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Review Article

The Transtheoretical Model of Stages of Change: It's Applicability to Psychiatric Disorders

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Abstract

The Transtheoretical model of stages of change (TTM) has been widely accepted in clinical practice, especially in the assessment and planning of treatment-interventions in addiction disorders and intentional life-style changes. This model has been hailed by some as the most important theoretical health promotion development of the decade and by others as a pseudo-stages-theory that does not work. The question whether the model is applicable to a variety of psychiatric disorders remains essentially unanswered, despite several articles written in this context. The present article is an attempt to address the question by examining the theoretical and practical implications of the Transtheoretical model (TTM) with case illustrations. After extensive literature review, the author recommends that a serious discussion take place among practitioners and scholars on the applicability of TTM to severe and persistent mental conditions.

INTRODUCTION

The Transtheoretical model of change (TTM), as proposed by Prochaska and DiClemente [1], has been researched and widely accepted in clinical practice [1-6]. The Transtheoretical model has been hailed by some as the most important theoretical health promotion development of the decade (Samuelson, 1997) and a Kuhnian paradigm shift [7]. On the other hand, critics have raised significant theoretical and practical problems with the TTM. "Even the most cursory examinations of the TTM evidence literature shows a situation of utter confusion and entrenched disputes" [8]. Among the serious theoretical critics of TTM is Albert Bandura [9], who stated: "The Classifications in the stage model under discussion are arbitrary pseudo-stages". Robert West [10], in his editorial concluded that the TTM should be discarded and a better model of behavior change be pursued. This provoked significant commentaries from both sides of the debate, all agreeing that there are serious theoretical and practical issues that need to be resolved [11]. Three main reasons why TTM deserves to be closely examined were proposed by Whitelaw, Baldwin, et al. [12], the TTM is beginning to take on an established or accepted status; 2) relatively profound claims are made on its behalf; 3) the TTM literature tends to leave many important methodological and research issues unresolved.

Rosen [13], did a meta-analysis of several studies applying the TTM and came up with mixed conclusions. Whitelaw, Baldwin, et al., [12], did an extensive review of the literature and stated that the disproportionate popularity of the model might be affecting health promotion projects in a skewed manner at the expense of other approaches. A systematic review of the effects of TTM-based interventions [14], came up with inconsistent results and concluded that the scientific evidence for the effect of stages-of-change-based lifestyle interventions in primary care is limited. They further stated: "…this review does not provide substantial evidence for its (TTM's) effectiveness". Another systematic review of the TTM's effectiveness was done by Bridle, Reimsma, et al. [6], and concluded that the evidence for the effectiveness of the stage-based interventions was limited. Albert Bandura wrote an editorial in the *American Journal of Health Promotion* (1997), providing a theoretical criticism of TTM. He stated that TTM is not a genuine stage model and that human functioning is simply too multifaceted and multidetermined to be categorized into a few discrete stages. He further stated that the TTM stages are "arbitrary pseudo-stages", because the three defining features of a stage theory (qualitative transformations across stages, invariant sequence of change, and nonreversibility) are not met in TTM. A review of the TTM was published in the *British Journal of Sports Medicine* in which Adams and White [15], criticized the effectiveness and applicability of the model. In a subsequent article (2005) the authors further criticized the TTM and gave reasons why TTM did not work. Among the reasons, the authors pointed out that

few validated algorithms are used in determining current stage of change and that TTM's suggested outcome of stage progression did not necessarily correlate with actual behavior change. Brug, Conner [8], praised this study as a balance to the existing trend to treat TTM as a "sacrosanct ideology". They further concluded that consensus was lacking on the best way to allocate people to stages of change and that the evidence for the determinants of stage-transition is weak. Sandy Whitelaw (University of Glasgow) stated that there needs to be a balance to what she considered to be "an uncritical colonization of various behavioral areas by TTM" [8]. There seems to be a developing tendency in some to reject outright any critical view of TTM out of an evangelical enthusiasm [16], for the model.

While TTM may be ripe for a comprehensive review for its theoretical and practical implications, the purpose of this article is limited to addressing TTM's applicability to serious and persistent psychiatric disorders. A few studies [17-20], have suggested that the model may be applied with benefit to psychiatric disorders. However more recent evidence [21], suggest that TTM may be less applicable to areas where conscious motivation is not the most important factor in maintaining a condition.

THE TRANSTHEORETICAL MODEL (TTM)

Stages

The Transtheoretical model of change describes six stages of change, sequentially organized, incorporating a set of independent, intervening, and outcome variables such as the processes of change, decision-balance, self-efficacy and temptation [22]. The theory is described as transtheoretical or a-theoretical because the "constructs are derived from a wide range of major psychosocial theories" [1,22]. The stages of change, according to the TTM, are operationally defined and described. At the "Pre-contemplation" stage the individual is not intending to take action to change in the near future, usually measured in terms of the next six months. The individual at this stage has no subjective urgency to change. At the second stage, "Contemplation", the individual is ambivalent about the change and hoping to change in the next six months. It is a time of introspection and internal debating. The individual then moves on to the third stage, "Preparation", which is defined as a stage in which the individual is intending to take action to change in the immediate future, usually measured in terms of the next month. The fourth stage, "Action" calls for specific, overt modification in lifestyles within the past six months. The next stage is called "Maintenance" stage. At this stage the individual is working to prevent relapse and does not apply change processes as frequently as do people in action because of increasing self-confidence. The final stage is "Termination" at which the individual experiences no temptation and experiences total self-efficacy. The issue of relapse was extensively discussed and initially considered as an additional stage, but was dropped as a separate stage of change. The stages, though described as linear, are construed as interacting and potentially capable of cycling as a spiral. The individual, while advancing through the stages, may relapse and go through the stages again, each time gaining more ground.

Processes

DiClemente and Prochaska [23], have insisted on the importance of relating the *stages* of change with *processes* of change. The processes may be categorized under two major domains: cognitive-affective (experiential) and behavioral. Five cognitive-affective processes are identified: consciousness-raising, self- reevaluation, dramatic relief (experiencing and expressing affect), environmental reevaluation (social reappraisal), and social liberation (changing social norms). Five behavioral processes are also named: counterconditioning (substitution), stimulus control, reinforcement management, helping relationships, and self-liberation (decision to change). Rosen [13], found in a meta-analysis that the use of change processes varied by stage, but the sequencing of processes is not consistent across health problems.

TTM AS A MODEL OF INTENTIONAL BEHAVIORAL CHANGE

TTM was intended to be a model of intentional behavior change [24].

Ours is a model of intentional behavior change when individuals are intending to change their own behavior or interventionists are intending to help them change (p.826).

Several studies have demonstrated that stage-based therapeutic interventions for behavioral disorders, specifically disorders of addiction, have better rates of outcome at least in the short term [8]. This is consistent with the existing theories of reasoned action and planned behavior [25,26]. As DiClemente rightly points out [11], in his response to critics [10], the TTM offers a model to continue dialogue on the process of change. It is in this spirit one needs to initiate the dialogue on the processes of change in psychiatrically induced behavioral disorders.

The majority of psychiatric disorders is not overcome through an intentional process and therefore technically should fall outside the purview of TTM. Many of the

changes in psychiatric disorders cannot be conceptualized in terms of the TTM. For example, disorders of thought or emotional disturbances are not behavioral problems; personality disorders, while manifested often through behavioral patterns, are primarily mediated through experiential structure. This recognition prevents the misapplication of the model, reducing its already established utility in important areas of addiction and health-maintenance. Additionally, changing intention does not necessarily correlate with behavioral change, much less the course of psychiatric illnesses. A meta-analysis of the experimental evidence in this regard reported the following: "Findings also showed that intentions have less impact on behavior when participants lack control over the behavior, when there is potential for social reaction, and when circumstances of the performance are conducive to habit formation." (Webb & Sheeran, 2006). The proposal that a model such as TTM is applicable to all or even a large number of domains of psychiatric and behavioral disorders needs careful examination both theoretically and empirically.

ASSESSING STAGES OF CHANGE IN SEVERE MENTAL ILLNESSES

The first question is whether TTM stages can be assessed for serious psychiatric illnesses. This question is relevant for two reasons: first, psychiatric symptoms or behaviors are by and large not subject to intentional change; second, there is an increasing assumption that TTM is applicable to psychiatric syndromes [19,21,27]. The assessability of TTM stages may be relatively easy with certain addiction disorders, such as smoking. Such disorders of behavior often hinge on one important and central factor: abstinence from the addictive substance. This is not the case with complex behaviors and much less with complex illnesses. This was demonstrated in the case of even a health maintenance issue such as physical activities [15,27]. The current methods of assessing the Stages, such as offered by the CAS (Change Assessment Scale) or URICA (University of Rhode Island Change Assessment Scale), may be at best difficult to apply. The problems are manifold.

The definitions of "stages" are not consistent or distinct. For example, Pre-contemplation is defined in varied ways:

- "not considering change" [21].
- "Most individuals in this stage are unaware or under-aware of their problems"
- "or they may have tried to change a number of times and become demoralized about their ability to change" [28]
- "Characterized as resistant, unmotivated…or as not ready for therapy or health promotion programs"

Varied definitions and descriptions create substantial problems in assigning Stages, especially in complex psychiatric disorders. For example, a person with panic disorder is fully aware of the distressing condition and is extremely motivated to seek relief and therefore cannot be assigned a Pre-contemplation stage defined as lacking in awareness of the problem. Despite this, a study assigned Pre-contemplation stage to 36 sufferers of panic disorder. Another study [21], of anxious individuals found a lack of pre-contemplators and the authors speculated that the Stage of Change concept may not be applicable to a complex disorder such as Post-Traumatic Stress Disorder. A person seeking active treatment for pseudo-seizures from a neurologist is acutely "aware of the problem" and is "motivated to seek treatment" but is unconsciously motivated to maintain the condition. What Stage would one assign to this person given the definition of Pre-contemplation? This individual reported that she was in Action stage, while the clinician was firmly of the opinion that she is in Pre-contemplation. In this situation, what is Action for the patient is Pre-contemplation according to the clinician.

In assessing the stages of change in an individual diagnosed with Schizophrenia or other psychotic disorders, does one assess the stages for the syndrome as a whole or for each of the symptoms? It may become necessary to assign different stages to each of the symptoms, such as sensory disturbances, thought disorder, perceptual distortions, information-processing problems, affect-instability and social withdrawal. A person suffering from obsessive compulsive disorder is experiencing ego-dystonic symptoms. What is the practical way to assign "stages" to his symptoms? An individual suffering from paranoid delusions, distressed by the expressed attitude of others towards his delusional beliefs, decides not to mention his beliefs to them; in addition, he also takes medication to calm down. However, he remains well entrenched in his delusions. Is he in Pre-contemplation, Action or Maintenance? Numerous clinical examples may be brought to demonstrate the point that TTM is very confusing and highly complicated when it is applied to complex psychiatric and behavioral symptoms. Imagine a situation where a person with Schizophrenia is assessed as being Pre-contemplative in delusion, Action in hallucinations, Contemplation in Social Withdrawal, Maintenance in medication compliance etc. This becomes further compounded if a serious discrepancy is obtained between the patient and the treating mental health worker with regard to the assignment of Stages. In the study

quoted above by Rooney et al. [21], stated: "Participants may have been simultaneously in the contemplation SOC for some behaviors…action for others…or maintenance for others". Keeping all these in mind in deciding treatment interventions would be a complicated task, even assuming that the treatment of complex psychiatric conditions such as Schizophrenia is furthered by such a discreet approach to symptoms.

A CASE ILLUSTRATION

A young scholar in a university suddenly finds himself agitated with the thought (delusion) that he indeed is in reality an "angel". He reports confirmation of this belief by stating that the clouds in the evening sky created the form of an angel as he was watching the sunset. He spends sleepless nights and agitated days wondering about this experience, unable to concentrate or attend to his scholarly activities. He ends up in an inpatient psychiatric hospital with a diagnosis of Schizophreniform disorder. After one month of inpatient psychiatric hospitalization, the young man is discharged with a diagnosis of Schizo-affective Disorder, with continuing symptoms of sleep disturbance, psychomotor agitation, anhedonia and concentration problems. Apart from his continuing conviction that he is an angel; he readily admits that he suffers from Schizophrenia and remains compliant with his psychiatric regimen and carries on his daily activities. However, he is resistant to psychotherapy, as he believes that Schizophrenia is an organic illness. How does one apply TTM to this young man? His overall attitude and approach to his illness is very difficult to fit into the TTM stages. One is forced to ascribe different stages to him at the same time, based on his complex approach to his symptoms. His awareness, motivation and pursuit towards health are far from linear or one-dimensional. To attempt to fit this complex clinical situation into the Procrustean bed of TTM would not be easy, necessary, or efficient.

Reliability and Validity of the Change Assessment Scales

Rogers and others [17], examined the reliability, validity and other psychometric properties of the Change Assessment Scale (CAS) [29]. The study primarily asked whether the TTM would meaningfully apply to individuals with severe mental illness and engaged in a rehabilitation intervention. The study concluded to some good psychometric properties of the instrument. However, the study raised some interesting questions regarding the relationships among the stages. The Pre-contemplation sub-scale did not meet a satisfactory level of internal consistency. Neither did it correlate negatively with the Maintenance sub-scale, as would be expected. In this regard they did not replicate Prochaska's findings. Riemsam, Pattenden, et al. [30], found that the level of validation of the Stage of Change instruments was limited both for validity and internal reliability. Prochaska's admission in 1992 that it was true that measuring the stages for specific problem behaviors presented quite a challenge [31], continues to be true, especially in the domain of severe and persistent mental illnesses. "The stage of change algorithm is a magpie collection of questionnaire items that do not cohere particularly well" [32]. As DiClemente [11], comments on the criticism, it is important not to confound the current difficulties in measuring the stages with the value of the stage-construct of change. Suffice it to say, the current methods of assessing the stages of change are at best problematic. This is particularly so when the methods are applied to severe and persistent mental illnesses.

Applying TTM to Psychiatric Symptoms and Disorders

The TTM may be a poor fit when it comes to disorders of sensation. Sensory disturbances such as hallucinations are not changed by willful action by the sufferer; they are changed by psycho-pharmacological-neurological interventions and corrective experiences. Perceptual organizations that arise out of sensations that appear self-evident to the subject are altered only by equally powerful and different sensations. Changes in perceptions, thoughts and beliefs do not seem to follow the essentially linear TTM model; at any rate TTM does not appear to be as applicable or useful as a spiraling dialectical model of change [33]. When it comes to changing our thoughts or perceptions, one never reaches Maintenance or Termination stages. Human beings continuously evolve as they are always changing and refining their understanding of self and others and the world. In point of fact most thought and perceptual disorders (e.g. paranoia) are the result of "maintaining" a rigid pattern of thought without being open to new experiences.

Delusions have been traditionally understood as an intellectual defense against a series of traumatic and anxiety provoking emotional experiences, the etiology of which could be neuro-chemical [34]. Clinical evidence points out that change in delusional beliefs occurs through corrective emotional experiences, mostly induced by outside intervention and not through an intentional process [35]. A delusion ceases to be maintained, when the person recognizes it as a delusion. It is not an action-oriented behavioral change; this is a perceptual and experiential change. The delusional stage is not pre-contemplational, as may be inappropriately measured by one of the Stage of Change instrument. In one sense, it is an

end-stage of a specific series of changes. Logical debating may not assist the deluded individual to change his belief. The individual needs to have a corrective emotional experience that alters the perceptual organization of his original experience, independent of whether this corrective experience is achieved through neurobiological or psychological approaches. The stages of change for this condition are clearly different [35]. There is no "action" that is evident that the individual can initiate to change his delusional belief, unlike the addicted person who knows exactly what he needs to do to become sober. If the sufferer of the well known "Othello Syndrome" debates the issue (contemplation) and proceeds to solve it by divorcing his wife (action), did he move from Contemplation to Action?

Psychiatric disorders provoke behaviors that are essentially dependent on bio-chemical and/or perceptual factors. Hyperthyroidism may produce panic attacks and persistent anxiety. However, when the hormone is regulated through medical intervention, the accompanying psychiatric symptom may disappear. Another example, albeit somewhat extreme, is that of an individual suffering from an acute break of Schizo-affective disorder, with Major Depressive symptoms and suicidal ideation. Such a person may be admitted into an inpatient psychiatric hospital and be confined to his bed against his will in order to have the psychopharmacological interventions take effect. The person may be sent home fully stabilized and having resolved the symptoms without having to go through the stages of change. The following quote from a consumer is telling:

I therefore reject the analogy of schizoaffective disorder as being like diabetes. If I could choose a replacement analogy, I would say schizoaffective disorder is like a whirlwind: it comes out of nowhere, strips you naked and sucks you dry, and swiftly vanishes, leaving you empty and shaken but alive, wondering if it really did happen and how soon, it will come back again. (Anonymous: Schizophrenia Bulletin, 2007, p.847)

A treated Major Depressive episode generally resolves itself within three to four months (DSM IV TR). Schizophrenia, Major Depression, Anxiety Disorders such as Panic and Post Traumatic Disorders, Somatoform Disorders, and similar conditions do not go through the TTM stages of change and therefore, should fall out of the purview of TTM [21]. This obviously does not preclude the profitable application of TTM to those intentional behaviors often accompanying these conditions (example, abusing alcohol or other drugs).

It is not disputed that behavior is highly correlated with perception. One behaves, based on how one perceives self, others and the environment. Often life is transformed by sudden and unintended changes in perceptual organization. Perceptual changes, as the Gestaltists would easily demonstrate, are mostly non-intentional processes, often sudden and instantaneous. The figure emerges from the ground as a result of the field-vectors and organismic factors. One either sees it or does not ("All or none law"). Apperception is the ground and source of the figure; perception is the result. The "Aha!" experience can transform one's behavioral response permanently changing the course of one's life. While intellectual recognition does not change behavior automatically, a powerful experience that is sudden and unpredicted could instantly change a person's behavior as well as experiential structure. There are many instances of a single experience that changed a person's chronic habit [36]. Jim Oxford, who is generally sympathetic to TTM agreed: "…successful change may occur because the personal meaning or functional significance of behavior changes without much awareness of contemplating or acting" (1992).

Another problem with TTM is that it tends to ignore the series of changes that took place prior to Pre-contemplation. The developmental history and the perpetuating factors of psychiatric disorders provide important information. The way Pre-contemplation is described by the model does not take into account the struggle of the individual to maintain homeostasis. Pre-contemplation is not a pristine stage [37]. Prochaska [22]:

However, the criticism holds that we are more likely to contribute to understanding how people can change addictive behaviors than how they originally acquired such behaviors (p.826).

Pre-contemplation, therefore, by no means is the "first" stage of change.

Stages and Processes

At the core of the TTM is the relationship between *stages* and *processes* [23]. TTM has added depth to the theory by introducing the process-analysis. The description of the processes is very useful and gives valuable tools to the clinician. However, the distinction between a process and a stage needs to be clearly made. Unfortunately, this is not the case with TTM at present. For example, self-liberation and Preparation are described as a Process and Stage respectively. However, they both carry the same definition. Self-liberation (Process) is defined as a commitment to change; Preparation (Stage) is also defined as a decision (commitment) to change. Here the distinction between stage and *process* has disappeared. It is a tautology to state

that at the decision-making stage (Preparation) the process of decision-making ("Self liberation") is happening. "Self-reevaluation" (considering consequences to oneself) is described as a *process*, while contemplation (debating the pros and cons of a behavior) is labeled as a *stage*. Why not self-reevaluation a *stage* and contemplation a *process*?

Independent of the "state vs. trait" dispute regarding the stages [11], how can an individual be at two stages on the same dimension at the same time, especially if the stages are not contiguous? All stages of change are described in terms of either cognitive or behavioral processes. Therefore, the assumption that processes are distinct from stages is at best confusing. Identifying and naming the stage is less important than identifying the processes. It is important to recognize that change consists of several processes that may be found to be active at different levels of progression as was confirmed by Rosen [13].

Personality Structures

The Transtheoretical model is particularly problematic when it is applied to changes in experiential and personality structures. Personality styles and structures, by definition, are out of one's normal awareness. The very introspection is mediated through a defensive structure of one's experience. Self-diagnosis is at best useless, as one tends to arrive always where one started. Without feedback from others, it is difficult to know self. In the case of a person suffering from Obsessive Compulsive Personality style, the more he "contemplates", "prepares", and "acts", the deeper he is mired in his condition. The individual is intentionally attempting to change his thoughts and behaviors to no avail. In this context, intention or intense desire to change is not sufficient for behavioral change. What makes the change possible in this situation seems to be the changing of the experiential structure through clinically prescribed action, even as the sufferer may resist such prescriptions.

A Case Illustration

An individual diagnosed with Schizophrenia, paranoid type, demonstrated severe aggressive behavior. He insisted that he was not dangerous even though he assaulted many individuals including his psychiatrist. This individual is clearly in the Pre-contemplation stage by TTM standards. Attempts to convince him to change his Pre-contemplative attitude of denial to considering himself as a dangerous person in the light of compelling evidence were completely resisted and thwarted by the individual. In fact, he became more violent as a result. However, this individual was transformed when he was reinforced in his deeply idealized self-image that he was indeed a "man of peace". His violence dramatically ceased. What are the stages of change in this situation? The patient did not go through Contemplation, Preparation or Action to initiate the change. The action was initiated through a dynamically informed, insightful, and positive-behavioral intervention [38]. It is others around him that changed. This made a profound impact on his experience of the world. This individual would continue to score high on the Pre-contemplation; however, he remains a changed man in terms of his aggressive behavior (Maintenance). Insisting on moving this individual through the TTM stages did not produce this dramatic change. In point of fact, attempts to get him to accept that he had been violent (Pre-contemplation) and that he needs to acknowledge and take action to stop the violence (Contemplation, Preparation) produced the opposite results, making him more violent. Was it harmful to apply Stage Theory to this individual?

INTEGRATIVE REMARKS

TTM is an attractive and practical model for circumscribed clinical situations, specifically, disorders of addiction and health maintenance. The TTM, as proposed, is a useful descriptive schema primarily advocating specific clinical interventions to provoke further movement in the process of change. Moving from lack of awareness to critical awareness and from there to a decisional process that eventually leads to corrective action is not an unfamiliar concept in traditional psychotherapy. Theorists have differed in their understanding and facilitation of these processes. However, no model fits all situations. The Transtheoretical model is severely limited in its clinical and theoretical applicability to many psychiatric conditions. TTM may be applied usefully in situations of dual diagnoses, specifically when addictive disorders are diagnosed along with severe mental illnesses [39-41]. In such situations, it is useful and practical to apply TTM to those behaviors subject to intentional behaviors. However, stretching beyond this model, as an overarching and comprehensive model for changes in all clinical situations, is neither theoretically sound nor evidence based. A neglect of this reality out of enthusiasm for the model could result not only in discrediting a useful model but applying it harmfully.

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