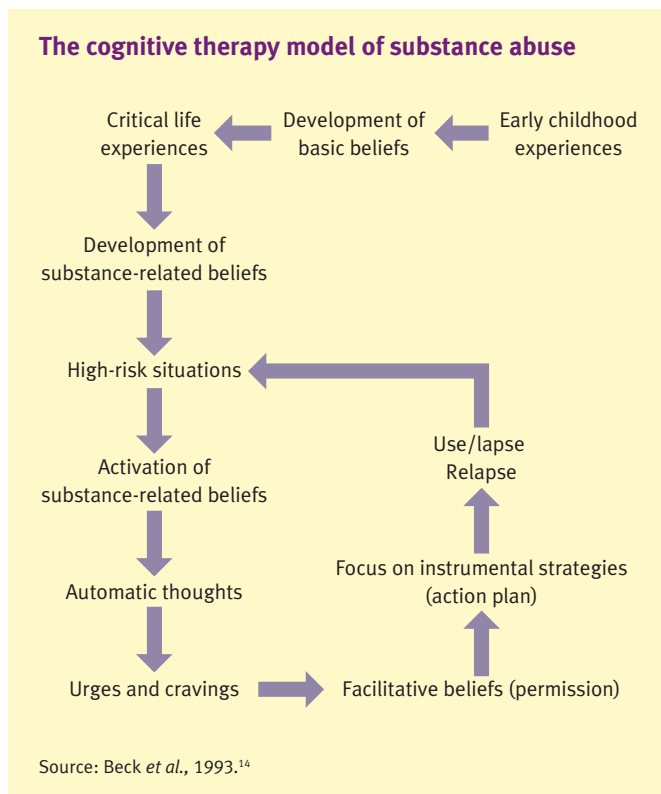


Figure 3

psychodynamic formulations. The psychodynamic umbrella covers a range of viewpoints or schools of thought, from the psychoanalytical school and analytical psychotherapy to trans-actonal analysis.

Theories about the development and maintenance of drug addiction have largely come from the psychoanalytical school. A recent formulation by Hopper, encapsulating much previous theory, suggests that the main cause of the addiction syndrome is the unconscious need to entertain and enact various kinds of homosexual and perverse fantasies, and at the same time to avoid taking responsibility for them.¹⁵ The new, and perhaps most salient, aspect of Hopper's theory is that he links addiction with past traumatic experiences. This theory brings up to date the psychodynamic perspective with an accumulating mass of evidence from other perspectives in psychology, neurochemistry and neurology, linking substance misuse and personality disorders as aspects of a post-traumatic syndrome.

In the USA, more pragmatic psychodynamic theorizing emerged in the 1970s and 1980s. Wurmser emphasized the underlying psychopathology pre-existing in those who developed substance dependence, and the breakdown of the affect defence or the inability to handle painful feelings.¹⁶ Khantzian focused on self-deficits and introduced the concept of motivation for substance misuse as self-medication.¹⁷ The self-medication theory has had considerable influence, particularly in the area of dual diagnosis – that is, comorbid substance dependence and mental illness.

Psychodynamics and treatment

In treatment settings, psychodynamic concepts continue to have a large influence. This is partly due to the historical dominance of relationship-based models or philosophies of treatment in specialized treatment settings in the 1960s and 1970s. The assumption was that the addict would achieve abstinence through the therapeutic relationship with a drugs worker. Counselling, which became the main intervention in many treatment settings, was based on psychodynamic assumptions but was often carried out by people with little or no training in psychodynamic therapy or counselling. Much of this counselling was influenced by Rogerian humanistic counselling,¹⁸ with little or no acknowledgement of the underlying psychodynamic processes. The humanistic counselling perspective has no specific theory or model for addictions and it could be argued that this approach may not facilitate change in addicted individuals. The psychodynamic processes of transference, counter-transference, projection and projective identification, which appear to dominate the counselling work that goes on in many addiction treatment settings, invariably take place without the supervision and theoretical framework such work requires. This lack of framework or clarity accounts for much of the 'stuckness' (i.e. counselling continuing for a long time with no change in the patient's condition) that is seen in psychological work in addiction treatment settings, which is arguably damaging to both the patient and the counsellor.

Transtheoretical models

'Stages of change' model

The phenomenon of motivation is central to our understanding of addiction.¹⁹ Research and theory have linked the concept of motivation to understanding how addiction can develop and could be overcome. The 'Stages of Change' model (see Figure 4)

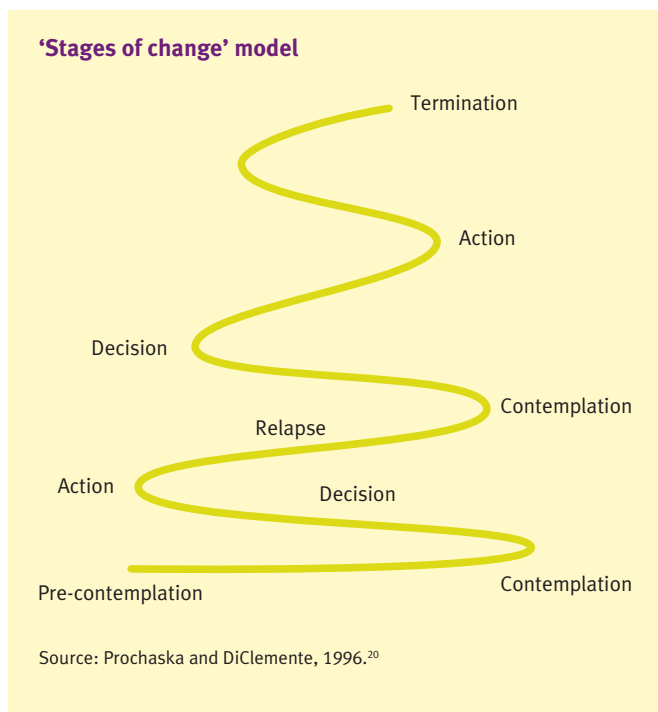


Figure 4

was developed from evidence from smoking cessation studies to explain the process of how people change.²⁰ As this explanatory model spans different theoretical perspectives it was first termed the 'transtheoretical model of change'. The central concept is that behaviour change takes place in discrete stages.

- The 'pre-contemplation' stage is the period before the individual recognizes the need to change.
- The 'contemplation' stage is when a person recognizes that s/he has a problem and considers doing something about it. An individual could remain at this stage indefinitely if ambivalence to move on to the next stage is not resolved.
- A 'decision' or 'preparation' stage precedes the 'action' stage in which the individual attempts to change the behaviour.
- Success in changing the behaviour leads to a 'maintenance' stage; failure to maintain change leads to a 'relapse' stage.

In the light of research evidence, the model itself has undergone a number of changes. The early version of the model was circular, whereby individuals were seen to go through the stages in a linear manner. However, a spiral is now thought to be a better representation of the change process.

While the model has received much criticism, its influence has been immense. It led to the development of the counselling approach known as 'motivational interviewing',¹⁹ which has had a huge impact in the field of addiction and beyond. It has also influenced treatment matching or targeted interventions for individuals at different stages of change.

Excessive appetite model

A psychological model of addiction formulated by Orford views addictions as excessive behaviours and addicted individuals as having an excessive appetite.^{7,9} This model seeks to explain key aspects of the process of addiction, such as:

- how an individual takes up an addictive behaviour

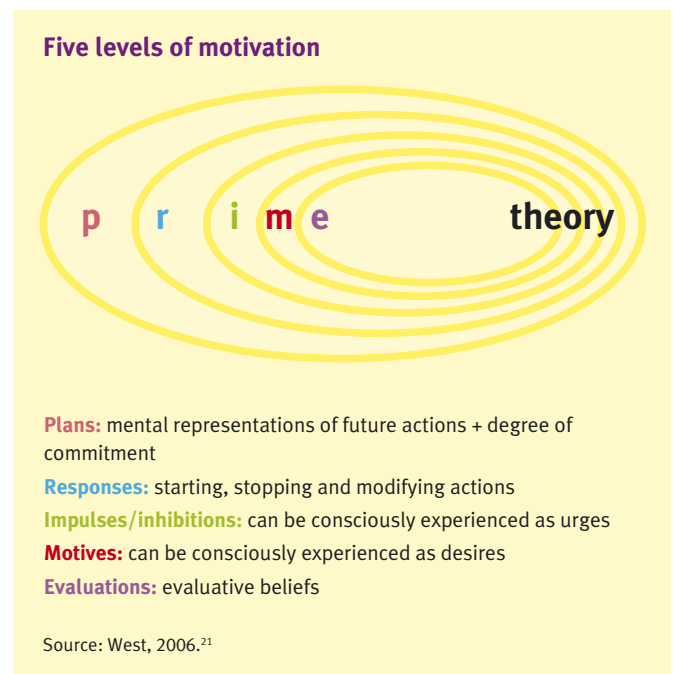


Figure 5

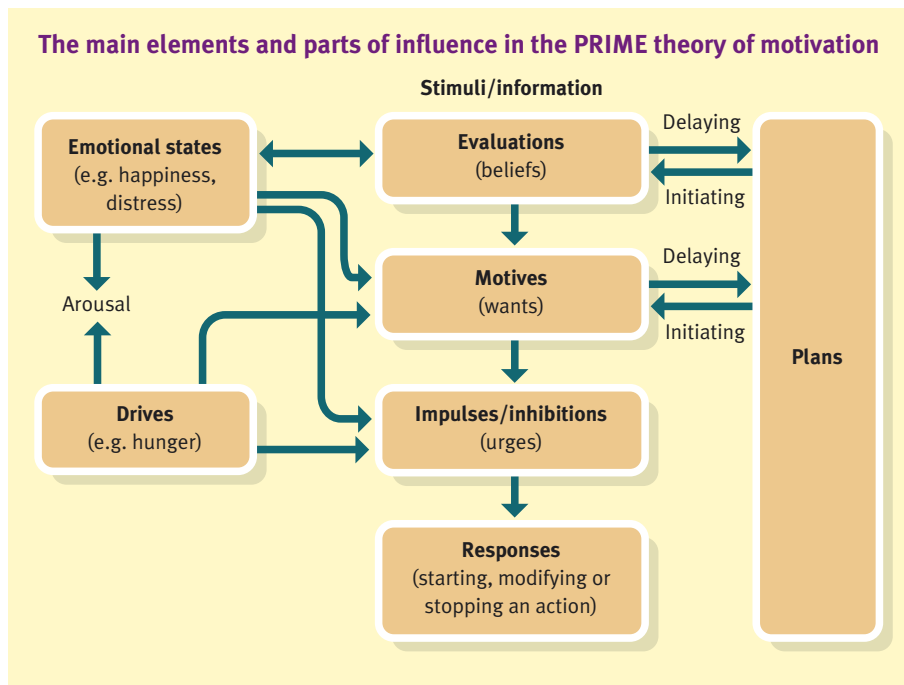


Figure 6

- how personal inclinations or factors within the individual may contribute to making that behaviour excessive
- the breakdown of restraint
- the development of strong attachment to the behaviour
- internal conflict
- decision-making
- self-control.

This integrative model looks at evidence from the biopsychosocial fields to explain the phenomenon of addiction and points to

ways that individuals may be helped to overcome their problems. It thus enables addictions to be viewed as potentially arising out of any behaviour, such as substance use, gambling or sexual behaviour.

PRIME theory

One of the most significant developments in the field during recent years is the formulation of a synthetic theory of addictions by Robert West incorporating the major theories

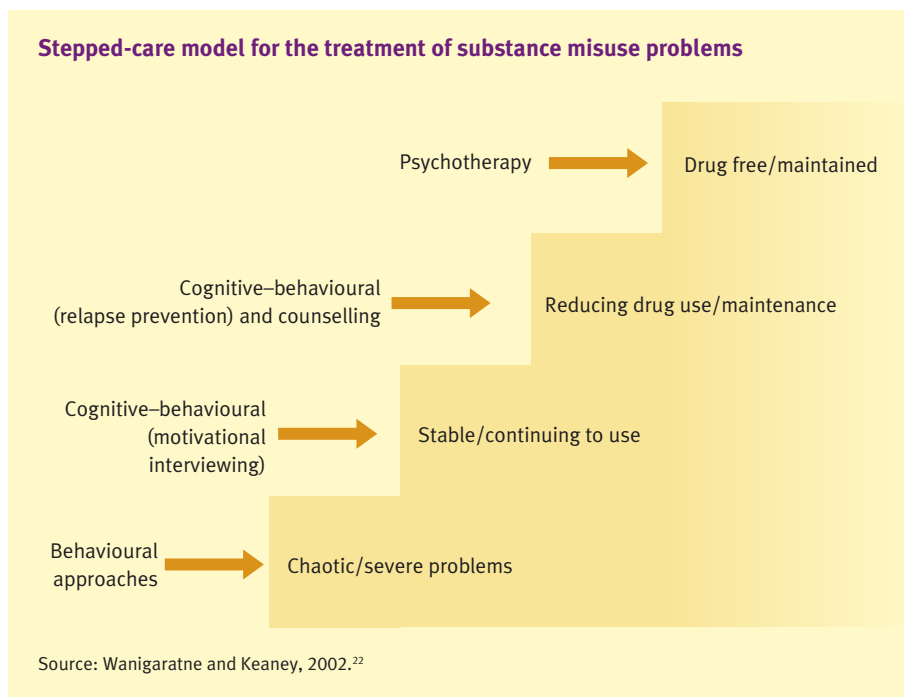


Figure 7

of addiction that has evidence to support them.²¹ The basic assumption is made that to understand addiction one needs to understand the human motivational system. It proposes that the human motivational system operates at five levels of complexity and any one of them can function abnormally in the case of addiction. The five levels of the human motivational system are captured by the acronym 'PRIME' (Figure 5), which stands for:

- Plans (conscious mental representations of future actions plus commitment)
- Responses (starting, stopping or modifying actions)
- Impulses/inhibitory forces (can be consciously experienced as urges)
- Motives (can be consciously experienced as desires)
- Evaluations (evaluative beliefs).

It is proposed that adjacent elements of the system can exert influence on each other. This is illustrated in Figure 6. PRIME theory not only attempts to integrate existing theories of addiction in a flexible framework but also provides a pegboard for future research to fill in gaps in our knowledge.²¹ Unlike previous theories and models in addiction this is not a linear or two-dimensional theory that enables simple predictions. What is proposed is a multidimensional dynamic interactive system similar to weather systems. Just as much as complex mathematical modelling, taking into consideration multiple prevailing factors, can predict the weather, it is proposed that such modelling techniques using theories such as 'chaos theory' could explain and predict addictive behaviours in individuals and also provide avenues for interventions. Needless to say that PRIME theory has to be tested scientifically for both its predictive and intervention utility. What it offers is a quantum leap in our thinking and exiting prospects for future research and treatment.

Implications for treatment

The biopsychosocial model has helped integrate different theoretical perspectives to derive holistic interventions for individuals with addictions. Nevertheless, psychosocial interventions remain the mainstay of treatment for addictions. The emergence of evidence-based practice and the rise of integrative thinking has led to a pragmatic 'stepped-care approach', in which interventions based on diverse theoretical perspectives can be used in the treatment of an individual during the natural history of their addiction. Figure 7 is a schematic representation of targeted interventions for different stages of recovery of an opiate addict – a stepped-care model.²² This type of pragmatic approach should make available a range of targeted treatments to individuals who would otherwise receive only the treatment that was the approach in the setting or clinic which treated them. ◆

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