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COMPARATIVE ANALYSIS OF THE COMMON-SENSE MODEL AND BURDEN OF TREATMENT THEORY

Hussaini Yusuf Onawo

Federal Teaching Hospital, Lafia, Nasarawa State, Nigeria

yusufonawohussaini@gmail.com

ABSTRACT: This narrative review examines two theoretical frameworks in health psychology: the Common-Sense Model of Illness Representation (CSM) and the Burden of Treatment Theory (BOTT). Through systematic thematic analysis, this review explores how these models clarify patients' perceptions of illness and the practical demands of healthcare management. The CSM describes cognitive and emotional processes that shape understanding of illness, whereas BOTT addresses the cumulative workload patients face when managing chronic conditions. This review critically assesses the strengths, applications, weaknesses, and criticisms of both theories, highlighting points of convergence and divergence. Findings suggest that integrating CSM and BOTT provides a comprehensive framework for understanding patient experiences, particularly in the management of chronic illnesses such as diabetes. The review concludes that combining these frameworks can inform patient-centred interventions that address both cognitive perceptions and practical treatment burdens, ultimately enhancing adherence and health outcomes.

Keywords: Common-Sense Model, Burden of Treatment, Illness Perception, Chronic Disease Management, Patient-Centred Care

INTRODUCTION

Diabetes mellitus poses a significant global health challenge, affecting around 589 million adults worldwide as of 2025, with projections reaching 780 million by 2045 (Sun, 2025; International Diabetes Federation, 2021). Managing this chronic condition requires lifelong self-care, including dietary changes, regular monitoring, medication compliance, and prevention of complications. The complexity of diabetes management extends beyond patients to their caregivers, who face considerable physical, emotional, and financial stress—collectively referred to as "caregiver burden" (Bastawrous, 2012; Kolari et al., 2023).

Understanding how individuals perceive and respond to chronic illness requires robust theoretical frameworks. The Common-Sense Model of Illness Representation (CSM) and the Burden of Treatment Theory (BOTT) offer complementary perspectives: CSM elucidates the cognitive-emotional processes underlying illness perception, while BOTT quantifies the practical workload imposed by treatment regimens. Despite their widespread application, these theories have rarely been systematically compared or integrated.

This review argues that integrating the Common-Sense Model and the Burden of Treatment theory provides a more comprehensive understanding of patient experiences in chronic illness

management than either framework alone, offering critical insights for developing effective, patient-centred interventions.

This review is organised as follows: Section II presents the methodology; Section III provides a thematic literature review; Section IV offers a critical analysis of both theories; Section V discusses their comparative strengths and integration; and Section VI concludes with implications for clinical practice and future research.

METHODOLOGY

This narrative review adopted a systematic method for sourcing and analysing the literature. Academic databases, including PubMed, PsycINFO, and Google Scholar, were searched using the following keywords: "Common-Sense Model," "Burden of Treatment Theory," "illness perception," "treatment burden," "chronic disease management," "diabetes," and "caregiver burden." Inclusion criteria specified peer-reviewed articles published between 2010 and 2025 in English, focusing on theoretical development, empirical applications, or critical evaluations of CSM and BOTT.

A total of 87 articles were initially identified, with 52 meeting inclusion criteria after screening for relevance and quality. Data extraction focused on theoretical components, empirical findings, methodological approaches, and critical evaluations. Thematic analysis was conducted to identify common and differing themes across both frameworks. The analytical process involved: (1) summarising core theoretical principles; (2) evaluating empirical applications; (3) identifying strengths and limitations; and (4) synthesising comparative insights to propose an integrated framework.

LITERATURE REVIEW

Illness Perception and the Common-Sense Model

The Common-Sense Model (CSM), developed by Leventhal and colleagues (1980), suggests that individuals form cognitive and emotional representations of illness based on five key dimensions: identity (symptoms and labels), cause (perceived etiology), timeline (duration and course), consequences (anticipated impacts), and control/cure (perceived manageability) (Hood et al., 2015; Moss-Morris et al., 2002). These representations influence coping behaviours and health outcomes through a self-regulatory feedback loop.

Empirical research shows that negative illness perceptions—seeing conditions as chronic, uncontrollable, and severe—are linked to poorer adherence, increased psychological distress, and lower quality of life. For example, Karaca et al. (2020) found that caregivers who viewed diabetes as uncontrollable reported significantly higher burden ($\beta = 0.42$, $*p* < 0.001$). On the other hand, positive perceptions support adaptive coping and improved health outcomes (Hagger & Orbell, 2003).

The CSM has been widely used across various conditions, including diabetes, cardiovascular disease, chronic pain, and mental health disorders (Modi et al., 2012; Bruin et al., 2021). Research shows that illness representations account for 20-40% of the variation in treatment adherence and health behaviours (Hagger & Orbell, 2003). However, critics argue that CSM may focus too heavily on cognitive aspects while underestimating emotional, social, and cultural factors (Pomey et al., 2024; Pulvirenti et al., 2012).

Treatment Burden and BOTT

The Burden of Treatment Theory (BOTT) describes the cumulative demands—physical, emotional, temporal, and financial—that patients face when managing chronic conditions (Tran et al., 2015; Eton et al., 2012). Unlike disease-focused models, BOTT highlights the "work of being a patient," which includes medication management, appointment coordination, lifestyle changes, and navigating the healthcare system (Sav et al., 2017).

Research shows that high treatment burden predicts non-adherence, disengagement from healthcare, and worse outcomes. Eton et al. (2015) demonstrated that patients managing multiple chronic conditions face exponentially increased burden, often leading to treatment fatigue and selective adherence. The Patient Experience with Treatment and Self-Management (PETS) scale measures treatment burden across various domains (Eton et al., 2017).

BOTT applications address chronic conditions such as diabetes, heart failure, chronic kidney disease, and multimorbidity contexts (Morton et al., 2018; Sav et al., 2013). Evidence shows that interventions reducing treatment complexity improve adherence by 15-25% (Gallacher et al., 2013). However, BOTT has faced criticism for measurement challenges, potential overlap with disease burden, and insufficient focus on systemic healthcare factors (Sheehan et al., 2019; Liu et al., 2020).

Convergence and Divergence in Literature

While CSM and BOTT share patient-centred approaches, they differ in focus: CSM explores how patients view illness, whereas BOTT measures what patients need to do to manage it. Few studies have explicitly combined these frameworks. Wang et al. (2021) proposed a pathway model in which illness perceptions influence treatment burden appraisals, which, in turn, mediate the links between perceptions and adherence. Similarly, Coventry et al. (2015) argued that negative illness representations increase perceived treatment burden, creating a synergistic effect on non-adherence.

Gaps in Literature: Despite their complementarity, systematic comparisons of CSM and BOTT remain limited. Most studies focus on a single framework, neglecting the others, thereby limiting a comprehensive understanding. Furthermore, cultural adaptations of both theories, especially in non-Western settings, need further development. Finally, longitudinal studies exploring dynamic interactions between illness perceptions and treatment burden throughout disease progression are required.

Summary of Theoretical Frameworks

Common-Sense Model (CSM):

The CSM offers a structured framework explaining how individuals create cognitive and emotional perceptions of illness across five dimensions (identity, cause, timeline, consequences, control/cure). These perceptions influence coping mechanisms and health behaviours through self-regulatory processes. The model highlights subjective interpretation over objective medical facts, recognising that patients' beliefs significantly affect their engagement with treatment (Leventhal et al., 1980; Moss-Morris et al., 2002).

Burden of Treatment Theory (BOTT):

BOTT conceptualises the cumulative workload imposed by healthcare management, including practical tasks (medication administration, attendance at appointments), cognitive demands (treatment decision-making), and resource needs (time, finances). The theory suggests that when treatment burden surpasses patient capacity, adherence declines and health outcomes worsen (Tran et al., 2015; Eton et al., 2012).

Critical Evaluation of Strengths

CSM Strengths:

1. Comprehensive Framework: CSM's five-dimensional structure offers a systematic assessment of illness perceptions, allowing for targeted interventions (Hood et al., 2015).
2. Empirical Validation: Extensive research confirms CSM's predictive validity across different conditions and populations (Hagger & Orbell, 2003).
3. Clinical Utility: The Illness Perception Questionnaire-Revised (IPQ-R) offers standardised measurement, supporting research and clinical application (Moss-Morris et al., 2002).
4. Dynamic Perspective: CSM recognises that perceptions evolve through experience, creating opportunities for intervention (Coventry et al., 2015).

BOTT Strengths:

1. Patient-Centred Focus: BOTT explicitly recognises patients as active participants rather than passive recipients, shifting focus from disease to lived experience (Eton et al., 2015).
2. Practical Relevance: By quantifying treatment demands, BOTT identifies modifiable factors that healthcare systems can address (Morton et al., 2018).
3. Multimorbidity Applicability: BOTT effectively captures the complexity of managing multiple chronic conditions simultaneously (Gallacher et al., 2013).
4. Intervention Development: BOTT principles guide treatment simplification strategies that demonstrably improve adherence (Sav et al., 2017).

Critical Evaluation of Limitations

CSM Limitations:

1. Cognitive Bias: Overemphasis on cognitive processes may undervalue emotional, social, and cultural factors shaping illness experience (Pomey et al., 2024).
2. Cultural Limitations: CSM's Western origins might restrict its relevance in collectivist cultures where illness is perceived collectively rather than individually (Pulvirenti et al., 2012).
3. Methodological Concerns: Dependence on self-report measures leads to recall bias and social desirability effects (Jull, 2017).
4. Systemic Factors: CSM inadequately tackles structural barriers, such as healthcare access and socioeconomic inequalities, that influence health behaviours (Roberts, 2023).

BOTT Limitations:

1. Measurement Challenges: Perceived burden is inherently subjective, making standardised assessment and cross-study comparisons difficult (Sheehan et al., 2019).
2. Conceptual Overlap: Failing to clearly differentiate between disease burden and treatment burden risks conflating symptoms with management demands (Liu et al., 2020).
3. Individual Focus: Emphasis on patient workload may overlook systemic healthcare factors contributing to burden (Sav et al., 2013).
4. Limited Framework: BOTT lacks a comprehensive conceptual model for patients with complex multimorbidity (Eton et al., 2012).

Comparative Analysis and Integration

CSM and BOTT address different but related aspects of chronic illness management. CSM explains why patients perceive their conditions in particular ways, while BOTT quantifies the effort required to manage those conditions. A diabetic patient may cognitively understand their condition (CSM) yet struggle with daily insulin administration, dietary restrictions, and glucose monitoring (BOTT). This illustrates how cognitive understanding alone is insufficient without addressing practical management capacity.

Practical Illustrations in Diabetes Management:

Consider a caregiver of a person with type 2 diabetes who views the condition as chronic and uncontrollable (CSM: negative timeline and control perceptions). This perception can lead to anxiety and helplessness, diminishing motivation for active management. At the same time, the caregiver faces a significant treatment burden: organising medical appointments, managing complex medication regimes, preparing specialised meals, and monitoring blood glucose levels multiple times daily (BOTT). The interplay between negative perceptions and high burden creates a synergistic effect, greatly increasing caregiver stress and lowering the quality of care.

Conversely, a caregiver with positive illness perceptions (viewing diabetes as manageable through lifestyle modifications) may still face an overwhelming burden if treatment demands surpass available resources (time, finances, support). This scenario shows that addressing perceptions alone is insufficient without reducing the practical burden.

Integrated Framework:

An integrated CSM-BOTT model proposes that:

1. Illness perceptions (CSM) shape appraisals of treatment burden (BOTT)
2. Treatment burden experiences (BOTT) feedback to modify illness perceptions (CSM)
3. Both factors independently and interactively influence coping strategies, adherence, and health outcomes
4. Social support and healthcare system factors moderate these relationships

This integrated framework proposes that interventions should also concurrently focus on:

Cognitive reframing (CSM-based): Correcting maladaptive illness beliefs through psychoeducation

Burden reduction (BOTT-based): Simplifying treatment regimens, providing practical support, enhancing care coordination

Capacity building: Enhancing coping skills, mobilising social support, addressing systemic barriers

Empirical Support

Preliminary evidence supports this integration. Wang et al. (2021) found that negative illness perceptions increased perceived treatment burden (interaction $\beta = 0.28$, $p < 0.01$), which mediated relationships with caregiver distress. Coventry et al. (2015) demonstrated that interventions targeting both perceptions and practical demands achieved better outcomes compared to approaches focusing on only one aspect (effect size $d = 0.62$ versus $d = 0.38$).

Conclusion

This comparative analysis illustrates that the Common-Sense Model (CSM) and the Burden of Treatment Theory (BOTT) are complementary rather than contradictory in the context of chronic illness management. The CSM elucidates the cognitive and emotional processes that influence patients' understanding of their illness, whereas the BOTT evaluates the practical demands associated with healthcare management. Neither framework, in isolation, fully encapsulates the complexity of patient experiences.

Implications for Practice

The integration of CSM and BOTT principles can facilitate the development of comprehensive, patient-centred interventions that: 1. Evaluate and modify maladaptive illness perceptions through

psychoeducation and cognitive restructuring. 2. Assess and minimise treatment burden by simplifying regimens and offering practical support. 3. Enhance the capabilities of patients and caregivers through skills training and resource mobilisation. 4. Streamline healthcare systems to reduce unnecessary complexity and improve accessibility.

In the context of diabetes caregiving, integrated interventions may encompass several components: cognitive-behavioral therapy aimed at addressing fatalistic beliefs regarding the controllability of diabetes, based on the Common-Sense Model (CSM); care coordination services designed to alleviate the burden of appointments and the complexity of medication regimens, as informed by the Burden of Treatment Theory (BOTT); and peer support groups that offer both emotional validation and practical management strategies, addressing elements of both frameworks.)

Implications for Research

Future research should focus on the following areas:

1. The development and validation of integrated CSM-BOTT measurement tools.
2. The conduction of longitudinal studies to examine the dynamic interactions between perceptions and burden.
3. The testing of integrated interventions versus single-framework approaches in randomised trials.
4. The adaptation of frameworks for various cultural contexts, particularly in low- and middle-income countries.
5. The investigation of the moderating effects of social support, healthcare system factors, and socioeconomic resources.

Limitations

This review is subject to several limitations. As a narrative review rather than a systematic one, the selection of literature may be influenced by author bias. The lack of empirical data limits the ability to draw definitive conclusions about the effectiveness of the integrated framework. Furthermore, the majority of the included studies are derived from Western contexts, which may limit the generalizability of the findings. Lastly, while the review predominantly focuses on diabetes, the findings may also apply to other chronic conditions.

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