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Making the implicit explicit: A visual model for lowering the risk of implicit bias of mental/behavioural disorders on safety and quality of care

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Abstract

Persons with mental illness and/or addictions have poorer health outcomes than the general population. Lower quality of healthcare has been identified as an important factor. A main contributor to lower quality of care for people with mental illnesses and/or addictions may be the cognitive implicit bias of mental versus physical care when assessing and categorizing a patient's clinical presentation. The objective of this article is to highlight how this implicit cognitive bias of mental versus physical care can result in human factor risks to quality of care. We provide three specific case examples of where these quality concerns arise. We also propose the use of a new visual tool to help educate and create awareness of this implicit-bias-based risk and quality care problem.

Introduction

The objective of this article is to highlight how the implicit cognitive bias of mental versus physical care can result in human factor risks to quality of care. This includes such risks as diagnostic overshadowing, role confusion, provider conflict, and lower patient satisfaction. We provide three specific case examples of where these quality concerns arise and propose the use of a new visual tool to help educate and create awareness of this implicit-bias-based risk and quality care problem. We hope this tool may aid health leaders and others in governance and oversight roles within healthcare to have greater insight into an otherwise hidden process and dynamic within clinical care. We also hope this tool may be used as a part of larger quality improvement initiatives or frameworks to help identify previously hidden quality risks for people with mental illness and additions, ultimately helping to inform the development of improved quality and safety processes.

Persons with mental illness and/or addictions have poorer health outcomes than the general population. Recent evidence suggests the greatest cause of excess morbidity and early mortality in this population is not suicide but common chronic health conditions such as cardiovascular disease, respiratory disorders, diabetes, and tobacco-associated illness.[1] This research also found that disparities in health outcomes are not driven by increased risk associated with ethnicity or socioeconomic status, leading some researchers to argue that people with mental illness and addictions should be viewed as a health disparity group in their own right.[1-3] Lower quality of care for people with mental illnesses and addictions has been identified as a key factor in these unequal health outcomes.[4]

A main contributor to lower quality of care for people with mental illnesses and/or addictions may be the cognitive "functional versus organic" or mental versus physical paradigm or mind-body split health providers use in thinking about physical and mental health and illness.[5,6] This paradigm provides a cognitive structure that leads physicians to separate and divide physical health from mental/behavioural health when assessing and categorizing a patient's clinical presentation (see also the study by Ungar and Knaak[5,6]). A consequence of this a priori heuristic is that it manifests as an implicit cognitive bias when treating persons with mental health or behavioural health conditions—akin to the implicit biases of gender, ethno-racial characteristics, and socioeconomic background.

Clinical decision-making processes are indeed complex, dynamic, and subject to human factors.[7] In addition to conscious and careful analytical thinking (System II thinking), clinicians' decision-making processes also include a heavy reliance on intuitive and unconscious System 1 thinking—which is where implicit biases reside.[8] When left unrecognized, the mental versus physical bias can lead to poor decision-making, role confusion and role conflict, and poor communication.[9-13] It can interfere with the delivery of integrated physical and mental healthcare and interprofessional collaborative care, and is also a key driver of diagnostic and treatment overshadowing in mental health and addictions care.[9-13]

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The Inset below provides three examples of how these quality and safety risks occur in clinical situations arising from conflict and confusion in role/service responsibility when working with patients with mental illnesses or addictions. It is our position that much of this confusion and conflict can be understood as arising from the unrecognized cognitive separation of physical versus mental health. As highlighted in the inset, all result in poorer quality care.

Example 1: Diagnostic overshadowing

A 67-year-old male with a history of schizophrenia is brought to the emergency department on a Friday evening of a long weekend by a family member. The family member indicates he was behaving oddly, more confused, wandering, felt something was not right. His vital signs were stable, and he was triaged by the emergency department as a Canadian Triage and Rating Scale level 3 (CTAS-3). He was seen briefly by the emergency department physician and referred to psychiatry with no physical examination. While waiting, his behaviour and symptoms worsen to the point that he is placed on involuntary admission and restrained, both physically and chemically. Two hours later, he is seen by the psychiatrist. The psychiatrist's assessment is that the patient's problem is primarily physical and requests the patient be reassessed by the emergency department for medical stability and possible referral to internal medicine. The ER does not want to reassess the patient, believing his care should be the responsibly of psychiatry. As the disagreement continues over which service is responsible for care, the patient remains in the emergency department with physical and chemical restraints. On the morning of the holiday Monday, the patient is discovered with vital signs absent, deceased. Autopsy reveals the patient was suffering from mild pneumonia, undiagnosed type II diabetes, and a deep vein leg thrombosis with cause of death pulmonary embolism. A coroner's inquest focuses primarily on gaps in restraint protocols as opposed to the more likely root cause, which was the risk arising from the role confusion and implicit cognitive bias of diagnostic overshadowing, that is, where a history of Mental Health and/or Substance Use disorders (MHSU) can result in stereotypical, biased, pattern recognition and discounting of patient symptoms, "blinding" a healthcare provider to undertake usual care assessment for physical health concerns, with resulting increases in morbidity and mortality.[14]

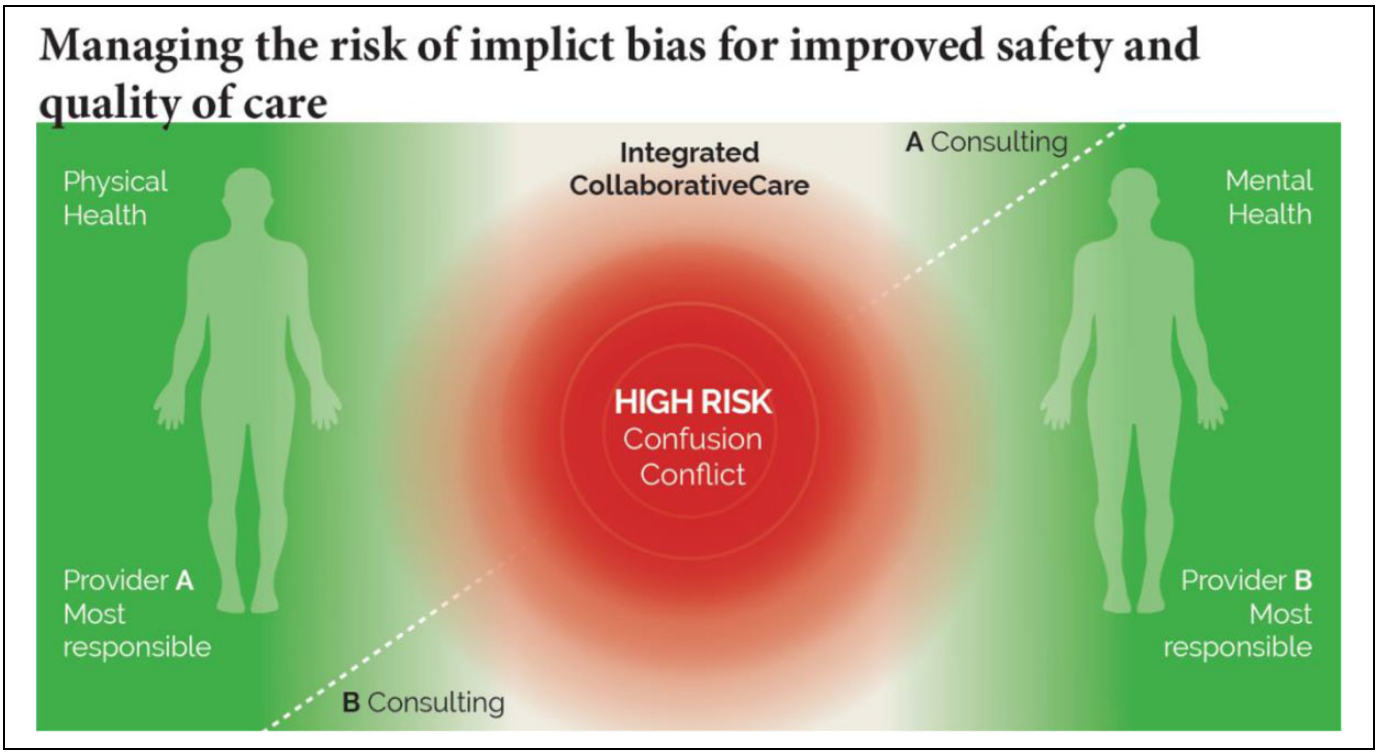
Example 2: Disintegrated care

A 32-year-old lawyer is referred by her family physician to a psychiatrist for consultation for the first episode of bipolar disorder not responsive to lithium. The psychiatrist initiates treatment with an antipsychotic mood stabilizer medication. Potential side effect risks include weight gain and metabolic syndrome. Best practice guidelines recommend routine pretreatment baseline metabolic lab testing for glucose, lipids, cholesterol, as well as weight and waist circumference. The psychiatrist and the primary care physician are on different electronic health record systems. The psychiatrist assumes the family physician is MRP (Most Responsible Physician) and will monitor the patient's routine blood work. The family physician assumes the psychiatrist who prescribed the new medication is responsible for ordering and monitoring any required lab testing. As a best practice protocol, the family physician rarely orders routine blood work on an otherwise healthy young person. A year after starting the new medication, the patient experiences a sudden onset of chest pain, is taken to hospital, and is diagnosed with an acute myocardial infarction. It is determined that the myocardial infarction was likely secondary to new-onset diabetes mellitus and metabolic syndrome induced by the antipsychotic mood stabilizer medication.

Example 3: Physical medical care versus MHSU service silos

A 35-year-old woman living in a shelter with a history of substance use problems, post-traumatic stress disorder, and self-harm presents to a hospital emergency department with fever and acute respiratory symptoms. She is diagnosed with COVID-19. She requires hospitalization with isolation precautions but no ventilator support. There is disagreement as to where in the hospital she should be admitted. The internal medicine service is concerned that the patient may not adhere to isolation and mask-wearing protocols. Internal medicine nursing staff feel they lack the skills to manage the patient's potentially challenging behaviours and have safety concerns. A request is made to the psychiatry service to admit the patient, as they have some locked rooms and clinical skills in behavioural management and de-escalation. The psychiatry service refuses as they are concerned about the lack of medical infrastructure on the unit (eg, oxygen) and that the psychiatric staff do not have the best matching skill set to care for a patient with COVID-19. While the different services remain in negotiation and conflict, the patient continues for the next 48 hours to receive care in the emergency department. Emergency department staff are increasingly frustrated that the patient is not being admitted to an inpatient unit.

To help mitigate the negative consequences of this implicit bias in clinical encounters with patients with histories of mental illness or addiction mental/behavioural health, we have created a visual model that makes explicit the clinical environment where this implicit bias can manifest and where the clinical moments of highest risk can occur (see model below). The model is partly inspired by the conceptual model used in palliative care, which reframes the old model of a single goal of either cure or comfort measures or clinical thinking by using a diagonal line and more recent bow-tie visual model[15] to represent the concurrent role shifts of health providers from cure to comfort measures, allowing for both goals to be pursued simultaneously. Borrowing from the benefits and medical cultural success and utility of this evolved visual model, we have analogously sought to reframe the "physical versus mental/behavioural health" divide by using a diagonal line to represent the concurrent clinical needs for both physical and mental/behavioural health concerns apportioned appropriate to patient need.



The model is intended as a visual language and representation to directly address the negative consequences of the functional versus organic or physical versus mental/behavioural health divide by showing where the highest clinical risk of this bias exists, and also to improve quality care by encouraging physical and mental/behavioural health providers to work collaboratively—in roles and areas of responsibility that meet the need for a more integrated approach to physical and mental/behavioural care.

Collaboration is often misunderstood as equality in decision-making. Really, it's about "correct intent," where providers contribute expertise within their role and scope of practice. As such, designing for improved role clarity should lead to better quality of care and health outcomes for persons with mental illness and/or addiction.[10] To this end, we propose that the use of the visual model could help practitioners and decision makers to more easily recognize—and therefore minimize—the types of conflict zones and accompanying risks highlighted in the case examples we provide in the Inset. As the use of the diagram leads to ever-better awareness and identification of these risk areas, we hope it may also help practitioners and decision makers to design new quality improvement protocols/processes to more systematically address common areas of role confusion and conflict.

In this way, the visual model is intended as a transformative learning tool[16-18] to help make a hidden cultural implicit cognitive bias visually explicit and to offer a new conceptual representation as an assist and solution. Although we cannot know exactly how it may be used, we anticipate it will be most helpful as an educational and awareness raising tool. We also suggest it may be used to assist clinical decision-making or as a starting point to stimulate conversations about policy development to improve quality. These include the following:

a) *Safety:* The model highlights a high-risk interprofessional human interaction and clinical decision-making zone where it is common for clinical providers to disagree, which can result in a delay or neglect of care when neither provider assumes primary responsibility (eg, by thinking the patient's condition is the other provider's concern, see all three Inset examples).

Identifying this risk allows for increased vigilance and safety processes.

b) *Cost and efficiency improvements:* Duplication or unnecessary investigations and/or treatment commonly occur when two or more services overlap, and more than one provider assumes responsibility or repeats what others have already provided (see Inset, Example 2, which illustrates the other end of the continuum of the quality problem of disintegration). The model can help inform and highlight when multiple providers are occupying and duplicating the same clinical roles and encourage clarification of responsibilities.

c) *Patient satisfaction and timeliness:* Patients and their families may be "caught in middle" of provider disagreement and conflict, leaving them feeling discounted, ignored, and unclear which provider, service, institution, or organization is responsible to care for them (see Inset, particularly Example 3). As the model highlights the need for concurrent integrated physical and mental healthcare services in varying and modifiable proportions, it has positive implications for the potential to enhance patient satisfaction and timeliness of care.

d) *Improved effectiveness:* Human factor quality risks, such as diagnostic and treatment overshadowing for example, can better be anticipated (see Inset, particularly Example 1). This new visual model can help inform the development and implementation of standardized evidence-based clinical service pathways. "Most appropriate service" policies can be co-produced amongst interprofessional multidisciplinary providers, patients, families, and quality of care professionals based on the principle of "what is best for the patient." Examples include standard emergency department medical stability assessment protocols and standard algorithm service responsibility pathways for complex mixed clinical presentations such as confusion in the elderly, acute intoxications, overdoses, or persons with psychosis as recommended to improve mental/behavioural health such as initial presentations in emergency departments.[19]

e) *Improved provider satisfaction, reduced role confusion and conflict:* Clinical judgment vulnerable to implicit bias can contribute to disagreement and interprofessional conflict, reduced workplace satisfaction, burnout, and lower health provider wellness. The visual model provides a non-verbal communication process for improved role negotiation and clarification amongst providers to ensure both physical and mental/behavioural concerns are addressed, as well as a conceptual foundation for policy development and quality reviews (eg, we believe this applies to all examples provided in the Inset). Development of a dispute resolution process would be beneficial to assist the inevitable differences in clinical opinion between physical and mental/behavioural health providers that may persist despite the new visual model.

f) *Enhanced quality monitoring and oversight:* Quality of care professionals, committees, and oversight bodies may gain insight and added contextual information related to human factor processes—including the role of implicit bias—when reviewing critical incidents (See Inset, Example 1), as well as in monitoring and tracking safety and quality in mental/behavioural health. This new visual model may be particularly informative for incidents and risks related to physical healthcare of a person with mental/behavioural health of substance use disorder (eg, we believe this applies to all examples provided in the Inset).

Implicit biases manifest not only at the level of the individual practitioner but also at the level of clinical services, institutions, and organizations. To this end, we hope that this visual model may also work to help advance equity in mental/behavioural health. As we see it, identifying and visually highlighting how and where implicit bias clinically manifests necessarily invites the development of new quality measures for the pillar of equity[3,4] in mental illness and addiction care, which may in turn lead to increased parity and prioritization of ensuring adequate access and resources for mental/behavioural care relative to physical care. Persons deserve quality care for both physical and mental/behavioural health and substance use disorders. We hope that contributing a new visual model advances thinking by making explicit the implicit cognitive bias of mental illness/behavioural/substance use disorders and helps to facilitate improvements in quality of care.

It is important to note two key limitations of our model. The first is an acknowledgement of what this model can and cannot do as a stand-alone quality improvement tool. Namely, its strength lies in its usefulness as an awareness-raising or transformation learning aid. For actual quality improvements to occur—that is, changes in behaviours, clinical decisions, safety and quality processes, and protocols—the awareness-raising function of the tool must be paired with actions that currently lie beyond the scope of what the model provides.

The second limitation is that the model's efficacy as an educational and awareness raising tool—or as one part of a larger quality improvement or clinical decision-making framework—has not yet been established. This is an important direction for future research. One activity that will help to address this gap is that the model will be used as part of awareness-raising training program for health leaders and decision makers on mental illness and addictions-related structural stigma in healthcare. This educational program is being developed by the Mental Health Commission of Canada as part of its structural stigma and access to quality mental health services initiative. The use of the model as a content element will allow for an assessment of its usefulness and validity as an educational tool and will also provide an opportunity to gain feedback that may lead to modifications or improvements to the model itself.

Authors' note

T.U., S.K., and E.M. co-wrote the article. T.U. developed the model. All authors have read and approved the final version of the article and model. Patients or the public were not involved in the design, or conduct, or reporting, or dissemination plans of our research.

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