

## Introduction for Suicide Study

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### Abstract

Human suicide is affected by a great variety of causality. Due to diversities of suicide causalities, suicide predictions and prevention are no easy tasks. This article outlines the history of suicide study, current diagnostic and therapeutic routine, pathogenesis study, new therapeutic models and future directions. This introduction aims to update human suicide study and future aspects of clinical interventions in suicide risk predictions and prevention.

**Keywords** Suicide; Human genome; Mood disorder; Environmental factor; Economic condition; Brain neural imaging; Human genomics; Human bioinformatics; Medicinal chemistry; Animal model; Depression; Mania; Self-harming

### Introduction

Human suicide is affected by a great variety of causalities from both insiders and outsiders. Due to diversity of causalities, suicide control is no easy task. In order to make a difference in this era, new initiatives must be established for proper suicide predictions and prevention. This article aims to introduce update human suicide study information and different types of clinical interventions (both cognitive-behavior therapy and chemical drug therapies). Of course, new ideas and perspectives for future study are also presented.

Human suicide study lasts more than 2000 years for diagnostic/therapeutic progresses; different ranges of environmental insults affecting suicidal event rates, mortality predictions and diagnostic improvements with modern state-of-the-art technology; pathogenesis causalities of suicide activities via pathways from visual to molecular to genetics or via pathway from genetics to molecular to visual; therapeutic innovations (such as seek medications from multidisciplinary); future perspective of overall suicide treatment studies.

### Early History and Diagnostics of Suicide Risks and Mental Health Problems

It has just recently discovered that suicide risks and mortalities are greatly associated with human mental health problems-including mood disorder, affective diseases, depressive disorders, schizophrenia and so on [1-4]. Mood disorder, as a mental health problem was discovered over 2000 years [3-4]. But its diagnostics and therapeutic progression was in a slow pace before 1800. By entering into a medical science magical era (after 1900), knowledge towards mental health problem is flourishing [4]. Modern medical science developments are great and new technologies are coming up quickly. Since the understanding of human suicide risks and mortalities can be improved by mental health disorder studies and therapeutic updating,

diagnostics of different mental health problems is a basic step for suicide predictions, preventions and overall managements. As a result, this book documents our insights into this association, diagnostic classifications and therapeutic managements. This article addresses this diagnostic matter in details and introduces some new initiatives from updating diagnostic medical information and technological improvements and cost reducing.

### Environmental Factors and Interactions with Each Other

Unlike other diseases, a great variety of environmental factors can affect human suicide rates, mortalities and intervention outcomes [5-7]. Human suicide events and episodes are affected by outsider factors—including social, cultural, economic, legal, cognitive, past trauma, substance-dependent, bad living habits, physical handicaps and so on [5-7]. As a result, building the relationship between insider (genetics/chemical) and outsiders (environmental factors) is an indispensable path of future suicide scientific studies. Mathematics may take part growing responsibility in suicide predictions, preventions and clinical managements [7].

### Current Preventive and Therapeutic Aspects of Suicide Risks and Mortality

Currently, suicide diagnostics and therapeutics are hierarchy-from low-tier hospital to psychiatric specialized hospitals [8-10]. However this hierarchy system is unable to find disease origin immediately. Conclusively, current preventive and therapeutic aspects of suicide risks and mortality are at least not perfective, especially for available drugs and therapeutic modes. Due to this imperfection, expanding efforts can be made for therapeutic promotions. In chapter 3, we outline the current routines and main limitations of suicide (mental illness conditions, categories, disease classifications and so on) preventions, proper medical interventions and immediate managements. From these introductions, new generations of suicide treatments and clinical diagnostic routines can be generated. Suicide/mental illness therapeutic updating, human diagnostic prediction capabilities and targeted therapeutic preventions in the fields of suicide/mental illness studies must be established.

## Etiological/Pathogenesis Study of Suicide Risks and Mortality

Etiological/pathogenesis studies of suicide risks and mortality have to be made for making a great difference in suicide/mental illness predictions, preventions and therapeutics [8-11]. It is so important a task that will decide future aspects of suicide molecular/process diagnostics and therapeutic supports. Yet, most of these etiological/pathogenic suicide studies (genotypic/molecular/phenotypic) are generally unclear. Almost no well-established molecular mechanism has been available for suicide diagnostic, preventive and therapeutic improvements. Hypothetically, clinical situations and future trends from new scientific discoveries and modern techniques utilities will be separately studied [8-12].

## Seek Medications from Multi-disciplinary

Since a great number of factors can play key roles for affecting rates and risks of suicidal events and mortality, different levels of pathogenic components and processes need different types of diagnostic measures and therapeutic targets. However, most psychiatrists are unable to master all these diagnostic data, modern technology choices and mathematic analysis [12,13]. In order to improve the quality of suicide prediction, preventions and immediate symptom control, seek medications from multi-disciplinary seem to be inevitable [14].

## New Drug Developmental Updating and Clinical Targeted Drug Utilities

Unlike other disease treatments, chemotherapeutic drug utility is the least therapeutic options for suicide/mental illness managements [15-20]. The only reason for this is the lack of specific, highly effective and low toxicity chemotherapeutic drugs for long-term utility and sophisticated diagnostic system for disease monitoring. In order to change this scenario, modern experimental models and clinical diagnostic systems must be established [19,20]. Of course, drug toxicity and undesired side-effects must also be systematically studied [21-25].

## Future Directions

In future, human suicide risks and mortality predictions and clinical diagnostics may be transformed from symptom-based score-index into pathogenic profiling supporting characters. In addition, specific, highly effective and low-risky drug interventions and managements may be utilized from parameters of objective data (genomics/bioinformatics/morphology systems) [14].

## Conclusion

Currently, suicide risks predictions are mostly coming from psychiatric problems and treatments are commonly empirical rather than diagnostics via modern technique-based systems. They are based on 4-5-tiers of hierarchy diagnostic-therapeutic systems-a long process. This is very harmful for quick suicide managements and cost-effective therapeutics. However, modern techniques (genetics/bioinformatics/brain morphological) systems will change the landscapes of psycho-pathological studies and help the suicide sufferers as early as possible and treatment costs as low as possible [26].

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