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NEW AND EMERGING PROFESSIONALS

## Understanding the Progression from Physical Illness to Suicidal Behavior: A Case Study Based on a Newly Developed Conceptual Model

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### ABSTRACT

Suicide in older people is a significant public health issue given the aging population and increasing suicide rates with age in many parts of the world. Depression and physical illness are two factors consistently associated with suicidal behavior in older people; however, their inter-relationships are not well understood. We present here a case study based on a newly developed conceptual model illustrating the various medical, psychological, social and resilience factors involved in the progression of physical illness to suicidal behavior. This model provides a framework for clinicians to understand protective factors and address late-life suicide risk.

### KEYWORDS

Depression; older adult; physical illness; resilience; suicide

### Introduction

Late-life suicide is a growing public health concern in developed and developing countries. Although suicide patterns across age groups vary in different countries, the overall global male and female suicide rates increase with age between the ages of 60 and 90 years (Shah, Bhat, Zarate-Escudero, De Leo, & Erlangsen, 2016). Late-life suicide is a complex and heterogeneous phenomenon associated with a number of biological, psychiatric, medical, psychological and social factors that may enhance risk or promote resilience. A recent review found depression was the most common psychiatric illness associated with late-life suicide; while physical illnesses played a significant role in approximately 55% of late-life suicides (Cheung, Merry, & Sundram, 2015b).

Barracough's classic study on late-life suicide suggested that the association between physical illness and suicide is seldom direct and is largely mediated through a mood disorder (Barracough, 1987). Other authors have also suggested that the risk associated with physical health is likely to be mediated by their relationship with mental health factors. The association between physical factors and suicidal behavior (death wishes, suicidal ideation, non-fatal suicidal behavior, and suicide) in

older people was examined in a recent systematic review, which found a consistent link between functional disability and suicidal behavior (Fässberg et al., 2015). This review found that suicidal behavior among older people was associated with specific physical conditions: malignancy, neurological disorder, male genital disorder, arthritis/arthrosis, chronic obstructive airway disease (COPD), and liver disease (Fässberg et al., 2015).

The progression of physical illness to late-life suicide is however currently poorly understood. The literature on this area is largely based on quantitative studies that have not been able to refine on possible explanations. Qualitative studies in this area have provided us with some insight into the possible mechanisms of how physical illnesses progress to suicidal behavior in older people. For example, a common theme was identified in the six qualitative studies included in Fässberg and colleagues' systematic review: "Physical illness and functional disabilities were experienced suicidalogenic when they threatened the person's independence, sense of usefulness, value, dignity, and/or pleasure with life." (Fässberg et al., 2015). A recent qualitative study of suicide notes left by older people found the commonest reasons given for

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suicide were reduced quality of life and that life was a struggle as well as physical health problems and inability to function independently (Cheung, Merry, & Sundram, 2015a).

A past history of suicide attempt has been considered the most important risk factor for suicide among older people (Hawton & Harriss, 2006; Murphy et al., 2012) but the interaction with other possible risk or protective factors is unclear. This paper will present the assessment and management of an elderly man who had made a serious suicide attempt and utilize a newly developed model illustrating the progression of physical illness to suicidal behavior. We are also hoping this model will assist gerontology clinicians to formulate and understand the suffering and challenges of at-risk older people with physical illness and provide interventions when they are indicated.

## Case Presentation

### Background

Mr. X was a 76-year-old single man who lived in a retirement unit near the city centre. He was fit and healthy until he had a stroke 6 months before his suicide attempt. He mainly had residual physical impairment related to his upper and lower limbs on the left side and was left-handed. He received a period of inpatient rehabilitation and was able to mobilize with a low walking frame before he was discharged home with home care support.

During one of the home visits, he was found semi-conscious by a district nurse, collapsed on the floor in his unit possibly for at least 48 hours. He was admitted to hospital and the working diagnosis was an unwitnessed fall and dehydration. A week into his admission, his brother alerted the medical team that he had discovered empty packets of lorazepam in Mr. X's unit and believed he had taken an overdose, which caused his presentation. The medical team subsequently referred Mr. X to a liaison psychiatrist. At the psychiatric assessment, Mr. X reported ongoing hopelessness and suicidal ideation. The following precipitating factors leading to his suicide attempt were identified through self-report during the psychiatric assessment process.

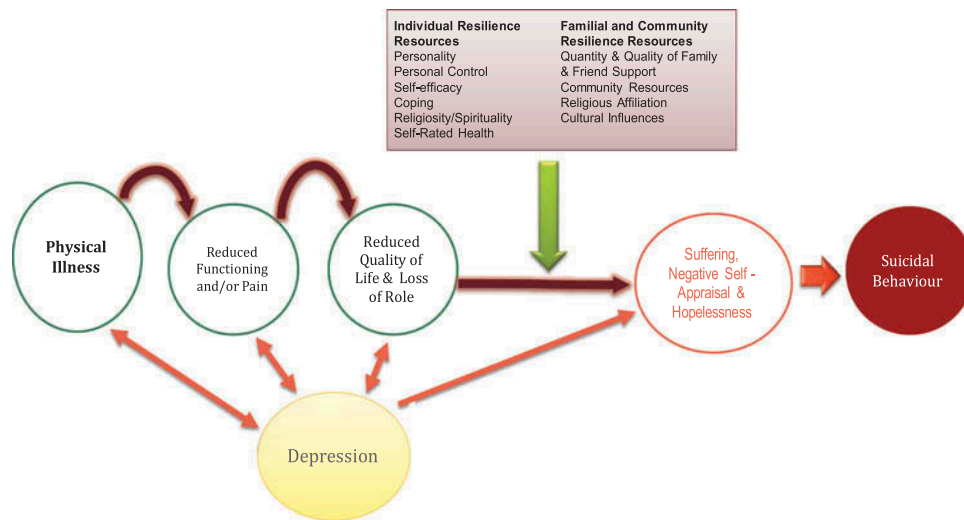
- (1) Mr. X was a volunteer coach for his local community basketball team. He lost this role and contact with the basketball team following the stroke.
- (2) His sister, his main confidant, died of breast cancer 2 months before his suicide attempt.
- (3) His brother, the only surviving sibling, was planning to move to a distant town for his retirement in 6 months.
- (4) Increasing pain and immobility from the contracture in his left arm.

### Formulation

In order to integrate and understand the various predisposing, precipitating and perpetuating factors involved in this case, the liaison psychiatrist decided to apply the physical illness-suicidal behavior conceptual model. (Figure 1)

This conceptual model was developed by applying the insight gained from the findings of the suicide notes study and qualitative studies in the systematic review of physical illness and suicidal behavior in older people (Cheung et al., 2015a; Fässberg et al., 2015). These two studies have highlighted that older people with physical illness presenting with suicidal behavior frequently have reduced functioning and quality of life; and these two components are included in the model (green circles) as the initial steps of the progression of physical illness to suicidal behavior. Depression is a key element in this model: it interacts with physical illness, functional impairment, quality of life and the development of hopelessness. Depression can contribute to the development and progression of some physical illnesses, while physical illness can in itself increase the risk of depression (Gurland, 1992; Steptoe, 2006). In addition, a longitudinal study of community dwelling older people has found that functional impairment was a significant risk factor for depression, regardless of disease status (Zeiss, Lewinsohn, Rohde, & Seeley, 1996). And finally, depression can result in functional impairment and reduced quality of life (Gaynes, Burns, Tweed, & Erickson, 2002; Gurland, 1992).

Compared to younger people, there is a paucity of literature on resilience in older people. Ong and Bergeman (2004) developed a conceptual depiction of the resilience process involved when an



**Figure 1.** A conceptual model of physical illness and suicidal behavior \*Suicidal behavior includes death wishes, suicidal ideation, suicide attempt and suicide.

older person is faced with stresses (e.g., life events, perceptions of stress, stress exposure, stress reactivity) and how resilience resources can impact on the individual outcome trajectories of health and well-being in later-life (e.g., physical health, functional status, subjective and psychological well-being). In this model, individual resilience resources include personality, optimism, personal control, coping, religiosity/spirituality, and self-rated health; while familial and community resilience resources include quantity and quality of support of family and friends, community resources, religious affiliation and cultural influences. We adopted the resilience resources in Ong and Bergeman's model and postulate that suicidal behavior in older people is a result of difficulties coping with the stress of physical illness, loss of independence (current or future) and functional impairment.

The liaison psychiatrist then shared her formulation and the conceptual model with Mr. X who was in agreement with it. The model also helped him to understand how his medical and psychosocial issues were inter-related and contributed to his suicide attempt. In particular, he acknowledged how his recent stroke had led to multiple losses including functioning, role and quality of life (green circles in the model) as well as increased pain. He also became more aware of how the recent losses of his familial resilience resources

(i.e., death of sister and anticipated loss of brother's support) had resulted in a worsening of his depression and an increase in hopelessness.

### **Treatment Approaches and Outcome**

Following his psychiatric assessment, the liaison psychiatrist made a diagnosis of major depressive disorder. The conceptual model provided a framework for multidisciplinary team discussions and interventions. These included:

- (1) the geriatrician addressing Mr. X's analgesics by starting him on regular paracetamol and morphine elixir;
- (2) the occupational therapist and physiotherapist providing Mr. X with physical rehabilitation to maximize his physical functioning;
- (3) the liaison psychiatrist starting him on citalopram, an antidepressant medication;
- (4) the clinical psychologist providing him with a course of interpersonal psychotherapy to address the issues of grief, loss of his role following the stroke and anticipated loss of support from his brother.

One of the therapy goals was to improve his community and familial resilience sources. These interventions included ways to re-establish contact with members of the basketball team and maintain contact with his brother following his move.

Mr. X's depression was in remission after 4 weeks of the above multi-disciplinary team interventions. A community social worker was allocated to provide case management for Mr. X following his discharge. Mr. X was more optimistic and felt better able to manage with the challenges and stresses living in the community again.

## Discussion

In this conceptual model depression is considered as a contributor to suicidal behavior, which is consistent with our current knowledge of late-life suicide. It builds on the proposition that the association between physical illness, functional impairment and suicide is not direct but is largely mediated through mental health disorder (in particular depression) (Barracough, 1987; Conwell & Thompson, 2008; Kaplan, McFarland, Huguet N, & Newsom, 2007).

The Interpersonal Theory of Suicide is one of the most widely cited suicide theories in recent years. It proposes two proximal causes of the desire for suicide (thwarted belongingness and perceived burdensomeness, collectively referred as social disconnectedness) and this suicidal desire progresses to death by suicide only when suicidal desire is accompanied by an acquired capability for suicide (Van Orden et al., 2010). Our physical illness-suicidal behavior conceptual model considers the phenomenon of suicidal behavior (i.e., death wishes, suicidal ideation, suicide attempt and suicide) as a continuum (Larsson, Palsson, Waern, Landahl, & Ostling, 1996; O'Connell, Chin, Cunningham, & Lawlor, 2004; Paykel, Myers, Lindenthal, & Tanner, 1974). We believe the Interpersonal Theory of Suicide can help us to understand the progression of death wishes to suicide along this suicidal continuum where a lethal/near lethal suicide attempt occurs only when the desire for suicide is accompanied by an acquired capability for suicide. Van Orden and Conwell (2011) applied the Interpersonal Theory of Suicide to late life and included in this model are the key risk factors of psychiatric illness, functional impairment, physical illness and pain, social isolation and access to lethal means. These key risk factors (except access to lethal means) are also included in our physical illness-suicidal behavior conceptual model. However, we have highlighted them in a linear fashion (with bi-

directional interaction in some risk factors) illustrating the progression from physical illness to suicidal behavior with the aim of providing a more dynamic consideration of these risk factors when formulating clinical cases.

Rurup and colleagues (2011) developed a framework of the origins and development of a wish to die among older people. Our model is comparable to the framework presented by Rurup and colleagues in terms of life events and/or problems of aging/illness, which may represent the triggers in the development of the wish to die; our model further enhances the framework by considering how personal character, coping strategies, and social support moderate this process. Additionally, clinical diagnosis of depression and functional impairment are not part of the Rurup and colleagues' framework but are key components in our model in understanding the development of suicidal behavior and also providing potential intervention points for suicide prevention.

This paper specifically focuses on the issue of physical illness and suicidal behavior; it does not provide a comprehensive/systematic review of suicide among older people. The conceptual model presented has not been tested empirically in terms of improving clinical outcomes. However, it has provided a unique framework for understanding, formulating and managing this elderly man and was especially useful during multidisciplinary team discussion. Being able to visualize the inter-play of various medical and psychosocial factors was particularly useful when communicating the formulation and treatment plan to the patient and multidisciplinary team. The multidisciplinary felt that Mr. X's engagement improved when the formulation and treatment plan was communicated with him and this in itself could have improved his understanding of his circumstances and reduced his hopelessness. It also provided an opportunity for shared discussion, decision-making and targets for intervention. Health professionals involved in his care were clear about their role in promoting Mr. X's recovery and independence. Team morale and satisfaction also subsequently improved when supporting this man, who initially presented in a rather hopeless situation.

Due to the ongoing challenges and stress of his physical disability, it was decided that Mr. X would continue to receive maintenance interpersonal psychotherapy and antidepressant medication in

the community, an intervention that has been proven to reduce the relapse rate of late-life depression (Reynolds III et al., 2006).

### Clinical Implications

This model provides a framework for clinicians to understand the risk and protective factors related to suicidal behavior in older people, especially when associated with physical illness, which represents a not uncommon clinical presentation. As suicide prevention in older people with physical illness involves a whole health sector and community approach, this model highlights a number of intervention points where clinicians working in the field of gerontology (such as geriatricians, old age psychiatrists, consult-liaison psychiatrists, pain specialists, gerontology nurses, community mental health nurses, occupational therapists, physiotherapists, social workers, psychologists and general practitioners) can address the well-being of older people by reducing their risk while enhancing the protective factors associated with suicidal behavior. These interventions can include:

- Optimizing the medical management of physical illness (including pain) and addressing functional impairment;
- Delivering evidence-based pharmacological and psychological treatment (e.g., cognitive behavioral therapy, interpersonal psychotherapy, problem-solving therapy) for older people with depression; assistance in accepting their physical disabilities, reduced quality of life and loss of role, and exploring their individual resilience resources;
- Input and support from community, cultural and religious groups and family to expand external resilience resources.

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