Patient safety and person-centeredness in healthcare for patients with suicidal behavior

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Syk blir en av ropet om virkelighet.
Altfor nær var jeg tingene,
slik at jeg brant meg igjennom
og står på den andre siden av dem,
der lyset ikke er skilt fra mørket,
der ingen grenser er satt,
bare en stillhet som kaster meg ut i universet av ensomhet,
og av uhelbredelig ensomhet.
Se, jeg svaler min hånd i kjølig gress:
Det er vel virkelighet,
det er vel virkelighet nok for dine øyne,
men jeg er på den andre siden
hvor gresstrå er kimende klokker av sorg og bitter forventning.
Jeg holder et menneskes hånd,
ser inn i et menneskes øyne,
men jeg er på den andre siden
der mennesket er en tåke av ensomhet og angst.
Å, om jeg var en sten
som kunne rumme denne tomhetens tyngde,
om jeg var en stjerne
som kunne drikke denne tomhetens smerte,
men jeg er et menneske kastet ut i grenselandet,
og stillheten hører jeg bruse,
stillheten hører jeg rope
fra dypere verdner enn denne.

Fra en annen virkelighet

Gunvor Hofmo, 1948

This thesis is dedicated to:
The one who spent hours in a parking lot, convincing someone they were safe.
The "pretty tough" woman at the child psychiatric unit who advocated for a child's needs at school.
The psychiatrist who drove to a secret hideout and took a walk with a man and his dog.
The nurse who brought his own dog to work to meet someone who dreamed of having one.
The nurse who inspired someone to envision a future by sharing how he, too, had spent nights on rooftops.
The relatives of that artist, whose actions helped others speak about suicide.
"That fantastic physician."
The father who comforted other bereaved parents by sharing his own loss.
The physician who saved a life by listening.

And to all the 217, the 4,537, the 28, and the 31 of you who shared your personal stories with me.

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ABSTRACT

Patient safety is a cornerstone of high-quality care for individuals experiencing suicidal behavior. Traditionally, safety efforts in this context have been centered on risk reduction. While minimizing risk is both necessary and reasonable, an overly narrow focus on security measures can paradoxically undermine patients' sense of safety and, over time, erode trust in the healthcare system. Previous research has highlighted the importance of involving patients and their loved ones in care planning and decision-making to reduce suicidality. However, person-centeredness, as a fundamental aspect of patient safety in suicide prevention, remains underexplored.

This thesis addresses this gap by examining healthcare utilization and exploring the potential for person-centeredness in healthcare for patients with suicidal behavior. It comprises four studies that approach patient safety and person-centeredness from multiple perspectives. The first two studies focus on healthcare utilization: **Study I** investigates reported adverse events, while **Study II** analyzes mental healthcare visits associated with varying levels of suicidality. **Studies III-IV** shift the focus to patient and personal network perspectives, offering qualitative insights of person-centered care during suicidal crises.

The findings reveal that suicidality is a fluctuating, long-term condition requiring a flexible healthcare response tailored to evolving needs (**I–IV**). **Study I** demonstrates that while traditional methods for investigating adverse events seek to pinpoint root causes, the contributing factors reported are often interconnected, reflecting systemic organizational challenges rather than isolated deficiencies. **Study II** expands on this by showing that patients with suicidality have distinct healthcare needs that differ from those of patients in mental healthcare without registered suicide attempts. **Studies III-IV** underscore that both patients and relatives see themselves as valuable contributors to care but rarely find opportunities for collaboration. Participants called for initiatives that balance long-term planning with proactive safety strategies. Such measures could enhance early detection of escalating suicidality while promoting self-care and collaborative involvement among patients and their relatives.

Overall, this thesis highlights the intersection of patient safety and person-centered care for individuals with suicidal behavior. By advocating for a multidimensional approach, it emphasizes the need for person-centeredness both in direct clinical interactions and in the broader design of healthcare systems to ensure safer, more responsive care for this vulnerable population.

Keywords: Lived experience, Mood disorders, Patient safety, Psychiatry, Self-injurious behavior, Health & safety, Organizational development, Quality in healthcare, Risk management, Suicide & Self-harm.

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SAMMANFATTNING PÅ SVENSKA

Traditionellt sett har patientsäkerhet inom det suicidpreventiva området varit mer eller mindre liktydigt med riskreduktion. Även om riskminimering är både nödvändigt och rimligt, kan ett alltför snävt fokus på säkerhetsåtgärder paradoxalt nog underminera patientens känsla av trygghet och, på lång sikt, urholka förtroendet för sjukvårdssystemet. Trots att tidigare forskning har belyst vikten av att involvera patienter och deras anhöriga i vårdplanering och beslutsfattande för att minska suicidalt beteende, finns det få studier som undersöker hur personcentrering skulle kunna appliceras i olika vårdkontexter.

Denna avhandling avser fylla detta kunskapsgap, och utforskar vårdutnyttjande och potential för personcentrering inom vård för patienter med suicidalt beteende. Avhandlingen består av fyra delstudier som undersöker patientsäkerhet och personcentrering ur flera perspektiv. De två första studierna fokuserar på användning av sjukvårdstjänster: **Studie I** kartlägger mönster i rapporterade avvikelser, medan **Studie II** analyserar psykiatriska sjukvårdsbesök kopplade till olika nivåer av suicidalt beteende. **Studie III och IV** ger kvalitativa insikter i egenerfarnas och anhörigas syn på betydelsen av personcentrering vid suicidala kriser.

Materialet baseras på händelseanalyser gällande brister i vården, vårddokumentation och intervjuer, både med personer med egen erfarenhet av suicidalt beteende och personer som står eller har stått nära någon med sådana besvär. Resultaten visar att suicidalt beteende är ett fluktuerande, långvarigt tillstånd som kräver flexibla vårdinsatser för att på ett hållbart vis svara mot individuella behov och preferenser (**I–IV**). **Studie I** visar att även om traditionella metoder för att undersöka negativa händelser syftar till att identifiera bidragande och bakomliggande faktorer, är de ofta sammanlänkade och speglar organisatoriska utmaningar på systemnivå snarare än isolerade brister. **Studie II** bygger vidare på **Studie I** och visar att patienter med suicidalt beteende har specifika vårdbehov som skiljer sig från behov som ses hos patienter utan sådant beteende.

Studie III och IV betonar att både patienter och anhöriga ser sig själva som värdefulla samarbetspartners i vårdprocessen, men att de sällan bjuds in att delta i planering och genomförande av vård. En möjlig förklaring är det dominerande fokuset på akut krishantering inom suicidpreventiv vård, vilket ofta leder till att patienter bedöms som antingen för friska för att få vård eller för sjuka för att delta i gemensamt beslutsfattande. Deltagarna i båda intervjustudierna efterlyste en anpassad vård som balanserar långsiktig planering med proaktiva säkerhetsstrategier. Sådana åtgärder skulle kunna förbättra upptäckten av tidiga tecken och senarelägga behovet av akuta insatser, samtidigt som de främjar egenvård och ett mer kollaborativt engagemang bland patienter och deras nära.

Sammanfattningsvis lyfter denna avhandling fram kopplingen mellan patientsäkerhet och personcentrerad vård för individer med suicidalt beteende. Genom att förespråka en multidimensionell ansats betonas behovet av personcentrering, inte bara i de direkta kliniska mötena utan även i utformningen av sjukvårdens infrastruktur, tjänster och kommunikationssystem för att stärka patientsäkerheten för denna sårbara målgrupp.

LIST OF PAPERS

This thesis is based on the following studies, referred to in the text by their Roman numerals.

I. Rex, M., Brezicka, T., Carlström, E., Waern, M., & Ali, L. (2022). Coexisting service-related factors preceding suicide: a network analysis. BMJ open, 12(4), e050953. doi:10.1136/bmjopen-2021-050953.

II. Rex M., Carlström, E., Brezicka, T., Waern, M., & Ali L. Mental healthcare utilization among persons with suicidal behavior - a case control study in a Swedish context. *Submitted.*

III. Rex, M., Waern, M., Carlström, E., Joneken, I., Tell, S., Brezicka, T., & Ali, L. Person-centered suicide prevention: Key elements from the perspective of people living with suicidality. *Submitted.*

IV. Rex M., Waern, M., Carlström, E., Joneken, I., Brezicka, T., & Ali L. From taxi drivers to co-pilots: Relatives discuss how to increase person-centeredness in suicide preventive care. *Resubmitted.*

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ABBREVIATIONS

ASDR	Age-standardized suicide rates
GPCC	Centre for Person-centred care, University of Gothenburg
IVO	Inspektionen för vård och omsorg, the Health and Social Care Inspectorate
NGO	Non-governmental organization, -s
NITHA	Nationellt IT-stöd för händelseanalyser, the National database for root cause analyses
OR	Odds ratio
PCC	Person-centered care
RCA	Root cause analysis, -es
SI	Suicidal ideation
STB	Suicidal thoughts and behaviors
SUD	Substance use disorder, -s
WHO	World health organization

DEFINITIONS IN SHORT

Co-creation of care	An integration of resources from healthcare providers, patients and their networks.[1] Co-creation of care is an essential component of person-centered care, where the patient and the healthcare team collaborate equally in developing the healthcare plan.
Lived experience	A term used in the field of suicidology to describe individuals who have engaged in non-fatal, self-injurious suicidal behavior.[2]
Person-centered care	An ethical approach in healthcare that emphasizes a *partnership* between the patient and the healthcare team. It recognizes the patient's lived experience with their condition alongside the healthcare team's professional, academic, and clinical expertise. In person-centered care, the patient is actively involved at all stages of the care process, with their *narrative* serving as the foundation and basis for planning and revising care activities, which are *documented* in a healthcare plan. The overarching goal of person-centered care is to enhance the patient's self-efficacy, resilience, and self-care abilities.[3]

Shared decision-making	A process where patients, and when applicable, their relatives, engage in open dialogue with the healthcare team to share information, understand each other's values and preferences about care, and collaboratively agree on a plan of action.[4] Person-centered care can be viewed as one of several approaches to shared decision-making.
Suicide	A fatal act undertaken and completed by the deceased, who initiated the act deliberately, with the expectation of death.[2, 5-7] A suicide attempt, by contrast, is a non-fatal suicidal act undertaken by a person, with the intent to die.[2, 5-7] Suicidal behaviors encompass activities involving thoughts and plans of ending one's life (i.e. suicidal ideation), combined with self-destructive acts that vary in intentionality and lethality.[6, 7] The distinction between suicidal behaviors and deliberate self-harm is diffuse, with some overlap between the terms.[6] While self-harm includes behaviors primarily intended for reasons other than dying, various methodological challenges complicate the classification boundaries between the two.[8] Additionally, self-harm is frequently observed in individuals who may later engage in suicidal behaviors, raising the question of when one behavior is replaced by another.[9]

PREFACE

"Suicide, death caused by self-directed injurious behavior with the intent to die."[7] The definition makes it sound so simple—a clearly delineated act, bounded by time and space, with explicit points of intervention for those seeking a solution: prevent death by either reducing the will to die or limiting the means to cause harm. This is, in itself, a worthy ambition, and for a long time, the theory has served as a model for reality.

As a nurse, I have come to view the possibility of life as a profound mystery, set against the backdrop of the universe's absurdity and randomness. The structure of cells and each organism's drive for homeostasis struck me as evidence that every living being is a reflection of cosmos. In each creature, an echo of infinity. Consequently, questions about how humans understand themselves and their place in the world became the ones that interested me most. Eventually, this led me to confront the question of death. What shape and meaning can we ascribe to something no one truly knows, yet which influences us from the moment we are born?

In my professional role, I have sought to understand how I can be of help to those who see life as an impossibility. For a long time, I believed that suicidality stemmed exclusively from illness and that the healthcare system's role was either to help the individual relinquish the desire to die or to restrict their means of acting on it. This perspective was challenged in 2016 when I began working as a patient safety manager, investigating adverse events related to suicide. While some cases aligned with my prior understanding of suicidality, many did not. This contrast has become increasingly evident throughout the development of this thesis. If my previous focus was on preventing people from seeking a solution in death, the question of how those same individuals perceive and relate to life has become equally important.

My hope is that the findings of this thesis will contribute to more people surviving their suicidal crises. Beyond that, I hope the results lead to long-term treatment, that is tailored to the various phases of the suicidal process, for all those who seek suicide preventive care. My final hope is that these studies will highlight the importance of sustainable and reliable healthcare systems—designed to address each patient's unique needs, both ethically and in terms of their potential to improve treatment outcomes.

INTRODUCTION

Millions of people struggle with thoughts of ending their lives.[6] This phenomenon is observed in high-, middle-, and low-income countries[10, 11], and despite increasing living standards and groundbreaking advancements in psychiatric care and treatment over the past 100 years, more than 700,000 individuals worldwide are still reported deceased by suicide each year[12]. Previous research has largely focused on identifying methods for screening and treating acute suicidal crises.[13] While numerous instruments have been developed, their utility remains primarily educational within the healthcare sector.[14]

Individuals seeking care for suicidal concerns are often treated based on assessed suicide risk. For those deemed to be at low risk, discharge and return to routine healthcare are typical strategies, whereas hospitalization and observation are employed for individuals identified as high-risk.[15, 16] However, suicide risk is challenging to assess[17], the prediction accuracy remains low[18], and the majority of suicides occur among individuals classified as having a medium or low risk[19]. This highlights a critical issue: suicide prevention has, in many cases, become synonymous with extensive security measures (including involuntary care and confinement), all while healthcare resources are scarce, necessitating prioritization among individuals with similar needs. The emphasis on risk reduction has resulted in an imbalance, with most suicide preventive interventions occurring late in the process, once the suicidal crisis is already in progress. This overlooks potential opportunities for earlier interventions that could help prevent suicidality from spiraling out of control.

In recent years, there has been increasing emphasis on the potential for incorporating person-centered care in suicide prevention pathways.[13] Previous research has highlighted a general lack of person-centeredness in mental healthcare, despite its recognized importance[20-30], and there is limited information on which elements are crucial when providing such care for suicidal patients. This thesis aims to fill this knowledge gap by exploring the relationship between person-centeredness and patient safety in the care of individuals with suicidal behavior. It outlines the deficiencies identified in care provided to individuals who have died by suicide, the care offered to individuals with varying degrees of suicidality, and explores how a person-centered approach could be applied within suicide preventive care. Building upon previous research on quality management and healthcare utilization among individuals with suicidal behavior, the hope is that the results will help shift the focus of care to an earlier stage, thereby creating a better alignment between needs and healthcare activities. Most importantly, it seeks to increase the potential for self-care and active involvement of patients and their relatives and, ultimately, reduce the risk of acute suicidal crises.

BACKGROUND

SUICIDOLOGY

The ontological and epistemological foundations of suicidology have shifted throughout history, and in this chapter, I aim to provide an overview of the field. I will begin by presenting the concepts that shaped perceptions of suicide during the development of the philosophical, sociopolitical, and cultural ideas in Europe, before transitioning to contemporary findings on suicidality.

A BRIEF HISTORICAL OVERVIEW OF ATTITUDES TOWARD SUICIDE IN EUROPE

Suicide, as a phenomenon, has been a part of Western culture since antiquity. Much of what has been preserved for posterity was first passed down orally before being recorded in writing, reflecting the societal views that were dominant at the time. This affects the quality of the sources.[31]

In ancient Greece, there were multiple perspectives on the causes and intentionality of suicide, leading to a diversity of opinions regarding the deceased's honor. There are numerous examples of notable individuals who chose to end their own lives, although suicide was in fact criminalized in several city-states (Athens, Sparta, Thebes).[31] The reasons varied, but over time, these acts came to underscore the ideals that these individuals lived for and became associated with. When Sappho leapt from the Leucadian cliff (if indeed she did)[32], or when Socrates chose to drink hemlock rather than live in exile[33], these actions are now seen as demonstrations of ideological conviction, rather than as irrational behavior, the result of illness, or a crime against the gods.

In ancient Rome, there were no religious or legal prohibitions against free men taking their own lives. On the contrary, suicide could be seen as an expression of personal freedom, or as a means to avoid dishonor, shameful punishment, or surrender to an enemy. For women, it was considered honorable to choose suicide over surviving the death of their husband or the violation of rape (as in the case of Lucretia's death). In Imperial Rome, Stoicism was widespread, and its principles likely influenced Emperor Marcus Aurelius when he argued that the manner of one's departure from this life was of little consequence. To him, suicide was comparable to exiting a smoke-filled room due to a lack of fresh air to breathe.[31]

During the Middle Ages, attitudes toward suicide were heavily shaped by the strict Christian prohibition against taking a life and the belief that those who died without receiving absolution would be judged with the full weight of their sins. If a person who had died by suicide was mistakenly buried in a cemetery, it would prompt a procedure requiring the entire churchyard to be reconsecrated after the body had been disinterred.[31] The dominant views on suicide persisted well into the 1800s and may still have relevance today.[5] Alongside religious beliefs, there was also a fear of the ability of those who had died by suicide to return as restless spirits, which often led to stricter handling of suicide cases in civil law compared to canon law.[31] At the same time, alternatives existed, at least for some. Among nobles, there was the option to participate in hunting, war, and crusades—activities that exposed them to danger and provided a socially acceptable path to death.[31]

HISTORICAL PERSPECTIVES ON MENTAL HEALTH AND SUICIDES IN SWEDEN

The expansion of mental institutions in Sweden occurred over a long period—Danviken Hospital, for example, was established as early as 1557 by Gustav Vasa. The understanding of mental conditions was based on the theory of the four humors, where the respective proportions of bodily fluids—blood, phlegm, yellow bile, and black bile—determined mood and personality. Examples of diagnoses were "feeble-minded, mad, insane, furious, and raging." There was no cure; the goal of treatment was to house patients in a way that minimized contact between them and the rest of society.[34]

In the late 18th and early 19th centuries, industrialization led to rapid population growth and increasing urbanization, which in turn heightened the demand for strengthened social order. Prisons, poorhouses, and mental healthcare facilities expanded. During the Enlightenment, the understanding of mental illness was reexamined. Instead of being viewed as a punishment from God, it came to be explained through theories of poor upbringing and unfavorable environmental influences. Treatments shifted from primarily restrictive measures to methods aimed at stimulating patients' senses to provoke a response. Alongside these approaches, order, cleanliness, fresh air, and employment were encouraged.[34]

With the 1858 Mental Health Care Act, mental illnesses were classified under somatic conditions, and psychiatry began to be recognized as a medical specialty. Asylum inmates became patients, maids became nurses, and helpers were replaced by attendants. Hospital records were introduced. The perception of the causes of illnesses also evolved, with heredity increasingly being regarded as the basis of psychiatric suffering. The professional use of herbal preparations became more common, despite limited effectiveness.[34] In the 20th century, new treatment methods were introduced—lobotomy, insulin therapy, and electroconvulsive therapy—but for many, none of these led to a sufficiently lasting improvement that would allow them to leave the mental institutions until the introduction of modern psychopharmacology in the 1950s.[34, 35]

Regarding suicides, Sweden has a longstanding tradition of investigating suicide cases. According to King Christoffer's law, enacted in 1442 and in effect until 1736, all suicides were deemed capital crimes and subjected to investigation.[36] Such cases were initially adjudicated by a judge and twelve lay members of the local district court. The sentence was directed at the deceased, with the body being burned by the executioner at a stake in the forest. However, it was customary for suicide cases to be reviewed by the Svea Court of Appeal, which had the authority to amend the sentence if it was determined that the individual had been "out of his/her mind" at the time of the suicide. In such instances, the body could be interred outside the churchyard. In many ways, the religious views of the Lutheran Church of Sweden had not diverged from Catholic practices, and suicide was still seen as a violation of one of God's commandments. In 1749, the statistical registration of suicides was taken over by Tabellverket, a precursor to Statistics Sweden.[37] As the influence of the church in society diminished and the control of the state increased, the perception of suicide shifted from being a religious concern to a medical and societal issue. In 1864, suicide was decriminalized under Swedish law.[38] Nevertheless, burial restrictions associated with cases of suicide persisted until 1908.[39]

Although the intent and legal status of the investigation have significantly changed, it is interesting to note that the fundamental principles of the procedure have been preserved. Whereas investigators in the medieval and early modern Swedish courts sought to clarify the circumstances surrounding suicides in order to administer justice for the deceased, contemporary investigations are initiated to evaluate the quality of healthcare services.[40]

THE ORGANIZATION OF MENTAL HEALTHCARE IN SWEDEN TODAY

In Sweden, healthcare responsibility is divided among national, regional, and local levels. The Parliament (Sveriges Riksdag) handles legislation, budget decisions, and allocates targeted grants to healthcare services. The Government sets political strategies, oversees the use of public funds, and assigns tasks to national agencies such as the National Board of Health and Welfare (Socialstyrelsen), the Public Health Agency (Folkhälsomyndigheten), and the Health and Social Care Inspectorate (Inspektionen för vård och omsorg). These agencies develop regulations, provide data and support to healthcare services, and monitor their performance. The Health and Social Care Inspectorate is specifically responsible for overseeing healthcare operations.[41] Patient quality is evaluated through various quality registers[42], complaint and incident reporting statistics, as well as the National Patient Survey[43], which assesses patients' experiences of healthcare.

The primary laws governing all healthcare provision are the Health and Medical Services Act[44] and the Patient Safety Act[45]. According to Chapter 3, Article 1 of the Health and Medical Services Act, the objective of healthcare is to promote good health and provide respectful care on equal terms. Healthcare services should be prioritized to ensure that individuals with the greatest needs are afforded priority access to care.[44] Each healthcare provider is required to plan, lead, and oversee their operations to promote high standards of patient safety. Adverse events—often related to suicide or self-harm in mental health settings—are investigated by qualified teams with expertise in the field. These teams are trained in methodologies such as root cause analysis to ensure a thorough examination. In cases of severe adverse events, a report must be submitted to the Health and Social Care Inspectorate.[45]

The regions manage the delivery of healthcare, from primary care to specialized services. This includes organizing care in hospitals, clinics, residential facilities, and patients' homes. Healthcare, offered by both public and private providers, is in many cases subsidized and primarily funded through regional taxes and grants. Responsibility for healthcare in residential care facilities is shared between the regions and municipalities. For example, physicians are typically employed by regional primary care centers, while nurses and care assistants are provided by the municipalities.[41]

With the exception of a few national units, healthcare in Sweden is decentralized and deregulated, allowing residents to choose among providers offering similar services to some extent. Parallel healthcare contacts across primary and secondary care boundaries are available, enabling simpler treatment interventions to be provided through primary care or home-based healthcare services. Although mental health issues at the primary care level are handled within primary care, the responsibility for more severe mental health conditions ultimately lies with specialized psychiatric services, particularly in larger urban areas. Currently, Sweden has seven university hospitals, each responsible for high-specialty care at the national level, aside from regular secondary care activities.[46]

Since 2018, Sweden's regions have implemented a joint system for evidence-based practice, aimed at developing national guidelines and increase dissemination of knowledge.[41, 43] With the establishment of national expert groups to develop evidence-based guidelines, secondary care has transitioned from a service delivery model primarily organized around geographical principles to one based on diagnosis. This shift has resulted in patients, in some cases, receiving care divided among multiple healthcare units within the same city.[47]

The growing integration of digital services and mobile technologies into daily life has significantly transformed various sectors, including healthcare.[48] Over the past decade, internet usage among Swedes aged 12 and older has consistently remained above 90%.[49] As of 2024, 95% of the population actively uses the internet.[50] In healthcare, digital advancements are primarily used for data collection, information sharing, and authentication. For instance, patients can access their medical records online, submit self-monitoring data, and communicate with healthcare providers through digital platforms. Some clinics also offer a variety of virtual reality sessions and online treatments, ranging from pre-recorded materials to real-time sessions with healthcare professionals.[51]

In January 2025, the Swedish National Strategy for Mental Health and Suicide Prevention was formally adopted for implementation over the period 2024–2034[52]. The strategy outlines four overarching objectives:

1. Improved mental health: enhance overall mental health across the population through health-promoting interventions at both individual and societal levels.
2. Fewer lives lost to suicide: reduce suicide rates and strengthen preventive efforts to ensure no individual reaches a point where suicide is seen as the only option.
3. Reduced disparities in mental health: address mental health inequalities among population groups, with tailored interventions to meet diverse needs.
4. Reduced negative consequences of psychiatric conditions: improve the well-being and functionality of individuals with psychiatric conditions, reduce stigma, and promote better physical health outcomes.

The objectives are supported by seven specific goals, each paired with prioritized actions to guide work in this area.[52]

HOW MANY?

Suicide is a global public health issue that affects people of all income levels. Every year, more than 700,000 people die by suicide. For every suicide, there are an estimated 20 suicide attempts.[53] In 2019, the global age-standardized suicide rate (ASDR) for both sexes was 9 per 100,000. In Sweden, the corresponding figure for men and women that year was 12.4 per 100,000.[12] The demographic structure plays a significant role. Currently, the suicide mortality is higher among men than women in every reported country.[54] Historically, however, women have experienced higher suicide rates, particularly in rural areas of East Asia and South Asia.[55-58]

In contrast to the declining trends observed in other regions between 2000 and 2019, the Americas experienced an upward trend.[59] Due to varying data coverage and availability worldwide, the undercount is difficult to estimate, and the actual incidence of both suicides and suicide attempts is likely higher than reported.[12] Based on available data, most suicides take place in the South-East Asia and Western Pacific regions.[59, 60] When comparing age-standardized suicide rates for both sexes and all ages from 2019, the highest figures—20 or more suicides per 100,000 inhabitants—were found in Lesotho (87.5), Guyana (40.9), Eswatini (40.5), Kiribati (30.6), Suriname (25.9), Zimbabwe (23.6), South Africa (23.5), Mozambique (23.2), the Central African Republic (23.0), the Russian Federation (21.6), the Republic of Korea (21.2), Botswana (20.2), and Lithuania (20.2).[54]

In Europe, suicide accounts for 1.4% of all deaths, with a significant proportion occurring among individuals aged 70 and older. The suicide rate is also notably high among those aged 45 to 59.[61] While suicide rates globally are highest among older adults, it remains one of the leading causes of death among young adults aged 15 to 34.[53, 62] Among children, adolescents, and young adults (aged 10–24 years), significant disparities in age-standardized suicide rates exist worldwide. Although most European countries, with the exception of the United Kingdom, have experienced a general decline in this age group, the opposite trend has been observed in the United States, Central and Latin America, and Australasia. Consistent with adult suicide rates, young males are disproportionately affected, with rates two to five times higher than those observed in young females.[63] Similarly, in Sweden, suicide rates (including both confirmed and undetermined intent) have shown a slight decline over the past 40 years across all age groups, except among individuals aged 15–24 years.[64] According to the most recent statistics, 1,617 Swedish individuals—1,132 men and boys and 485 women and girls—died by suicide in 2023.[64] The same year, an additional 7,383 individuals were hospitalized following a suicide attempt.[65]

While national suicide rates provide a general overview of a country's situation, they often mask significant disparities due to inequalities in data collection. A closer examination of different population groups within a single country reveals notable variations in suicide mortality. For instance, Denmark had an age-standardized suicide rate of 7.6 per 100,000 inhabitants in 2019[54], whereas a substantially higher ASDR of 80.4 was observed among inhabitants in the autonomous territory of Greenland[66].

It is important to note that there are great disparities in worldwide data collection, leading to lack of information.[67] In some countries (45 countries as of 2014), suicide is still regarded as a criminal act, which can affect both the tendency to seek help and the underreporting of self-harm cases.[62] More than 85% of all studies are performed in high-income countries (HICs), and most tend to emphasize statistical risk factors related to mental health issues.[62, 67] This focus overlooks the global context of suicide, as approximately 80% of all suicides occur in low- and middle-income countries (LMICs), with 42% of these deaths occurring in China and India.[62]

THEORETICAL MODELS ON SUICIDAL BEHAVIOR – WHY DO PEOPLE DIE BY SUICIDE?

Throughout modern history, several attempts have been made to explain the occurrence of suicide. Here, I will attempt to outline the main aspects of the most widely used theories on suicidal behavior.

GENETIC AND BIOMEDICAL FACTORS

The difficulty of verifying psychiatric diagnoses through biometric measures has made decisions about mental healthcare treatment strategies reliant on clinical observations. Modern diagnostic practices remain largely unchanged from those introduced by Emil Kraepelin in the late 19th century, which emphasize the systematic observation and documentation of patients' symptoms, along with, when applicable, those of their relatives. These procedures form the basis of the Diagnostic and Statistical Manual of Mental Disorders (DSM), the classification system of psychiatric diagnoses published by the American Psychiatric Association.[68]

It is widely recognized that brain function profoundly influences mental health; however, methods such as brain imaging and measurements of neurotransmitter levels in the blood or cerebrospinal fluid still offer only a rudimentary insight into the intricate complexities of the brain.[68, 69] Since genome-wide association studies (GWAS), which have the potential to link genetic variants to specific phenotypes (such as suicidality), are still in their early stages[70, 71], support for a genetic influence on suicidal behavior is primarily derived from studies of shared genetic factors. A comprehensive Swedish population study examining familial clustering of suicides revealed increased risk levels proportional to genetic relatedness. The risk was higher among full siblings and monozygotic twins compared to maternal half-siblings and dizygotic twins, despite similar environmental exposure. Similarly, biological cousins were at higher risk compared to controls.[72] The findings also suggest that shared environmental factors contribute to the risk of suicidal behavior. Siblings had a higher risk than offsprings, and maternal half-siblings (who presumably shared childhood household environments more than paternal half-siblings) had a higher risk than paternal half-siblings.[72] Similarly, adoption studies indicate higher suicide mortality among full siblings[73], while downplaying the significance of imitation as a mediating factor[74].

When comparing biomarkers among individuals who have died by suicide with controls[75] and examining in vivo brain imaging[76] as well as post-mortem characteristics from suicides[77], dysregulation in the Hypothalamic-Pituitary-Adrenal axis (the stress response system) is highlighted as a potential underlying factor, along with abnormalities in the serotonergic, noradrenergic, glutamatergic systems and inflammatory processes.[75, 77-79] However, further research is needed before these theories can serve diagnostic purposes or guide clinicians in therapeutic decisions.[75, 77] Preclinical studies, testing responses to stress, suggest that anxiolytic drugs may reduce natural fears of open spaces and heights, which are used to simulate anxiety in rodents. Similarly, models designed to replicate hopelessness and depression show that unmedicated animals tend to stop attempting to escape danger or discomfort more quickly than those treated with antidepressants. Likewise, rodents trained to self-administer highly addictive substances often show little interest in other activities. These discoveries have contributed to the mapping of the brain's biochemical structure, albeit at a relatively basic level.

Along the same lines, the use of psychotropic substances does not fully elucidate the complexities of brain function. Many scientific breakthroughs in this field have been serendipitous—some medications appear to be effective, yet the exact mechanisms behind their efficacy remain unclear. Furthermore, substances, including pharmaceuticals, alcohol, and illegal drugs, can have varying effects depending on the individual to whom they are administered.[68]

Studies analyzing prescription rates of selective serotonin reuptake inhibitors (SSRIs) and suicidality have shown an inverse correlation.[80] However, the association between the replacement of tricyclic antidepressants with the less toxic SSRIs in the 1990s, and the subsequent decline in suicide rates has been challenged.[81] One reason is that the decline began prior to the rise in SSRI prescription rates.[82] Moreover, antidepressants are only partially effective[83]; for some individuals, side effects may outweigh the benefits of treatment, and there can be a discrepancy between prescribed and actual medication intake.[69] Additionally, the causal link between depression and suicidality has been debated, with critics pointing out that other contributing factors to suicidality are often overlooked, and not all individuals with depression experience suicidal ideation.[83, 84]

SOCIOLOGICAL AND PSYCHOLOGICAL MODELS

In 1897, Émile Durkheim published *Le Suicide*, which later became a central work in sociology. He identified the individual's relationship with their environment as a key factor in understanding why people take their own lives. This relationship was conceptualized as four quadrants of a diagram, with societal integration-disintegration placed on one axis, and the degree of regulation on the other. Extremes in relation to these scales were seen as potential triggering factors: individuals who were either overly integrated into society (altruistic suicide) or detached from social ties (egoistic suicide), as well as those who experienced the dissolution of accepted rules and laws (anomic suicide) or submission to overly strict discipline (fatalistic suicide), were considered to be at risk.[85] Although his theories are rarely applied in clinical practice today, some of his ideas can be seen as precursors to contemporary views on suicide as a response to overwhelming social pressures and a lack of belonging.[86]

The concept of suicidology as a distinct field of research is relatively new. It was introduced by Edwin Shneidman in the 1980s, who argued that suicide and its causes must be understood from an interdisciplinary perspective[69] According to Shneidman, the underlying causes of suicide are rooted in existential and contextual factors. Thus, the act of suicide can be seen as an individual's response to their perceived situation.[69] Many psychological models of the psychogenesis of suicide build upon Shneidman’s theories and Aaron T. Beck’s concept of hopelessness[87], suggesting that intense psychological pain (psychache)[88], combined with a perceived inability to find solutions during periods of despair, can trigger suicidal tendencies. The interpersonal theory of suicide, for instance, emphasizes perceived burdensomeness, thwarted belongingness, and capability for suicide as a particularly dangerous triad. The interplay of experienced hopelessness and a diminished fear of death, often due to exposure to traumatic events or serious illness, may create an opportunity for suicidal thoughts to emerge as a perceived solution when all other options seem beyond reach.[89-91] As a further development of this, the Integrated Motivational-Volitional Model of Suicidal Behavior examines the prerequisites for suicide attempts: the premotivational, motivational, and volitional phases of the suicidal process.[92] Suicide has also been discussed as a product of emotional dysregulation[93] or suboptimal decision-making paired with elevated impulsivity[94], as an escape from perceived discrepancies between a desired and actual self[95, 96], as an fundamental existential challenge in which the suicidal person is struggling to find meaning[97, 98], and as a mental accident that occurs when suicidal impulses become too intense to withstand[84, 99].

THE SUICIDAL PROCESS

From the perspective of the stress-vulnerability model, multiple factors interact in the development of suicidal ideation. Underlying vulnerabilities—such as biological predispositions or negative past experiences—create a foundation for risk. During periods of heightened stress, individuals with significant vulnerability may respond with destructive thoughts and behaviors. However, these vulnerabilities are counterbalanced by protective factors—resources and strategies that enable individuals to manage stress in adaptive ways. A dialectical relationship often exists between high vulnerability and maladaptive stress responses, creating a sense of being trapped in a vicious cycle that feels impossible to escape. The suicidal process is highly heterogenous, varying significantly depending on the individual.[71] For some, it may involve isolated incidents linked to specific triggers; for others, it is a complex, prolonged progression, making it difficult to pinpoint the factors leading up to an attempt. In certain cases, the picture is further complicated by cognitive impairment—for example, due to intoxication—which may prevent individuals from recalling parts of the experience.[100-103]

In those who attempt suicide, a prodromal phase is frequently observed, marked by noticeable changes in thoughts or behaviors.[71] However, feelings of despair, death ideation, and suicidal thoughts are also common in other conditions and cannot reliably be used as predictors of an imminent suicide attempt.[104] Many seek help prior to the attempt[105, 106], although not everyone seeks help for suicidal ideation. Periods of intense suicidality are often marked by frequent impulses to self-harm, accompanied by profound feelings of self-hatred, shame, and a belief that no other solutions exist .[107] A lack of loss aversion may manifest as ineffective decision-making, a trait that aligns with other cognitive patterns such as all-or-nothing thinking or a heightened willingness to take risks.[108] The risk of acting on suicidal thoughts is usually time-limited[109] and heavily influenced by context; fatal actions require both the volition and the opportunity to carry them out. Shifts between maintaining and losing control over one's situation can occur abruptly, sometimes within very short timeframes.[110] Assessing suicide risk under such circumstances is particularly challenging. Evaluators may underestimate risk factors that are not evident during the assessment or overestimate the protective factors presented.[111] Moreover, suicides are, after all, rare events, while the symptoms associated with suicidal ideation are common, making it difficult to draw conclusions from occurrences.[84] This complexity underscores the difficulty of accurately predicting and managing suicide risk in clinical settings.

STATISTICAL SUICIDE RISK

For healthcare professionals, suicide risk assessment is a prioritized but challenging task. Prioritized—because timely and appropriate interventions are crucial for survival. Challenging—because determining the right intervention at the right moment is inherently difficult.[17] In the realities of clinical practice, where resources are limited, suicide prevention often translates into acute care—sometimes administered under compulsory care legislation.[112] Following the same logic as in other emergency medical settings, prioritization focuses on identifying who is perceived to be at the greatest immediate risk to life and health.[113] The absence of reliable tests to assess this risk[14, 114, 115] makes it difficult to translate knowledge based on aggregated suicide statistics into decisions regarding individual patients. At the same time, checklists can offer clinical guidance to professionals, thereby holding pedagogical value.[14]

So, which groups stand out as being overrepresented in suicide statistics? Numerous studies have demonstrated an association between prior suicide attempts and subsequent suicide attempts.[116-120] The risk is most accentuated in the initial years following the index attempt[120, 121], although the risk of exacerbations of latent suicidality remains even after many years[122].

As previously noted, suicide attempts are more commonly observed among women and younger individuals, whereas suicide deaths are more prevalent among men and older individuals.[12, 62, 123] While the causal relationships remain incompletely understood, several factors have been suggested to influence the gender differences. These include disparities in reduced help-seeking behavior among men[124-126], shaped by attitudes toward gender roles[127, 128], a lower propensity to share problems[129] and reduced health literacy[130]. Additionally, men in general are more aggressive[131, 132] and are more likely to employ more lethal suicide methods compared to women[133-135]. Importantly, the higher suicide mortality rate among men should not be interpreted as an indication that women do *not* experience suicidal ideation to the same extent as men. Female suicidality has often been theorized as impulsive and manipulative, attributed to trivial relationship issues and – by some, a perceived weaker mental constitution[136] However, research suggests that there is an association between high female suicide rates and societies characterized by substantial socio-economic inequalities.[136]

A contributor to the rising suicide mortality numbers among older adults is the increasing average age of the population. Within this demographic, factors such as heightened loneliness, declining physical health, and an increased risk of losing friends and partners of the same age are frequently cited as influences on the suicidal process. Additionally, adverse experiences earlier in life, such as trauma or exposure to discrimination, may persist into old age. Conversely, certain protective factors, such as improved coping skills and adjusted expectations of life, may also emerge, potentially mitigating these risks.[137]

Major mental disorders are associated with an increased all-cause mortality risk, resulting in a life expectancy 10–20 years shorter than that of the general population. This includes a significantly elevated risk of suicide, with rates more than 10 times higher compared to the general population, for people with bipolar disorder, borderline personality disorder, depression, opioid use and schizophrenia. The same risk is seen among women with anorexia nervosa and alcohol use disorder.[138] Substance use in general is a well-documented risk factor for suicide in both women and men.[139-141] A Swedish study observed a 13% increase in suicide risk for every 1-liter increase in per capita alcohol consumption.[142] Substance use disorder contributes to suicide risk through multiple mechanisms. In the short term, substance use – typically binge drinking, can exacerbate dysphoria, aggression, and impulsivity. Over time, chronic substance use induces alterations in the neurochemical structure, heightening sensitivity to stress and intensifying depressive symptoms. At a societal level, individuals with chronic substance use disorders often face significant challenges, including social rejection, difficulty maintaining employment, and barriers to participating in family life, all of which compound feelings of failure and isolation.[143]

In addition to psychiatric disorders, there is an association between somatic conditions and suicide mortality.[144-146] Individuals diagnosed with cancer are twice as likely to die by suicide compared to the general population, with the risk being particularly elevated during the first year following diagnosis and for rapidly progressing cancer types.[147] Retrospective analyses of the healthcare and medications accessed by individuals who died by suicide indicate that many sought medical care, though not always for issues directly related to suicidality.[106] Common challenges identified include anxiety[148], sleep disorders[148-153], and chronic pain[154], highlighting the complexity of their healthcare needs.

Further upstream are determinants rooted in the relationship between the individual and their environment. These factors include interpersonal relationships within the family, at school, or in the workplace, as well as those that can be traced to more latent societal structures such as socioeconomic status, discrimination, exposure to violence, trauma, and exile.[67]

What complicates the implementation of timely interventions is that the aforementioned factors are prevalent and shared by many who would never contemplate suicide. The risk is based on calculations derived from very few cases, relative to the majority of non-suicidal cases within the same cohort.[155] A risk based assessment, made out of caution, could risk undermining the therapeutic alliance.[17] Given this delicate scenario, which of the factors mentioned above should be considered to have the greatest impact in the individual case? What interventions should be implemented, and when?

PREVENTIVE HEALTHCARE

In his influential work Rose's Strategy of Preventive Medicine, epidemiologist Geoffrey Rose stated: "The primary determinants of disease are mainly economic and social, and therefore its remedies must also be economic and social. Medicine and politics cannot and should not be kept apart." While medicine can provide adequate answers to some of our health problems, the determinants of incidence rest on non-medical grounds.[156] This observation appears to be particularly relevant when considering the field of suicide prevention and has recently been highlighted by Pirkis and colleagues (2024) in a Lancet Public Health series paper on suicide prevention.[67]

One might ask: why invest in efforts to prevent rare events like suicides? Furthermore, should healthcare interventions be targeted at the relatively small group identified as high risk, or the broader population with lower risk, to be most effective? From a purely economic perspective, few interventions provide a net financial benefit, as the costs of detection and treatment often surpass the potential productivity losses, particularly when considering the extended life expectancy resulting from improved health. However, economic evaluations are an insufficient measure in this context. While preventive policies may indeed yield economic gains by enhancing productivity during working years and reducing dependency in retirement, the primary justification for suicide prevention must rest on humanitarian grounds. To quote Rose: “It is better to be healthy than ill or dead. That is the beginning and the end of the only real argument for preventive medicine”.[157]

What characterizes effective prevention? If we compare living to driving a car, we can observe that most people reach their destination unharmed. Despite this and acknowledging that driving behaviors and vehicle types carry varying risks, it is undisputed that regulating speed, license requirements, and seatbelt use benefits all individuals, regardless of their risk level, without being overly invasive. In healthcare settings, however, the heterogeneity and risk diffusion within a population means that some recommendations, such as smoking cessation, may seem unfair: smokers are pushed to make lifestyle changes, even though not all will develop smoking-related diseases if they continue smoking. At the same time, some people will develop the same diseases despite never having smoked.[158] This leads to the so-called prevention paradox: interventions that are valuable at a population level offer limited benefit to each individual. This is evident to anyone who has worked with or attempted lifestyle interventions. For those who do not feel an immediate threat from a specific disease, it is difficult to maintain the motivation to eat healthily, reduce alcohol consumption, exercise, and maintain good sleep habits. The reverse is also true: those who are informed they are at high risk for conditions related to, for example, high blood pressure often feel a strong motivation to improve their odds.[158]

From a population perspective, what has become known as Rose’s theorem applies: most cases will be found not among the small group of identified high-risk individuals but rather among the larger group of low- and medium-risk individuals. This means that a strategy focused solely on treating "high-risk individuals" will overlook most cases, as this approach only smooths out the outer right side of the bell-shaped curve.[158-160]

SUICIDE PREVENTIVE MEASURES ON UNIVERSAL, SELECTIVE AND INDICATED LEVELS

There are several paradoxes in suicide prevention, including those linked to age and gender, which have already been discussed. Among people who have died by suicide, previous suicide attempts are common.[161] At the same time, most people who attempt suicide, do not die by suicide.[162] Moreover, most suicide decedents have been assessed as having a low to moderate risk in the period leading up to their death.[163]

Is the assumption underlying Rose's theorem valid and applicable in suicide prevention? In this specific context, the risk is not evenly distributed in the population. While certain strategies are suitable for universal implementation, this is not the case for all preventive measures. To capture the benefits of population-based strategies and simultaneously reach at-risk groups, many countries adopt a stratified approach dividing suicide prevention into universal measures (population level), selective measures (group level), and indicated measures (individual level).[10, 67, 164, 165] Prevention can also be categorized into primary, secondary, and tertiary activities. Primary prevention aims to prevent suicidal behavior before it occurs, secondary prevention focuses on early identification and intervention to prevent escalation, and tertiary prevention seeks to reduce illness progression and alleviate suffering once symptoms have manifested.[166]

Substitution from coal-based gas to non-toxic North Sea gas in households, the introduction of catalytic converters in cars and safety barriers at high bridges are examples of universal preventive measures to restrict the means of suicide. Methods available to a given population—e.g. firearms in the USA—are not only more likely to be used but are also more widely regarded as acceptable means of suicide.[167] Reviewing suicide methods and locations reveals that availability plays a crucial role: pesticide poisoning is common in Asian and Latin American countries, where agriculture is widespread, whereas jumping from high places accounts for many fatal suicides in metropolitan areas[160], underscoring the need to tailor means restrictions to maximize their effectiveness. Studies show that people who retain access to the method they used in their initial attempt often use the same method in subsequent attempts.[168] There is no evidence supporting the popular belief that people will substitute their preferred method of suicide if it becomes inaccessible.[160, 169-171] Instead, given the brief period when suicidal behavior peaks—often less than 10 minutes— many individuals who are interrupted tend to postpone the attempt (with some never attempting it at all) or choose a less lethal method.[167, 169, 172] In other words, effective preventive measures buy the patient time to think twice and reconsider their options.[173]

Although rarely used on its own, restricting access to alcohol has led to a decrease in suicide rates[174-177], likely due to its complex moderating effects: drinking can increase impulsivity[178], elevate pain tolerance[179] numb emotions, and impair problem-solving skills[180]. Alcohol can also potentiate the effects of other substances when used in combination[181], increasing the risk of both intentional and accidental overdoses[182].

This brings us to the selective level of preventive measures, where optimized treatment of underlying conditions serves as an example of a selective approach.[67, 164, 183] As noted earlier, mental health conditions have been reported to account for 90% of cases examined in post-mortem studies from high-income countries[184], making the treatment of these conditions a central focus of prevention[80]. School-based programs, responsible media coverage and targeted information campaigns are other examples of preventive measures aimed at specific groups.[185-189] Modifying the formulation of medications and restricting the prescription of drugs that could be used for intentional overdose are measures aimed at reducing the risk for individuals undergoing psychopharmacological treatment.[172] Offering safety planning, brief interventions, and therapy for those with suicidal ideation, as well as aftercare for individuals following a suicide attempt, exemplifies an indicated measure.[67, 164, 183]

Many measures, such as restricting access to weapons, alcohol and gambling, can be considered simultaneously universal, selective and indicated, depending on their mode of application.[172, 183] Similarly, certain universal measures can have a particular impact within specific subpopulations—one example is the decline in suicides by pesticide among young people and women in China following the implementation of a ban on such substances.[190]

A SHIFT FROM RISK DETECTION TOWARD A LONG-TERM MANAGEMENT OF SUICIDALITY

Suicide preventive care has so far been driven largely by the urge to develop diagnostic tools that can differentiate among patients with varying levels of suicidal ideation and identify and allocate resources to those at the highest risk of dying by suicide.[13, 67] Findings from psychological autopsies conducted predominantly in high-income countries have emphasized the significance of proximal risk factors associated with mental health issues, while placing less focus on the impact of more distal factors, such as long-term living conditions.[62] As aggregated data indicates that certain groups are overrepresented in suicide-related mortality statistics, these findings are frequently emphasized in discussions of risk factors.[13] However, aside from repeated suicidal behaviors following a previous suicide attempt, statistical risk factors offer limited utility at the individual level.[62, 191] The effect of the same risk factor varies among individuals depending on other, less visible, factors.[62] Moreover, as demonstrated by Belsher and colleagues in a systematic review of 17 studies across five countries, which evaluated 64 unique suicide prediction models and included over 14 million participants, the current lack of accurate algorithms results in a situation where the predictive capacity for future events is nearly zero.[192] Even in persons with mood disorders—the most common diagnoses in those who die by or attempt suicide[193]—predicting future suicidal behavior remains challenging.[194] Additionally, suicidal thoughts vary by context and time, making risk assessments quickly outdated.[172]

Currently, suicide risk prediction models are valuable for identifying the benefits of interventions at the group level. They have highlighted the importance of follow-up interventions for individuals who have survived suicide attempts, the necessity of screening vulnerable populations, and the need for supportive measures for family members. However, while advancements have been made[195], these models remain too imprecise to be reliably applied to individual cases.

The difficulties in identifying suicide risk through statistical risk factors have prompted a shift in parts of suicide prevention research, now focusing more on assessing the patient's therapeutic needs from a multidimensional perspective, instead of the risk of future suicide. Tools to enhance self-care management of suicidal behavior—such as safety plans[196]—have gained increased focus, serving as a complement to acute interventions aimed at reducing harm or addressing injuries related to suicide attempts. The core aim of assessing therapeutic needs is to reduce contributing factors and, consequently, lower suicide rates at the individual level.[172] Suicide is increasingly seen as a public health issue, with mental illness being one of many contributing factors, rather than the sole cause.[67] In line with this understanding, greater attention is being given to enhancing the quality of life for individuals with suicidal behavior, including strategies for fostering self-care and identifying how relatives can play a supportive role in care.

PATIENT SAFETY AND ITS SIGNIFICANCE IN NURSING SCIENCE

Healthcare quality is a multifaceted concept, evolving from developments in the patient safety field since the late 20th century.[197] The post-World War II mindset, which viewed medical adverse events as rare and inevitable, was challenged.[198] Unintended negative outcomes were found to surpass previous estimates, with causes often rooted in a combination of human, technological, and organizational factors (HTO factors). Healthcare was compared to other high-risk industries, such as aviation and power plant operations.[199] The term "medical error" was replaced by the concept of "patient safety" to better reflect the complexity of the issue and the strategies for mitigating harm.[198]

According to the World Health Organization (WHO), patient safety is defined as "a framework of organized activities that create cultures, processes, procedures, behaviors, technologies, and environments in healthcare that consistently and sustainably lower risks, reduce the occurrence of avoidable harm, make errors less likely, and mitigate the impact of harm when it does occur".[198] Both the Institute of Medicine (IoM) and WHO emphasize that healthcare must adhere to the principles of being safe, effective, timely, efficient, equitable, and user-centered.[197]

In 2021, the World Health Organization introduced seven core values to enhance patient safety in healthcare implementation. These principles emphasize the importance of actively involving patients and their families as partners to ensure safe care. They also highlight the need for collaboration across different stakeholders to achieve meaningful outcomes. A critical aspect of this approach is the systematic analysis and sharing of data to support continuous learning. Furthermore, translating research findings into practical, measurable improvements is essential for driving progress. Policies and interventions should be tailored to the specific characteristics of each healthcare setting, ensuring that safety measures are both relevant and effective. By integrating both scientific expertise and patient experiences, healthcare systems can develop more comprehensive strategies to enhance safety. Lastly, fostering a strong culture of safety should be a fundamental consideration in both the design and delivery of healthcare services.[198]

At an overall level, patient safety research involves both studying methods to evaluate clinical outcomes and strengthening the systematic conditions to deliver high-quality care. The goals of patient safety management are diverse, with reducing adverse events and achieving better outcomes serving as common objectives. This is often operationalized through systematic monitoring of undesirable events and fostering a safety culture that encourages clinicians to make the right decisions at the right time. However, while the implementation of policies and guidelines is a necessary component in promoting safety behavior, it can never fully prevent systemic failures. Although clinical guidelines constitutes the backbone of the organizational structure, the full implementation often fail due to a multitude of influencing factors.[200] These factors are often embedded within the operational culture, where values such as human relations play a significant role.[201, 202]

The complex and ever-changing nature of healthcare systems creates a hypothetical scenario with infinitely many possible combinations of actions. When considering that every action can vary in terms of precision and timing, it becomes clear that predicting every potential situation in a routine is impossible. Such premises demand a high level of adaptability.[203, 204] Over the past 25 years, the discussion surrounding patient safety has shifted from viewing the healthcare system as a provider of a product to understanding it as a process, with healthcare providers, patients, and their families and friends acting as co-producers.[205] Two perspectives on patient safety coexist:

one emphasizes the reduction of adverse events, while the other focuses on strengthening systematic resilience. There is a recognition that the same system that produces positive outcomes also creates inherent risks. Each situation presents a unique combination of factors that cannot be fully controlled. While even the most advanced humanoid robots rely on predictable schemes to make decisions, humans have the ability to override algorithms and routines when they believe it will lead to a better outcome.[203, 204]

These perspectives are referred to as *Safety I* and *Safety II*. *Safety I* aims to reduce the frequency and severity of future adverse events by analyzing the causes of past incidents. To enhance safety, errors are prevented through the improvement and implementation of routines.[206] *Safety II* complements this approach by focusing on learning from situations where positive outcomes were achieved. While clearly hazardous situations, such as poorly labeled intravenous medication bottles and ampules, should be avoided, *Safety II* does not rely solely on routines to prevent systemic instability. Instead, it emphasizes the importance of allowing individuals to act according to their competence, thus preventing unforeseen harmful events.[203, 204, 206]

The high cost of low-quality healthcare is well documented; an estimated 15 percent of all hospital costs in OECD countries stem from preventable adverse events. This cost arises not only from failures to provide timely and adequate interventions but also from the overuse of actions that yield little or no benefit, the neglect of patients' values and goals, and the waste of resources—including equipment, time, and expertise.[207]

Among the six core competencies outlined by the Swedish Nursing Association—person-centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics[208]—patient safety can be viewed as a fundamental component of each of these areas. Fostering a culture of safety involves not only developing strategies for more effective resource utilization but also enhancing positive outcomes and reducing adverse events within healthcare systems. Patient safety can be evaluated from multiple dimensions as a product of strategic decision-making and clinical performance, ranging from micro to macro levels. Therefore, patient safety is as integral to nursing as nursing is to patient safety.[209]

The outcomes of healthcare interventions and the level of patient safety can be understood as the alignment between stakeholders' perceptions of the issue at hand and their expectations of care delivery. When there is a lack of consensus, there is a risk of inefficient utilization of available resources. Patients often find themselves in a disadvantaged position, which may lead to their reduction to a mere collection of signs and symptoms, with healthcare activities primarily centered on medical expertise.[210] However, by integrating the insights and self-care capacities of patients and their families, a greater alignment between needs and interventions can be achieved, thereby optimizing resource allocation within the healthcare system. In this way, person-centered care can be seen as a crucial prerequisite for ensuring high patient safety in healthcare.[211]

PERSON-CENTERED CARE

What does it mean to be a person? When does someone become a person, and can that process stop and reverse? Are the unique aspects of personhood innate, or are they potentialities of something yet to come? Is personhood constituted by our choices and actions, or is it determined by context? What is our capacity for action under the limits of time and space?

Person-centered care has evolved from a philosophical standpoint, drawing on theories that position the dynamics between experienced reality and narrative as central to personhood.[3, 212-214] The concept of person-centered care has its origins in classical humanistic philosophical works, spanning from Aristotelian ethics, through Kant, Kierkegaard, Levinas, Løgstrup, and Buber to Carl Rogers' notes on personhood. Historically, the value and essence of personhood has been debated as either Cartesian—inherently self-evident and perhaps possessing a teleological inner, inviolable dignity (Kant) —or as a potential for action (Rogers), defined by the surrounding otherness (Levinas) or by the ethical demands posed by human interactions (Løgstrup).[215, 216]

In person-centered care, the effectiveness of care efforts depends on how well they are tailored to the unique living conditions of the patient. Drawing on the quote often attributed to Hippocrates— "It is more important to know what sort of person has a disease than to know what sort of disease a person has"[217]—person-centered care emphasizes the importance of understanding the person with the diagnosis. This approach focuses on leveraging healthcare to strengthen the patient's resources and capabilities, empowering them to manage the challenges of everyday life more effectively.[3, 212, 218-222]

The theoretical foundation of person-centered care used in this thesis is developed by the Centre for Person-Centred Care at the University of Gothenburg (GPCC). It encompasses three cornerstones: a) utilizing the patient narrative as a reference point, b) establishing a partnership, and c) continuously evaluating a documented healthcare plan.[3, 223, 224] The foundation for partnership is the recognition and respect for all stakeholders involved. The roles among stakeholders are discussed prior to documenting a co-created healthcare plan. This plan should reflect not only the common characteristics that unite individuals sharing the same diagnosis but also the unique aspects of each individual, incorporating their views on health and recovery.[219, 225] The documented healthcare plan is viewed as an iterative roadmap designed to generate increased engagement and yield greater value over time.[226]

PAUL RICŒUR'S PERSON PHILOSOPHY – A METHOD THROUGH GRADUAL APPROXIMATION

To Paul Ricœur, human identity is shaped by the dialectical interplay between unchanging sameness (*idem*) and ever-evolving selfhood (*ipse*). While certain characteristics remain constant throughout life, our perception of ourselves transforms over time.[227] Negotiating Descartes' self-proclaimed cogito and Nietzsche's synthesis of constantly shifting opposites, Ricœur proposes a hermeneutical approach where the self is wounded (*cogito blessé*) —incapacitated in isolation, and where true meaning can only be found in dialogue with others.[228] According to Paul Ricœur, communication is the key to understanding the self. As such, the self is not given a priori but is simultaneously remodeled and constituted by the mutual understanding and reinterpretation that takes place during communication.[228] The narrative—and how we interpret objective events and reinterpret their meaning in light of our accumulated knowledge—is the means by which we define ourselves within our context.[227] Here, Ricœur's philosophy approaches Freud's psychoanalysis, in which language and behavior are imperfect manifestations of underlying matters of dread and desire.[229] Although Ricœur affirms Hegel's principle of reality as a synthesis of experiences—however contradictory and bound in time they may be—he denounces absolute knowledge about the subject.[228]

At their core, all human beings are capable of speech, action, narrative, and taking responsibility.[227] Narration is a powerful tool that can be directed toward defining both oneself or others, but so is our ability to act ethically.[227, 230] All humans are vulnerable, but not equally so at all times. The healthcare encounter reflects an asymmetrical relationship, where the patient's health is at risk, placing them in a position of dependence on the bureaucratic authority and expertise of the healthcare staff. The staff, in turn, often possess a familiarity with the environment, system, and work methods. It is from this position of triple advantage that the healthcare professionals hold the power to set the agenda.[210] To bridge this inequality, Ricœur emphasizes the importance of what he calls *Just Institutions*, where the definition of "just" is divided into two directions: one that aims at the good and its extended meanings, and another that focuses on justice. *Just institutions*, therefore, refer to systems that encompass both of these meanings. Person-centered care can thus be distilled into three components: 1) aiming at the good life, 2) with and for others, and 3) within just institutions.[227, 231]

AMARTYA SEN AND MARTHA NUSSBAUM – ON CAPABILITY

Grounded in Aristotelian ethics, the connection between *ergon* (function) and *eudaimonia* (the good life)[216, 232, 233], are best understood through the underlying ideas of capability and functionality. Capability refers to a person's real opportunities to achieve the life they value. It encompasses the freedom to choose among various ways of living and is therefore tied to an individual's personal freedoms and resources, as well as the social, economic, and cultural contexts in which they exist. Functionality, by contrast, describes what a person actually does or becomes—essentially, the realized outcomes of their capabilities. For example, having access to healthcare is a capability, while being in good health represents functionality. In many ways, these two concepts are interdependent and can be seen as enabling each other. Thus, the so called *functionings* may also be viewed as potential capabilities; to make meaningful choices among different freedoms, a basic level of freedom must first be secured.[234, 235]

Two key contributors to capability theory are Amartya Sen and Martha Nussbaum, who both engage with questions of justice and health equity, but from slightly different perspectives. Sen focuses on how broader economic systems shape living conditions[236], while Nussbaum highlights the specific structural opportunities available to individuals within a society[233]. The resources available to an individual translate into varying capabilities depending on a range of conversion factors, which can be personal (e.g., health, skills), societal (e.g., norms, laws), or environmental (e.g., geography, infrastructure). For instance, the accessibility of Swedish healthcare may be greater for individuals who are already familiar with the system, possess strong health literacy, do not experience stigma when seeking care, live near healthcare facilities, own a phone, and are proficient in using digital health tools, compared to others. Globally, disparities in health equity underscore even greater differences in access to resources and their transformation into value for the good life.[235]

EMMANUEL LEVINAS – AN ETHICAL OBLIGATION

For Emmanuel Levinas, philosophy is primarily an ethics—a way to articulate the relationship between the self and the Other. Rather than seeking *sameness* as a means of assimilation and control, which Levinas views as yet another form of categorizing and dominating others, he emphasizes the ethical imperative of recognizing the Other as representing what can never be fully understood. Simply put, the Other is not there for my desire or development.[237]

Beyond shaping the self, the very foundation of interhuman relationships is established in the encounter with the Absolute Other. Instead of building empathy based on criteria that stem from the self—such as similarity or sympathy—*the face of the Other* is an appeal to our own humanity. This encounter demands a response, without the expectation of anything in return.[237] The Other's perspective on the world remains forever inaccessible and uncontrollable for me, meaning that *the Other's alterity* cannot be reduced to a representation, a quantitative enumeration of differences, or a set of minimal common denominators.[238] *The infinity of the Other* belongs solely to him or her, and our only means of approaching the reality of the Other is to listen to his or her narrative. However, this does not imply that the Other possesses a clear understanding of their own past and current situation; rather, it suggests that they have greater opportunities to continue exploring these aspects than we do.[237]

In the context of person-centered care, we can apply Levinas' thinking as a recognition of the Other's unassailable right to self-knowledge and an acknowledgment of the limits of our encounters. No matter how we attempt to embrace *the infinity of the Other*, it eludes our efforts to reshape it into a finite reality.

EDWARD SAID – IDENTIFICATION BY EXOTIFICATION

Our stance toward the Other can have various foundations and serve different purposes. As Europe underwent technological and military development and discovered what it perceived as "new territories" between 1400 and 1600, a new geopolitical dynamic emerged. The boundary of the unknown became a source of allure, mystique, and threat, where exploration, exoticism, and exploitation were intertwined.[239]

One of the seminal works in modern postcolonial studies, written in 1978 by Edward Said, examines how the "Orient" was objectified to satisfy the curiosity of the "West" and how this perception has persisted into present days. Geographical structures, belief systems, and cultural expressions were defined and cemented in caricatured forms. People from Arab countries were not only alienated but were also seen as the antithesis of the European man.[239] Said emphasizes that the so-called Orientalism was a bidirectional process, involving both an understanding of the Other and, more importantly, an understanding of oneself. This encounter became a projection surface for the notion of the scientifically created scholar and his specimens, where everything could be categorized and ranked, thereby solidifying barriers between people.[239]

At the core of health and care sciences lies the question: who owns the truth regarding what a person is, has been, and will become? While no one can doubt the significance of the medical advances that have been made, there are certain methodological similarities to the Orientalism process, regarding the interface between self-image and environment. In a metaphorical sense, the human body and existence, too, have become something of a display case, holding collections of objects gathered from nature, exhibited for the enrichment of the viewer. In some cases, hindsight reveals that the price paid has been high relative to the practical benefits gained. Specifically, in the design of psychiatric care and treatment, the patient has often had little say in their own care. Instead, it can be argued that the patient has been objectified and reduced to a bearer of signs to be studied and classified.[240, 241]

THESIS RATIONALE

In recent decades, researchers in suicidology have focused on establishing statistical risk factors, developing brief suicide preventive interventions, and studying public resources for specific cohorts. Previous research has contributed to improved data collection and quality, enabling a more reliable understanding of global trends in suicide prevalence and vulnerable populations. This has enhanced our understanding not only of the medical conditions, but also the cultural and societal factors associated with suicidality.[60, 183, 242-258] Within the health and care sciences, some studies have explored suicide from the perspective of patient safety[259-262] and healthcare utilization among individuals who have died by suicide[106, 148, 263-268]. Research rooted in the lived experiences of individuals with suicidality[20, 22, 269-271], along with the perspectives of friends and family members supporting loved ones through suicidal crises[272-283], provides critical insights—offering an insider's understanding of what it feels like to be suicidal and the experience of losing someone to suicide. However, there remains a lack of knowledge about patterns in adverse event reporting, differences in care provided to patients with varying levels of suicidality, and the perspectives of patients and relatives on person-centeredness in care for individuals with suicidal issues.

AIM

The overall aim is to examine healthcare utilization and explore the potential for person-centeredness in healthcare for patients with suicidal behavior.

The specific aims are:

I. To analyze service-related factors that precede suicide and identify potential targets for intervention.
II. To compare mental healthcare utilization among persons deceased by suicide with living persons with and without suicide attempts.
III. To inform the enhancement of person-centeredness in suicide preventive healthcare, by exploring the lived experiences of individuals who sought primary or secondary healthcare in Sweden during suicidal crises.
IV. To elucidate the experiences of relatives of persons with healthcare contacts due to suicidal issues and to gain insights into how to enhance person-centeredness in suicide preventive healthcare.

MATERIALS AND METHODS

DESIGN

This thesis explores healthcare utilization and the potential for person-centered care in care for patients with suicidal behavior. Viewed broadly, **Study I** analyzes reported adverse events among patients who died by suicide, while **Study II** investigates mental healthcare visits in relation to varying levels of suicidality. **Studies III-IV** provide insights from patients and their personal networks on person-centeredness during suicidal crises. To address the specific aims of the thesis, different research approaches, which are presented in Table 1, were employed across the studies.

In **Study I**, the focus was on identifying service-related deficiencies frequently reported in suicide cases, particularly those exhibiting patterns of co-occurrence. A network analysis was applied to reported frequencies to assess the significance of each factor (node strength) and the relationships among them (edge strength).

In **Study II**, the objective was to compare mental healthcare utilization among patients with varying levels of suicidal behavior, as documented in psychiatric services at a regional Swedish hospital. Descriptive statistics, including totals, averages, and percentages of different types of healthcare visits, were employed alongside odds ratios to assess the risk of exacerbation across cohorts.

Study III utilized in-depth interviews to explore experiences of, and the potential for person-centered suicide preventive care from the perspective of individuals who had sought help during suicidal crises.

Finally, **Study IV** provided insights from relatives, identifying facilitators and barriers to achieving person-centered care for individuals with suicidal behavior.

Study	Design	Aim	Material/Participants	Time period	Setting	Data	Analysis	Presented outcomes
Study I	Retrospective cross-sectional, quantitative study.	To analyze service-related factors that precede suicide and identify potential targets for intervention.	217 suicide root cause analysis (RCA) cases reported to the Swedish national RCA database (NITHA).	2012-2017	Primary and secondary healthcare from 12 Swedish regions.	A total of 961 reported incidents: 499 deficiencies and 462 contributing factors.	Network analysis.	Frequencies, node strength and edge strength.
Study II	Retrospective three-armed case-control study.	To compare mental healthcare utilization among persons deceased by suicide with living persons with and without suicide attempts.	Register material, medical records regarding 4,537 individuals in contact with psychiatric services at a Swedish hospital (189 cases, 72 in Control Group 1, and 4,276 in Control Group 2).	2015-2023	Secondary psychiatric healthcare at a Swedish hospital.	Registered codes and documented assessments	Chi2, Kruskal Wallis test (one way ANOVA on ranks), Fisher's exact test, Wilcoxon signed-rank test, and logistic regression.	Frequencies, averages of healthcare utilization and odds ratio.
Study III	Qualitative, individual, in-depth interview study.	To inform the enhancement of person-centeredness in suicide preventive healthcare, by exploring the lived experiences of individuals who sought primary or secondary healthcare in Sweden during suicidal crises.	28 persons with lived experience of suicidal behavior.	2023-2024	Primary care, secondary psychiatric healthcare in Sweden.	Text (transcribed audio files)	Hermeneutical phenomenological approach (Lindseth & Norberg).	Abstracted themes and subthemes.
Study IV	Qualitative focus group interview study.	To elucidate the experiences of relatives of persons with healthcare contacts due to suicidal issues and to gain insights into how to enhance person-centeredness in suicide preventive healthcare.	31 relatives to 27 persons with lived experience of suicidal behavior.	Mid 1990's-2023	Primary care, secondary psychiatric healthcare, community care in Sweden.	Text (transcribed audio files).	Thematic content analysis (Braun & Clarke).	Abstracted themes and subthemes.

Table 1. Overview of the four studies included in this thesis.

PATIENT AND PUBLIC INVOLVEMENT

Representatives from three Swedish non-governmental organizations focused on suicide and suicide prevention– Suicide Prevention and Survivor Support (SPES), Suicide Zero, and the Swedish Partnership for Mental Health (NSPH)–were involved in the planning and recruitment phases of the interview studies (**III-IV**). Additionally, Isabelle Joneken, a volunteer responder at the MIND Suicide Helpline, contributed during the data analysis and the interpretation phases of the same studies. Similarly, Susanne Tell, representing the GPCC Person Council, contributed during the interpretation step. Both were involved in revising the manuscripts.

SETTINGS

The four studies describe Swedish clinical settings from different perspectives.

Study I examines reported adverse events related to suicide incidents that occurred between 2012 and 2017, sourced from the national database for root cause analyses (NITHA). The years mark the commencement of NITHA's implementation and the conclusion of the obligation to report suicide cases to the supervisory authority. The recorded incidents concern care provided within primary care, secondary care, and municipal healthcare in 12 of Sweden's 21 regions. Due to varying reporting practices, a higher proportion (calculated as reports per capita) originates from healthcare providers in Western Sweden.

Study II compares differences in mental healthcare utilization from 2015 to 2023 among three groups of patients within adult psychiatric services (including care for affective and bipolar disorders, burnout syndrome, eating disorders, forensic psychiatry, gender dysphoria, neuropsychiatric conditions, personality disorders psychosis, substance use disorders, and trauma) at a hospital in a city with a population of approximately one million, including the metropolitan area.

Study III explores personal experiences of care, as well as reflections on person-centered, suicide preventive care, among individuals with firsthand experience of suicidal behavior, across a total of 10 Swedish regions (Dalarna, Jämtland-Härjedalen, Norrbotten, Södermanland, Stockholm, Västerbotten, Västernorrland, Västra Götaland, Örebro, Östergötland). These experiences involve both primary and secondary care and cover both urban and rural settings.

Study IV highlights the experiences of being a relative of someone with suicidal issues, as well as relatives' reflections on person-centered care for patients with suicidal beahvior, from a total of 8 regions (Dalarna, Halland, Skåne, Stockholm, Värmland, Västra Götaland, Västmanland, and Östergötland). This study also includes experiences from both primary and secondary care, from both urban and rural environments.

PARTICIPANTS AND MATERIAL

STUDY I

The data for **Study I** includes 217 root cause analyses (RCAs) conducted following suicides and uploaded to the national database for RCAs (NITHA). The RCAs involved 125 men, 90 women, and 2 individuals with unspecified gender, ranging in age from 7 years and older. The most commonly reported primary diagnosis was depression, and the most frequent form of care was outpatient psychiatric care.

According to the Patient Safety Act (2010:659), the purpose of all investigations is "to clarify, as far as possible, the sequence of events and the underlying causes that led to the occurrence of the incident in order to prevent it from happening again."[45] The assessments are carried out by local personnel designated by the healthcare provider. While the method used is optional, RCA is recommended to ensure uniform and comprehensive data collection. Teams are typically trained in the RCA method, which begins by identifying the primary healthcare providers, collaborators, and family members. This is followed by a data collection period, concluding with a report that lists adverse events and their contributing factors. These types of reports form the basis for the network analysis in **Study I**.

A review by Roos af Hjelmsäter[259] presented findings from all investigations reported to the supervisory authority The Health and Social Care Inspectorate during 2015. In **Study I**, we have taken a different approach. We chose to include only RCAs to minimize the interpretive steps that follow data collection. Since the RCA process itself is based on a classification system, we used RCA terminology to map the contributing factors. Additionally, we chose to include only the data available through the national database, as it is accessible to healthcare providers and is more likely to contribute to the dissemination of lessons learned compared to reports sent solely to IVO. This strategy contributed to increased conformity in the design of the data but also reduced the number of cases included, which in turn affected the generalizability of the findings. Thus, the results of our study exclude all cases that, for any reason, were not detected by the healthcare system, were not investigated by healthcare providers, or were not uploaded to NITHA.

STUDY II

Data for **Study II** was collected from the registries and booking systems of all psychiatric units across one Swedish hospital. The dataset covers healthcare interventions provided between 2015 and 2023. Participants were divided into three matched cohorts: patients who died by suicide (n=189), patients with at least one registered suicide attempt (n=72), and patients who did not meet either of these criteria (n=4276).

To determine cohort classification, reported suicide cases from the hospital's incident reporting system and ICD-10 diagnostic codes were utilized. The dataset comprised demographic information from official registration records, in addition to intervention codes recorded at each visit. These interventions included outpatient visits, emergency visits, inpatient care, telehealth consultations, and canceled appointments.

The demographic characteristics of the included patients are presented in **Study II**, Table 1. Among those who died by suicide, slightly more than half were men, whereas the other groups had a somewhat higher percentage of women. The share of individuals with more than three documented diagnoses was 65% among suicide decedents, 85% among surviving patients, and 49% in the non-suicidal group. The duration of care varied from 2 years and 7 months among suicide decedents and non-suicidal individuals and 6 years and one month for individuals surviving a suicide attempt.

STUDY III

Study III consists of transcribed in-depth interviews with 28 individuals with personal experience of suicidality. In addition to the interviews, participants completed a questionnaire, which was compiled to provide a demographic profile of all included. A detailed description of the included and excluded participants is provided in the manuscript.

Among the participants, there were 18 women, 5 men, and 5 individuals identifying as another gender or who preferred not to disclose their gender identity. To protect the privacy of the participants, age was recorded within an age range rather than as a specific birth year. Over 80% of the participants were under the age of 45. More than half of the participants had three or more diagnoses, with depression/anxiety being the most commonly reported. Similarly, 54% reported having received care for more than five years. Almost 70% listed psychiatry as their main care provider, while one in five stated they received care from multiple providers concurrently. The majority of participants (82%) were born in Sweden.

Recruitment was carried out through Suicide Zero and the Swedish Partnership for Mental Health (NSPH), two non-governmental organizations (NGOs) supporting patients, users, and informal caregivers in the mental health field. The NGOs disseminated information about the study through social media and their websites. Additionally, information about the study was given to professionals at four outpatient clinics specialized in psychosis care, forensic care and mental healthcare for young adults. The presentations were approximately 30 minutes long and were held at the workplaces' regular staff meetings.

Participants were given the option to choose the interview format. Interviews were conducted either face-to-face (n=19) or via an encrypted digital meeting platform (n=9), with the sessions recorded using a digital audio recorder. During the online sessions, two meetings were converted to phone calls at the patient's request. The location of the interviews was discussed in advance to ensure a neutral setting. None of the participants had any prior relationship or connection with the interviewer before the study.

The collected data covers several subgroups, which could have been analyzed separately to capture specific perspectives, such as those concerning children and adolescents, LGBTQ individuals, or people with mobility impairments reporting special needs. In **Study III**, however, we opted not to structure the data by group affiliation, as our primary interest was in how person-centered care could be enhanced more generally within care provided to individuals experiencing suicidality. To avoid the risk of marginalizing the voices of statistical minorities or creating the impression that specific needs are in opposition to each other, we decided to save portions of the data for a future study, and thus, they are not presented here.

STUDY IV

The material for **Study IV** consists of transcribed focus group interviews with 31 relatives (26 women and 5 men) of 27 individuals (21 of whom were deceased) with suicidal behavior. Similar to **Study III**, the recruitment phase is described in detail in the manuscript. In four cases, two participants were related to the same individual. To minimize the influence of prior relationships on the interviews, three of these pairs were placed in separate focus groups. In the fourth case, the relationship between the two participants was unknown beforehand and only became apparent after the interview had commenced.

One participant from **Study III** also participated in **Study IV**. Beyond this overlap, there is no connection between the studies or known overlap in participants. The relationships to the suicidal individuals primarily comprised family ties—parent, offspring, sibling, or partner. In four cases, the participant was a friend or part of the extended family of the suicidal individual.

Of the 27 suicidal individuals, 14 were men and 13 women. Two individuals identified as transgender and are presented in the study according to their current gender identity. The age range varied: the youngest individuals were around 10 years old at the onset of their suicidal behavior, while the oldest was nearly 80 years old. Comorbidity was common, with depression and anxiety cited as the most frequent diagnoses, and psychiatric care as the most frequently reported healthcare provider.

Recruitment for this study was conducted through the non-governmental organizations Suicide Prevention and Survivor Support (SPES), Suicide Zero (SZ), and the Swedish Partnership for Mental Health (NSPH). Information about the study was disseminated via both traditional networks and social media posts. Similar to the recruitment process in Study III, four outpatient clinics - specialized in psychosis care, forensic care and mental healthcare for young adults – were given a 30-min presentation each about the study during their regular meetings for professionals.

Each focus group was planned to include three to six participants. On one occasion, only two participants attended due to a last-minute cancellation. Otherwise, the focus groups were conducted as planned. Both in-person and online focus group meetings were arranged, with participants choosing their preferred format. In rare cases where in-person group members were unavailable at a specific site, a small number of participants who had initially requested in-person meetings were offered participation in a digital focus group instead.

The recruitment and interview strategies were chosen to increase variation within the focus groups. The aim was to create a permissive environment that encouraged spontaneous discussions among participants and allowed a diversity of reflections to emerge. The use of social media for recruitment made it possible to reach individuals beyond the immediate members of each NGO, thereby increasing both variation and privacy.

Alternative recruitment approaches could have included a closed recruitment base—limiting the invitation to members of the organizations and scheduling specific participation opportunities. However, this option was not pursued for the reasons outlined above.

Similar to the previous study, women are overrepresented among the participants in **Study IV**, even though the distribution of suicidal individuals was evenly distributed between men and women. Three of the participants were acquaintances of members of the research team. To strengthen confirmability and reduce the risk of personal bias, the focus groups were intentionally organized so that no participant had any previous relationship or connection with the moderator.

Data collection, preparation and analysis

STUDY I

Study I utilized a network analysis approach based on root-cause analysis (RCA) materials. Data for the study was obtained from NITHA and systematically screened and categorized by two teams, each composed of two members trained in the RCA methodology. The categorization process consisted of three clearly defined stages. First, the material was thoroughly read and carefully reviewed to ensure a comprehensive understanding. Second, a coding tool was designed and refined to systematically categorize adverse events, contributing factors, and interventions. Finally, this coding framework was applied to perform a detailed classification of all 217 cases.

DATA PREPARATION

The raw data underwent further analysis to extract text strings, resulting in the identification of 499 deficiencies and 462 contributing factors. To reduce the risk of biased results, arising from cases where the original RCA teams had documented subcategories under the same item, each item was converted to a binary format. These items were then treated as nodes in the network, with pairwise associations represented as edges, illustrating their relationships.

DATA ANALYSIS

All network analysis calculations were conducted using R software. Descriptive statistics were presented as totals, means, medians (±SD), min-max values, percentages, and frequencies. For the network analysis, both node strength and edge strength centrality indices were employed to assess the relationships among variable clusters (alpha=0.05). Additionally, correlation stability coefficients were calculated for each network to evaluate their overall stability.

VISUALIZATIONS

Three distinct networks were created, one offering a comprehensive visualization of major themes and two providing detailed insights into the deficiencies and contributing factors identified. For each variable, frequencies and percentages were reported alongside centrality indices and stability measures. EBICglasso (Extended Bayesian Information Criterion Graphical Lasso) was used to regularize and generate sparse graphical representations. This approach prevents overfitting and improves interpretability by minimizing the number of edges in the network. The Extended Bayesian Information Criterion (EBIC) is utilized to determine the optimal model, balancing complexity (fewer edges) with goodness-of-fit. The IsingFit model was applied to isolate significant relationships among nodes. This method suppresses minor connections, effectively filtering out insignificant links and enhancing the network's clarity and precision.[284, 285]

To further enhance reliability, a bootstrap procedure was employed, resampling the data 2,500 times for each network. The resulting networks were visualized using the R packages qgraph, igraph, and ggplot2.[286-290] The visualizations were structured with the Fruchterman-Reingold algorithm, which draws nodes with greater centrality closer to the network's center, thereby enhancing the interpretability of the findings.[291]

STUDY II

Study II employed a naturalistic case-control design to compare mental healthcare utilization among patients with various levels of suicidality, engaged with secondary-level mental healthcare. The study groups included: (1) patients who had died by suicide, (2) patients with at least one registered suicide attempt, and (3) patients who did not meet either criterion. Data was collected from patient records and booking systems at a single Swedish hospital. Matching variables included age, registered gender, and primary diagnostic category. The subsets for controls were matched with the cases and subsequently combined to generate a comprehensive list of all participants included in the cohort. All calculations for matching, balance diagnostics, power analysis, and sensitivity analysis were conducted using the MatchIt, tidyverse, pwr, and cobalt packages.

PRIMARY OUTCOME VARIABLES

Reported totals, averages and percentages of:

a) In-person outpatient visits.
b) Emergency visits.
c) Inpatient stays, including both number and duration (days).
d) Telehealth interventions.
e) Cancelled and missed appointments.
f) Healthcare plans.

SECONDARY OUTCOME MEASURES

a) Odds ratio for emergency visits

DATA PREPARATION

The raw data included records created by the healthcare team during each visit, detailing care type, visit reason, care plans, lengths of stay, and confirmed diagnoses. The data was transformed into data frames, with columns created for each variable. Each row was dichotomized, assigning either a 1 or 0 to the outcome of every variable. In addition to demographic data, the total counts for each visit type, average care durations (both overall and for inpatient stays), the number of inpatient periods, and the proportion of patients with care plans were calculated for each cohort.

DATA ANALYSIS

All calculations were performed using R software. Descriptive statistics were presented as totals, means, medians, range values, patient averages, length of stay (in days), and percentages. To examine healthcare utilization across the three cohorts, Kruskal-Wallis tests, followed by post-hoc Dunn’s tests, Pearson's Chi-squared test, Fisher's exact test, and logistic regression were applied. Wilcoxon signed-rank tests (two-sided) were used to compare the standard year with the final 12 months for suicide decedents. The results of the logistic regression were presented with odds ratios and 95% confidence intervals (CI). Results were considered statistically significant when the adjusted p-values were < 0.05.

VISUALIZATIONS

Two visualizations were created using ggplot:

- A “standard year” graph, representing an average calendar year for each cohort. For individuals who died by suicide, the standard year excluded data from the final 12 months of life.
- A timeline graph displaying recorded visits during the last 12 months for each individual who died by suicide.

LOGISTIC REGRESSION

Finally, a logistic regression analysis was conducted to examine whether the presence of healthcare plans influenced the occurrence of exacerbations. Emergency visits were used as a proxy for the dependent variable (relapses). All recorded instances of healthcare plans were accepted as valid, regardless of their content or date.

STUDY III

DATA COLLECTION

Study III employed in-depth interviews with individuals with lived experience of suicidality, to explore how to enhance person-centeredness in suicide preventive healthcare. The study included 28 participants, who were interviewed according to a semi-structured interview guide. The interviews were held in Swedish by the first author (MR) and were conducted either face-to-face or via a secure online platform approved for digital healthcare consultations. Each interview concluded with the question, "Is there anything else you would like to add?" and continued until the participant chose to end the conversation. The in-person meetings were held at a neutral venue in the participant's residential area. In addition to the audio-recorded material, demographic information for each participant was collected via a questionnaire.

DATA ANALYSIS

The collected material was transcribed and analyzed using a phenomenological hermeneutical approach, as described by Lindseth and Norberg.[292]

The interpretative process involved several stages:

- Initial review: The authors reviewed a selection of transcripts to gain an overview of the content.
- Naïve understanding of the material: The first and last authors (MR and LA) repeatedly read the text, seeking potential interpretations of the narratives while striving to bracket any preconceptions.
- Identification and coding of meaning units: Explicit and latent meaning units were highlighted, condensed, and abstracted into themes, using Nvivo 14.
- Quotes were selected to illustrate each theme. Minor adjustments were made to the text to ensure participant anonymity.
- Collaborative discussion: The themes were read and discussed by all authors, considering their interrelations and relevance to existing literature.

STUDY IV

DATA COLLECTION

Study IV was a focus group interview study designed to capture relatives' perspectives on how to enhance person-centered care for individuals with suicidality. A total of 31 participants were divided into nine focus groups, with grouping determined by the date of enrollment, their preference for face-to-face or online interviews, and, in cases where an in-person meeting was preferred, their residential location. The focus groups were led by either MR (six interviews), LA (two interviews), or both (one interview), with each session lasting, on average, 1 hour and 35 minutes. Although a semi-structured interview guide was used, participants were encouraged to freely discuss each topic in depth. Similar to the approach used in **Study III**, the final question of the interview guide was the prompt, "Is there anything else anyone would like to add?" This question was repeated until the participants responded with "no." In eight of the interviews, the decision to conclude was made by all group members. One interview was concluded at one participant's request, as they expressed that the conversation had evoked feelings of sadness. The interview was immediately terminated. Support was offered to the participant, both on-site and with the option to follow up later. The possibility of continuing the interview at another time was briefly discussed among the participants, and a decision was reached collectively by the group. By the time the interview was brought to an end, the conversation had already addressed all key points in the interview guide, and the focus group members concluded that no further follow-up was needed. Similar to the participants in **Study III**, participants were asked to complete a questionnaire to provide their demographic information.

DATA ANALYSIS

A thematic analysis, following the approach outlined by Braun and Clarke[293], was employed to analyze the transcriptions of the audio recordings from the interviews. A sample of these transcriptions was reviewed by all authors to brainstorm general themes and establish the subsequent analytical procedures. MR and LA then read the transcripts and highlighted relevant excerpts. A thematic map was constructed to explore and group the data into broader themes and subthemes. Relevant quotes were selected to exemplify the themes. The coded material was systematically assigned to themes until all data was adequately labelled. A final review was then carried out to ensure that the study's objectives were fully addressed and that the participants' narratives were faithfully represented in the material.

ETHICAL CONSIDERATIONS

The studies presented in this thesis were conducted in accordance with the ethical principles established in the Declaration of Helsinki.[294] **Study I** did not involve research on living participants or the processing of personal data. Therefore, it was not subject to ethical review under the provisions of the Swedish Ethical Review Act (2003:460). Instead an advisory statement was obtained from the Regional Ethical Review Board in Gothenburg (number 175-18).

Approval for **Studies II–IV** was granted by the Swedish Ethical Review Authority (number 2023-02180-01) before recruitment and data collection commenced. In accordance with the ethical approval, participants in **Study II** were not contacted directly, as the study exclusively involved the processing of coded personal data. Requiring prior consent was assessed as likely to result in both a high dropout rate and biased participant withdrawal.

An ethical protocol (Supplement A) was developed for **Studies III–IV**, specifying the procedures for engaging with participants before, during, and after the interviews. During recruitment, detailed information was sent to all individuals expressing interest in participating. This information outlined the purpose, conduct, potential risks, and benefits of the study, along with formal details regarding the principal investigator. The primary risk identified was emotional discomfort, while there were no direct benefits apart from the possible emotional relief associated with sharing one’s story. Ongoing support was offered to all participants throughout the duration of the study. The researchers leading the project possessed extensive specialist expertise in suicidology, psychiatry, and patient safety, ensuring a capacity to deliver immediate supportive interventions on-site and to facilitate referrals for more extensive follow-up care when necessary.

Participants were asked to thoroughly review the study information and consider their involvement before scheduling an appointment. The information was reiterated the day before the interview, alongside a briefing about the interview's content and logistics. Each communication included the contact details of the first author, whom participants were encouraged to reach out to with any questions or support needs, regardless of the time frame.

Written consent was obtained from every participant prior to starting the interview. Before the interview began, participants were reminded that they could end the interview and leave at any time without providing a reason. Similarly, participants were informed of their right to withdraw participation at any point before data analysis was completed, in which case all their materials would be deleted.

DATA SECURITY MANAGEMENT

The digital interviews were conducted on an encrypted online platform. All collected data were securely stored on a high-security digital platform, comparable to systems used for electronic medical records.

DECLARATION OF AI AND AI-ASSISTED TECHNOLOGIES USAGE

ChatGPT-4, developed by OpenAI, was used as an editorial assistant to enhance the readability and flow of the manuscripts prior to submission, as well as for R code assistance. The final review and editing were carried out manually. I take full responsibility for all content presented in this thesis.

RESULTS

STUDY I: SERVICE-RELATED FACTORS THAT PRECEDE SUICIDE AND POTENTIAL TARGETS FOR INTERVENTIONS

Study I featured a network analysis focusing on service-related factors, including deficiencies and contributing elements observed in 217 cases of occurred suicides. Six major themes of deficiencies were identified, comprising a total of 499 instances. The three most frequently reported themes were missed psychiatric evaluations, inadequate follow-up procedures, and poor collaboration among professionals. Key areas for intervention included the interface between inpatient and outpatient care, disruptions in clinical contact, and missed or canceled appointments. In nearly 80% of the cases, deficiencies in collaboration were attributed to unclear boundaries defining the responsibilities among care units.

The contributing factors were categorized into a total of 11 major themes, and 34 subthemes, including both adverse events and root causes (please see article 1 for details). Nearly half of the reported contributing factors involved absent or inadequate routines, procedures, and guidelines. Additional contributing factors encompassed inefficient work structures, communication failures, and inadequate staff competence.

Network analysis was employed to identify communities and, more specifically, to detect nodes acting as "hubs" within the network. The visualized network can be likened to a map of airports and flight routes, where highly trafficked airports appear as larger nodes, and the volume of flights is represented by thicker connecting lines. The communities uncovered in this analysis highlighted service-related factors that frequently co-occurred. Centrality within the network was interpreted as the factors most frequently reported relative to others within the same community. Since the nodes lacked predefined spatial positions, unlike airports on a world map, an algorithm was used to draw central nodes toward the network's core.

Two clusters, or communities, were identified within each network:

Main Themes, presented in the Major Network

1. Nodes representing deficiencies in psychiatric evaluation and follow-up, alongside contributing factors related to procedures, routines, and policies.

2. Nodes representing communication deficiencies paired with contributing factors related to organizational issues and documentation challenges.

Subthemes, presented in the Deficiencies Network

1. Nodes representing understaffing, missed or declined appointments, and cases where future appointments had not been scheduled.

2. Nodes related to the assessment of suicide risk and evaluations of overall mental health.

STUDY II: MENTAL HEALTHCARE UTILIZATION AMONG PERSONS DECEASED BY SUICIDE, COMPARED TO LIVING PERSONS WITH AND WITHOUT REGISTERED SUICIDE ATTEMPTS

In **Study II**, three cohorts of patients utilizing mental health services were analyzed to identify patterns in their healthcare utilization. The findings indicate that patients exhibiting suicidal behavior—both those who survived a suicide attempt and those who died by suicide—tend to have more frequent physical outpatient visits and telehealth consultations compared to patients with no known history of suicide attempts (please see Table 2, **Study II**). They also missed more scheduled appointments and experienced higher frequencies of inpatient admissions. Compared to those without suicide attempts, a significantly higher proportion of patients with suicidal issues (including both deceased and surviving individuals) had a documented substance use disorder ($p<0.001$).

Patients without suicide attempts were admitted to inpatient care less often, although their average length of stay was longer. However, the comparison of inpatient durations among groups did not reach statistical significance ($p \approx 0.4$). Across all three groups, significant differences were observed in various types of healthcare utilization ($p < 0.001$), except when comparing survivors of suicide attempts with individuals who died by suicide ($p \approx 0.7$). A higher proportion of patients who survived a suicide attempt had a documented healthcare plan, compared to deceased patients ($p=0.006$).

Focusing on suicide decedents, significant changes in in-person outpatient visits were identified ($p \approx 0.03$) when comparing the average year, excluding the final 12 months, to the last year of life.

These differences persisted even after excluding 67 individuals whose healthcare records covered less than 12 months. Increased variability was observed in emergency visits, inpatient admissions, missed appointments, and telehealth usage during the final year, though these trends were not statistically significant.

Finally, the impact of having a healthcare plan on acute exacerbations—using emergency visits as a proxy—was examined. While the coefficient for healthcare plans was negative (-11.49), indicating a potential protective effect, the large standard error rendered the result statistically non-significant. Belonging to the group without registered suicide attempts was the only factor that remained significant in the model.

STUDY III-IV: PERSON-CENTERED SUICIDE PREVENTION, FROM THE PERSPECTIVE OF PATIENTS AND RELATIVES

Study III & **Study IV** incorporated narratives from individuals with lived experiences of suicidal behavior and from relatives of individuals with past or present suicidality. **Study III** identified six overarching themes, while **Study IV** uncovered four main themes and eight subthemes (please see each manuscript for details).

The findings highlighted significant discrepancies between the needs described by patients and relatives and the services provided by healthcare systems. Suicidality was depicted as a prolonged condition characterized by fluctuating symptoms and varying impacts on daily life. This reality led to a mindset where many of the participants with lived experience of suicidality depicted preparing for a "worst case scenario", while trying to live a normal life (**III**).

Participants in **Study III** felt confident in making decisions about their care, emphasizing that periods of low-intensity suicidality were ideal for long-term interventions like developing or updating safety plans. As their suicidality fluctuated, they had learned to recognize early signs, avoid triggers, manage milder episodes, and, when necessary, activate safety plans and seek help. They emphasized the importance of having a designated healthcare team that understood their "healthy selves". During times of exacerbation, when participants felt that their personhood was threatened, the alliance between patients and professionals could serve as a safeguard (**III**).

> *"If you fall into depression again, with suicidal thoughts and feeling unwell, it's important that someone can... well, they know me, so they can say, when it happens again, that there is hope because it has gotten better before. I know they know that too. Otherwise, it's easy to get stuck in the belief that it will never get better and that they can't know, and, well, lots of negative thoughts like that. But I've been able to trust that, yes, they do know, they have been there, they have seen it."*
>
> Person with lived experience of suicidal behavior, Study III

Both patients and relatives shared experiences of effective collaboration with healthcare teams. However, many also reported feeling that suicide prevention was limited to crisis care—often so urgent that voluntary care was no longer possible. They described healthcare systems as primarily driven by a biomedical focus and pharmacological treatments, with care often governed by organizational priorities rather than patient needs (**III-IV**).

> *"It's not that there are bad people there, but the system just doesn't work. It's like, 'Yes, we can see where this is heading, and we can suggest medication. Here's a prescription. Take care, goodbye."*
>
> Relative, Study IV

In such circumstances, seeking care not only had the potential to result in meaningful support but also posed a risk: patients who sought help early in their struggle might be seen as "not ill enough," while those who delayed care faced the consequences of untreated conditions, decreased willingness to accept help, and a reduced ability to actively engage in their treatment. The help-seeking process was described as difficult, with comparisons drawn to being tested. To withstand the test, one had to present oneself in a certain way, striking a balance between demonstrating need while still being perceived as rational enough to avoid police involvement, compulsory care, or being assessed as manipulative and subsequently discharged. Being dismissed after managing rising symptoms on their own until they could no longer cope was seen as a potential negative outcome. Some participants compared the process of seeking help to being put through a witch trial (**III**).

“You have to present it in a very specific way to be heard properly. It’s almost an art.“

Person with lived experience of suicidal behavior, Study III

Relatives emphasized the inequities in burden-sharing between patients and care teams. A failed or incomplete treatment attempt could result in months of recovery for both the patient and their family. Relatives suggested involving friends and family more actively in care processes, noting that this approach was common in other areas of healthcare. While many felt that psychiatric services often adhered to stricter interpretations of confidentiality regulations and rarely utilized the relatives as resources in the care, some shared how they had been invited to collaborate (**IV**).

"We sat down together and discussed it [the healthcare plan]. It was really helpful to talk about things like, 'If you need to go to the hospital, what do you want to bring?' 'Nicotine pouches,' for example [laughs]. 'Who should we call first?' 'Mom.' It was a really positive experience to be part of this planning. It felt essential in case his condition deteriorated."

Relative, Study IV

Examples of areas where relatives could contribute included planning and follow-up during transitions between inpatient and outpatient care, mediating during crises, and acting as long-term information carriers (**IV**). **Study III** also indicated that involving relatives was both important and desirable. However, it stressed the need to distinguish between different types of roles and responsibilities. Additionally, participants recommended that healthcare professionals involve a *"trusted person"*—a concept that includes anyone the patient considers close—rather than assuming a relative by default. Participants in both studies identified staff shortages as a threat to both patient safety and person-centered care. However, equally important as adequate staffing levels was the proactive engagement of staff in understanding and addressing patients' situations in a supportive yet realistic manner (**III-IV**).

> *To me, what has been absolutely most helpful is having the chance to talk with trusted people. It's helped a tremendous amount. Just having one person—or if I've been lucky, two—working in psychiatry, either at the clinic or on the ward, whom I can talk to. It doesn't even have to be that they offer a lot of great suggestions like 'try thinking this way' or 'look on the bright side,' which you often hear in psychiatry. What I've really needed from psychiatry is validation, to feel that 'what I'm feeling right now is okay.'*
>
> Person with lived experience of suicidal behaviors, Study III

Participants in **Study III** discussed the difference between safety and security. While secure facilities prevented suicide attempts, safe environments fostered interactions that helped patients reconnect and build resilience. The ideal approach was described as a combination of both (**III**).

> *"Participant: Had he done what everyone else did—just waited and treated me like a ghost in the hallway—things wouldn't have turned out so well. It made a difference that he actually saw me.*
>
> *Interviewer: What do you think he saw when he did that?*

Participant: He had worked in forensic psychiatry, so I believe he picked up on signals in a completely different way than most others there. Many staff members... they have nursing training, but they might not be able to read patients' cues when things are good or bad. Just recently, I tried to hang myself in the ward, and I was really happy that evening because I knew it was going to happen that night. And they were just like, 'Oh, it's great that you're feeling better. You've been here three days, two days, and now you're happy again. Time to go home, I guess.' That's the kind of response you get.

Interviewer: But he saw something different, then?

Participant: Yes, he must have seen something. That I went from being completely down, writing farewell letters to everyone, crying my eyes out, to being calm—without any medical changes. I just became calm. So that must have been what he noticed, I suppose."

Person with lived experience of suicidal behaviors, Study III

Similarly, relatives discussed safety in terms of healthcare professionals actively taking responsibility for providing high-quality care and basing their assessments and recommendations on information gathered from all available sources (**IV**).

Person-centered care was described as dependent on both the actions of individual professionals and the organizational structures and attitudes within the healthcare system. Being regarded as capable and entrusted with responsibility—whether for one's own care (**III**) or as part of a relative's care plan (**IV**)—was seen as a critical step. Essential to achieving this were well functioning communication channels, coordinated care, transparent decision-making, and mutual trust among healthcare teams, patients, and their families.

DISCUSSION

The overarching aim of this thesis was to examine healthcare utilization and explore the potential for person-centeredness in healthcare for patients with suicidal behavior. Healthcare utilization was examined from two perspectives: first, through the lens of adverse events identified and reported by healthcare providers in connection with suicides (**I**), and second, by analyzing coded mental healthcare visits for individuals with varying degrees of suicidality. This knowledge is crucial for understanding potential differences in how patients access and receive care, as well as identifying the shortcomings healthcare systems themselves have reported in suicide-related care pathways.

The findings from **Study I** reveal that certain service-related factors identified after suicides are interconnected and that issues in care delivery often stem from organizational weaknesses, such as staffing shortages, inadequate care transitions, and suboptimal follow-ups. These challenges resonate across the other three studies: in the qualitative interviews conducted in **Studies III-IV**, resource limitations were highlighted as a threat to both patient safety and person-centered care. Participants described how these limitations might contribute to challenges in accessing appointments and services, reduced continuity of care, and a lack of institutional memory.

Study II further demonstrates differences in mental healthcare utilization between patients with and without documented suicide attempts. Individuals with suicidal behavior visited outpatient services more frequently, required more emergency care, and had more in-patient stays than those without known suicide attempts. Within the group of patients exhibiting suicidal behavior, additional disparities emerged: individuals who survived and received care following a suicide attempt had more recorded healthcare interventions, while those who died by suicide had significantly fewer healthcare encounters. Additionally, suicide decedents had fewer outpatient visits during the final 12 months of life compared to preceding years.

Although this study does not establish causality, findings from **Studies II-IV** suggest that patients with suicidal behavior have a relatively high need for healthcare and may face challenges in fully recovering and achieving long-term remission. They appear to remain vulnerable to relapses, and require supportive interventions over extended periods—a conclusion supported by prior research on healthcare utilization and suicides in Sweden.[106, 264, 266]

Given the differences in average duration of care among participants in **Study II**, it is worth considering whether those who died by suicide were inadequately identified by the healthcare system as being at risk and, consequently, did not receive the interventions provided to those who survived. We do not know the specific methods used to assess suicide risk among these patients, but perhaps the reliance on exclusively inquiring about thoughts and plans for suicide was a limitation. Previous research indicates that individuals with suicidal behavior sometimes seek care for other concerns, such as anxiety, sleep or pain issues.[148-151, 154] Additionally, the findings from **Studies III-IV** suggest that the preferred suicide prevention encompasses both low- and high-intensity care and that an overemphasis on identifying who is acutely suicidal may deter patients from seeking help until they feel certain they will be admitted, out of fear of being dismissed. Incorporating a broader understanding of the contributing factors of suicidal ideation on an individual basis, along with strategic planning for managing suicidality at different stages, could potentially increase the number of suicidal patients receiving care.

None of the studies in this thesis explicitly illuminate the perspectives of healthcare professionals. Nevertheless, the use of adverse events reported by healthcare providers in **Study I** offers an insight into the challenges recognized by the providers themselves. The issue of healthcare fragmentation, recurrently highlighted in the RCA reports from **Study I**, is similarly emphasized by patients and relatives in **Studies III-IV**. Given that the fragmentation of healthcare responsibilities—whether arising from the division of care for previously integrated symptoms now managed by multiple specialists, or the allocation of care across various healthcare units over different time periods—was identified as a significant barrier by numerous participants across regions, it is reasonable to infer that this represents a widespread phenomenon. Potential rationales for distributing care responsibilities across multiple units include streamlining patient flow and service delivery, optimizing staff resources to accommodate training, meetings, vacations, and parental leave, and extending services to individuals in smaller communities. Since our studies have not compared the effects of an alternative system, it is not possible to assess whether the current setup contributes a net benefit in relation to the drawbacks highlighted.

Previous adverse event studies conducted in a Swedish context related to suicide reveal that healthcare investigations often conclude that critical shortcomings—frequently concerning actions at the interface between the patient and the care team—are most evident during the final stages of the care process.[259, 260] These investigations are based on a system of adverse event reports modeled on root cause analysis (RCA), grounded in a *Safety I* logic and aiming to minimize future risks by learning from past events. As the name suggests, RCA is designed to uncover not only surface-level errors but also their root causes. However, a fundamental challenge shared by RCA and other retrospective approaches, such as psychological autopsies, is their reliance on the quality and scope of the input data. In healthcare investigations, the analysis team typically consists of professionals responsible for identifying deficiencies within their domain and using the information sources available to them. In suicide cases, however, the most critical source of information—the deceased individual—is missing by default. This lack of information increases the likelihood of interpreting deviations from standard care as inherently erroneous, even when the opportunity costs of alternative actions are unclear and when similar deviations in other contexts may not result in the same adverse outcomes. Additionally, there is a risk of overemphasizing deviations that occur in close proximity to the suicide—such as acute interventions—while underestimating the significance of earlier preventative measures. In summary, these limitations suggest that conclusions drawn solely from retrospective analyses of suicide cases may have restricted utility in reducing future suicides. By integrating the real-time perspectives of patients and their personal networks during the course of care, there is potential to gain a more detailed understanding of how to enhance the effectiveness of suicide prevention care pathways.

In psychiatric care, the patients' ability to actively engage in their own treatment or even to communicate their experiences has been debated.[295-298] Metaphorically speaking, patients have sometimes been seen as ships adrift on the open sea, illuminated only intermittently by the beam of a lighthouse (i.e. the healthcare team), providing fleeting guidance. It is essential to recognize, however, that bias is universal; no one—professionals included—is entirely free from external or internal influences. Moreover, research suggests that framing care through rigid dichotomies—where one person assumes the role of helper and the other the helped—can lead to unintended consequences, such as delays in care delivery[299, 300] or increased sense of helplessness[21, 22]. Findings from **Study III** reveal that patients with suicidality wish to take an active role in their care and see themselves as part of a broader collective, where solidarity and mutual learning with peers is integral. These insights challenge the concern that person-centered care is merely based on patients' "wishful thinking" or that such an approach would excessively drain healthcare resources. Instead, they offer a more nuanced perspective on the feasibility and value of collaborative care. The narratives also highlight that suicide prevention care is often perceived by patients and relatives as available only once a suicidal crisis has been formally recognized—sometimes only after a suicide attempt has occurred. Participants described this "just-in-time healthcare" as contributing to a mismatch between their perceived needs and the services available. Moreover, they felt they had little opportunity to actively engage in their own care, as they were often deemed either too healthy for suicide prevention services or too unwell to participate in decision-making.

According to participants in **Study III**, the overarching goal of person-centered suicide prevention is to restore a sense of normalcy to life. To them, the core of person-centeredness lay in providing care that can adapt to the fluctuating severity of the individual's condition. Similar to previous research on shared decision-making in mental healthcare settings[301], the participants in Studies III and IV underlined that a passive healthcare team—one that placed too much responsibility on the patient—was neither considered helpful nor aligned with the principles of person-centered care. Emphasis was placed on being prepared in advance, ensuring that the patient's healthier self—including their descriptions of trusted individuals and personal life goals—was accounted for, even during times of acute suicidal crises. During exacerbation, participants in **Study III** emphasized the need for a familiar healthcare team to support and accompany them in their search for an alternative emergency exit.

Participants in **Study IV** added that they wanted to be regarded not merely as passive supporters but as active partners in care, describing their preferred role as that of a co-pilot rather than a taxi driver. For them, being part of the inner circle of someone struggling with suicidality meant sharing in both their successes and setbacks — "flying or falling together." This involvement encompassed spending time with the patient in their everyday environments, reflecting on their historical responses to treatments, and anticipating their reactions to future interventions. Another critical function was to assist in the planning of leaves and discharges to enhance patient safety during transitions between inpatient and outpatient care.

In Swedish healthcare, collaboration with patients and their families, as well as the concept of care spanning multiple units with varying levels of urgency, is well-established in other areas of care, such as maternity care pathways, where it is both implemented and actively practiced. These pathways serve various objectives, with a primary focus on preventive measures aimed at supporting self-care and reducing the risk of future health issues. Individuals are viewed within a family context. Expectant parents are equipped with the tools to manage various potential situations, including receiving information and practicing different scenarios in which the family may need to seek medical care, or where planned interventions may need to be adjusted at short notice.[302, 303] Similarly, in suicide prevention care, there may come a point when healthcare professionals need to temporarily take on more responsibility in decision-making. As demonstrated in **Studies III-IV**, this does not contradict patients' and families' understanding of person-centered care. In some cases, participants actively described competent, decisive action as a prerequisite for care to be perceived as both safe and person-centered, even if that meant temporarily limiting autonomy. From this perspective, person-centeredness was discussed in terms of balancing anticipated care with actual outcomes, as well as acknowledging a tacit agreement that all parties involved in care planning possess different areas of expertise.

For participants in both **Study III & Study IV**, the concept of trustworthy institutions was fundamental to person-centered care. The notion of trustworthiness permeated every point of interaction with the healthcare system: in the direct interface between clinicians and patients, in the documented observations made by various professionals, in the clarity of the information provided, and in the communication platforms provided. Experiencing decisions that seemed contradictory, being offered care that happened to be available at a particular unit rather than care aligned with one's perceived needs, or being referred for further assessments by another provider all contributed to diminished trust in the healthcare system (**III**). The same applied when relatives observed that guidelines and procedures obstructed clinicians from providing appropriate care or when overly simplistic systems reduced clinicians' actions to mechanical processes aimed at satisfying organizational demands rather than meeting patient needs (**IV**). The approach perceived as the least person-centered was one that heavily relied on standardized routines, overlooked patients' capabilities, yet simultaneously placed a considerable burden on them to seek help during deterioration, monitor task completion, and demonstrate persistence in carrying out healthcare activities (Studies III and IV).

Currently, healthcare lacks an outcome measure for trust. This means that—unlike other healthcare-relevant outcomes, such as quality of life, cost per unit, or time spent—trust cannot be measured or evaluated at present. The studies in this thesis did not specifically investigate which metric might be suitable for assessing trust in healthcare. However, many participants in **Studies III-IV** commented on events that caused them to lose trust in the healthcare system. This loss of trust often resulted in patients not believing that healthcare could help them in the future, leading them to seek alternative solutions or refrain from seeking care altogether until someone else intervened. These findings suggest that people have an intuitive sense of trust, and that this plays a significant role in their decisions regarding life and health. They also indicate that healthcare interventions aimed at saving a patient's life in one instance may inadvertently lead to the patient avoiding seeking help in the future if their level of trust in the healthcare system is too low at that time.

Participants in both interview studies highlighted that, based on their experiences, the power dynamics among professionals, patients, and relatives were imbalanced. This disparity could deepen the gap in how the costs and benefits of adversity, or the perceived failure of an intervention, are understood. From an overarching patient safety perspective, it can be argued that the greatest risk of irreversible harm lies with those who are unable or unwilling to seek help when they need it. This situation, along with the long-term monitoring of suicidality, is seldom factored into the overall risk assessment or the broader evaluation of the healthcare system.

The key elements of person-centered suicide preventive care resonate with the ethical ideas of Ricœur, Levinas, Nussbaum, Sen and Said. To be truly person-centered, care must be based on the premise that every individual possesses the potential—a capability—to care for themselves, given the right conditions of justice (Nussbaum, Sen). In suicide prevention, this can be interpreted as helping patients not only *survive* but also *thrive*, as these two objectives are deeply interconnected and dependent on one another. Survival provides the foundation for individuals to gain stability and safety to begin rebuilding their lives. At the same time, thriving—finding purpose, meaning, and a sense of mastering your own life—is essential for long-term survival, as it strengthens resilience and reduces the risk of future crises. By addressing both aspects together, in alignment with the patient safety concepts of *Safety I* and *Safety II*, suicide prevention efforts can move beyond managing immediate risks. This approach creates opportunities for individuals to regain control of their lives and achieve lasting well-being.

The provision of such healthcare requires *just institutions* that foster equity and shared goals among stakeholders (Ricœur). It is important to view person-centeredness as an ethical approach to avoid a situation where person-centeredness transforms into yet another checklist for the organization to implement and for staff to tick off. A superficial understanding of capability can lead to the marginalization of vulnerable groups, such as minorities, people with special needs or those with lower health or digital literacy, an issue previously highlighted by Desai and colleagues[304, 305].

A revised view of the caregiver-patient relationship is suggested—one in which the patient is not seen as an object of fascination, exoticization, identification through opposition (Said), or merely as a learning opportunity (Levinas), but rather as an equal partner working toward shared goals. By doing so, the premises for care are transformed. The fundamental link in the caregiving relationship is no longer the asymmetrical dynamic between the one in need and the one who is needed; instead, it acknowledges that all parties contribute from their respective positions. Using the metaphor mentioned earlier of a ship lost at sea, we are all sailors on board, each with different abilities, navigating toward an unknown continent.

Offering person-centered care in healthcare settings for suicidal patients is not the same as offering care only to those who are perceived as capable and already autonomous, but to recognize the capability within each person. Additionally, it does not mean that the balance between patients and professionals in healthcare activities is always equal but emphasizes an equity among all stakeholders. Finally, it does not endorse the dissolvement of organizational structures. Instead, it promotes designing them with user interface and user experience in mind, rather than the organization's need for statistical evaluation. We stand before each other's faces. Reducing someone to a task or a number strips them of their face. Without a face, there is no person. The essence of care has been lost (Levinas).

PRACTICAL IMPLICATIONS

Based on the findings of these studies, several clinical adjustments might be suggested. At the interpersonal level, between patients and healthcare professionals, increasing opportunities to involve patients and their families in care planning would likely enhance person-centeredness. This entails early engagement with equal emphasis on long-term planning and the development of healthcare plans for managing acute suicidal crises. However, the ability to build trust between the healthcare team and the patient does not rest solely on the goodwill and intentions of individual healthcare professionals. Instead, it requires organizations facilitating the necessary conditions for their staff to invest in these relationships.

To enable sustainable healthcare systems, a minimum level of baseline resources and continuity must be ensured, along with a well-functioning external interface and internal infrastructure—without requiring the patient to struggle to navigate or engage with these organizational structures. Practical examples include minimizing unnecessary fragmentation and reframing the role of healthcare staff from being representatives of specific functions–with either unclear or overly hierarchical authorizations and mandates–to serving as representatives of the broader healthcare system.

Finally, a strict interpretation of laws protecting privacy can sometimes impede communication, even when neither the patient nor their relatives perceive a genuine barrier to collaboration. Developing communication systems that facilitate the sharing of planning information with trusted network members, while safeguarding sensitive data, could—along with discussions among professionals on confidentiality—enhance person-centeredness and patient safety.

METHODOLOGICAL CONSIDERATIONS

This thesis is based on two quantitative studies (**Studies I & II**) and two qualitative studies (**Studies III-IV**). The choice of methods was guided by the research questions, with the aim of contributing new knowledge to the existing literature.

DESIGN OF QUANTITATIVE STUDIES (I & II)

In quantitative research, evaluating the quality of a study involves assessing several key components to ensure the reliability, validity, and generalizability of the findings.

VALIDITY

Validity relates to whether or not something truly measures what it says it measures, and thus gives a *valid* description of the world [306]. An intuitive understanding of reliability can be illustrated by considering the most suitable tool for measuring weight. An analytical balance, a thermometer, or a measuring tape would each yield somewhat different results.[306, 307]

Internal validity refers to the degree to which the study accurately measures the relationship among the variables being studied, without interference from extraneous variables or biases. It addresses whether the results of the study truly reflect the cause-and-effect relationship between two variables. Here, issues such as confounding variables, bias and blinding (if applicable) should be addressed.[306, 307]

External validity concerns the extent to which the results of a study can be generalized beyond the specific sample and context used in the research. It involves the concept of generalizability, i.e.

considering whether the findings apply to other populations, settings, or times.[306, 307]

Construct validity evaluates whether the study accurately measures the concept or variable it intends to measure. It ensures that the operational definitions of variables align with the theoretical constructs they are meant to represent.[306, 307]

Statistical conclusion validity refers to the extent to which the study's statistical analysis accurately reflects the data and supports the conclusions drawn from the results. It involves evaluating whether the correct statistical tests were used and whether the findings are due to actual relationships rather than chance or errors.[306, 307]

RELIABILITY

Reliability refers to the consistency and stability of the measurements used in a study, ensuring that repeated assessments yield consistent results. This includes both inter-rater reliability, which examines the consistency of results within the research team, and test-retest reliability, which evaluates the stability of findings when the study is repeated by a different team. Reliability also addresses whether a test or scale consistently measures the same construct over time. An intuitive understanding of reliability can be illustrated by imagining a group of children trying to measure the weight of a stone, either by placing it on a milligram scale or by holding it in one hand while attempting to compare its weight to that of a squirming rabbit held in the other.[306, 307]

Precision refers to the degree of exactness of the study's measurements and estimates. A study with high precision will yield consistent and narrow estimates of effect sizes or relationships.[306]

NETWORK ANALYSIS (STUDY I)

Network analysis is a valuable tool for visualizing interrelationships, represented by edges, among a set of variables, depicted as nodes. This method has been applied across various fields, including suicidology. Notably, Derek de Beurs and colleagues have made significant contributions to this area, examining the psychology of suicidal behavior and its critical role in the suicidal process.[308-313] The advantages of network analysis lie in its ability to analyze and visualize relationships between factors of interest. Unlike multivariate regression models, which examine the impact of independent variables on dependent variables, network analysis focuses on the interconnections among variables. Its applications are diverse, spanning social networks, biological systems, and diffusion effects. The latter is perhaps where many non-experts became familiar with network maps during the Covid-19 pandemic. Various techniques are used to highlight covariances, enabling even those unfamiliar with the field to intuitively grasp which components coexist.

A general limitation of network analysis lies in its dependence on the input data. A thorough understanding of the subject matter is essential for evaluating clinical relevance and applicability. As we only had access to the final RCA reports, we were unable to account for potential factors that might have influenced the original RCA process. To mitigate this limitation and enhance reliability, the assessment tool used to sort the data was developed by experienced RCA investigators, who regularly discussed both the protocol development and the categorization process. Finally, the interpretation of the results was approached with caution and carefully deliberated within the research team.

In **Study I**, we aimed to examine the network structure of different types of adverse events and their contributing factors to enhance our understanding of which deficiencies are commonly reported together. For this purpose, network analysis was deemed suitable. The method bears similarities to the Functional Resonance Analysis Method (FRAM)[203], a technique we have previously employed on a smaller scale for clinical quality evaluations of suicide cases (not published). Unlike FRAM, however, network analysis incorporates established methods for mathematically calculating interrelationships, enhancing the robustness and precision of the analysis.

A limitation of this study is that the dataset exclusively comprised RCAs uploaded to the NITHA database. This selection ensured a uniform structure in the reported material. However, it also meant that investigations conducted using methods other than RCA, or those not reported to NITHA, were excluded from the data collection. A less stringent definition of the inclusion criteria might have resulted in a larger dataset, thereby increasing validity. Considering the findings of Roos af Hjelmsäter et al.[259], where the identified deficiencies align with those found in our study, it is likely that we would have reached similar conclusions regarding the frequency and distribution of reported deficiencies. Nevertheless, it remains uncertain how much discrepancies in reporting structure might have influenced the results if we had opted to include a broader range of report types.

Given that the results were primarily derived from data obtained through healthcare systems and to a lesser extent from relatives or alternative sources, our study could be complemented by a network analysis of the investigative process itself. Such an approach could illuminate internal connections within the investigation workflow. Although this question lies outside the scope of our study, the development of the RCA reports and, subsequently, the RCA methodology itself serves as an example of a related issue that could be explored using network analysis.

To systematically structure the data, we developed a coding tool using an inductively derived framework. Two independent teams, consisting of two psychiatrists, one psychiatric nurse, and one psychologist, tested the protocol through multiple iterations. Regular meetings allowed for discussion and refinement, ensuring that emerging themes and subthemes were consistently identified. To improve reliability, external reviewers assessed the tool, leading to further adjustments to cover all aspects of the RCAs. Each revision prompted a re-evaluation of previously analyzed cases. The final version was applied to all 217 cases, with a thorough cross-check confirming no discrepancies in the dataset.

To evaluate network structure, we assessed the centrality indices node strength and edge strength. Node strength represents the cumulative weight of a node's connections, while edge strength in a regularized network captures the direct association between two nodes, accounting for indirect influences from others. Although closeness, betweenness, and Expected Influence (EI) were initially examined, they were ultimately excluded. Closeness and betweenness had correlations stability coefficients below the acceptable threshold, and EI did not offer any additional interpretative value beyond what node strength already provided.

NON-RANDOMIZED CASE-CONTROL DESIGN OF STUDY II

Our objective in **Study II** was to compare healthcare utilization among patients exhibiting varying levels of suicidal behavior who had contact with psychiatric services at a hospital. Due to our strategic approach to include all registered suicide cases, stratified randomization across all groups was not feasible. Instead, we employed a naturalistic design, conducting between-group comparisons using cases and matched controls.

The decision to limit data collection to a single hospital, and the selection of this specific hospital, was made to ensure better monitoring of potential organizational changes that might have affected outcomes. For instance, in 2014, some of the units underwent a major reorganization that led to shifts in patient flow. This consideration prompted the decision to include data starting from 2015. An alternative data source could have been the national cause of death registry, supplemented with data on healthcare interventions from all healthcare providers with whom each individual had been in contact. While this approach would have provided more comprehensive data, particularly regarding individuals who died by suicide, it would also have been considerably more extensive and time-consuming—limitations that could not be accommodated within the scope of our project.

The matching procedure, Coarsened Exact Matching (CEM), was used to construct the three cohorts. The control cohorts were designed to reflect the proportions of the original populations (266 for Control Group 1 and 124,364 for Control Group 2). Due to the limited number of registered surviving patients with suicide attempts, the matched cohort also remained small—72 individuals. It is likely that the previously mentioned age paradox influenced the matching outcomes in this cohort.

For Control Group 2, which included individuals without registered suicide attempts, the matching process generated multiple controls per case to maintain proportions representative of the original population. An attempt to underrepresent individuals from the youngest age groups resulted in an uneven distribution of residential areas, which could have introduced bias regarding specific healthcare activities (e.g., care for out-of-county patients or detoxification services for individuals without permanent addresses). To avoid biased results, Control Group 2 was retained according to the original matching outcome.

As no prior data were available to support our power calculation, a post-hoc, ANOVA-based analysis was conducted to evaluate the power of statistical tests for different effect sizes. Preferably, this should had been done in advance, which could have been used to determine the number needed in each cohort with better precision.

Since healthcare visits are coded at the time of the visit, this was considered a more reliable measure of healthcare activities performed than a retrospective review of patient records. However, there remains a risk that healthcare activities that are either not documented or coded incorrectly may introduce errors into the results. Additionally, our study lacks data that could have partially provided insight into the quality of care delivered, such as information on the names of healthcare providers, which would have enabled tracking continuity between the same provider and patient. Furthermore, certain control factors, such as income and education level, are missing, which could have contributed valuable information to the analysis.

DESIGN OF QUALITATIVE STUDIES (III-IV)

In qualitative research, trustworthiness refers to the credibility of a study's findings, ensuring that the research is conducted with rigor and that the conclusions drawn accurately reflect participants' perspectives. Trustworthiness is typically evaluated through four key criteria credibility, transferability, dependability, and confirmability, which help assess how well the study was designed, conducted, and interpreted.[314] **Studies III-IV** share many similarities regarding how trustworthiness was achieved. The interviews and data analyses were planned and carried out following the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist, which considered factors such as the relationship between the research team and participants, theoretical framework, recruitment, setting, data collection, analysis, and reporting.[315]

CREDIBILITY

Credibility refers to the confidence in the truth of the findings, similar to internal validity in quantitative research.[306] To enhance credibility, the interview studies were co-produced with members of non-governmental organizations in the mental health field. Individuals with personal experience of suicidal behavior and a suicide helpline responder were included in the analysis process. Additionally, peer debriefing—engaging with colleagues for feedback—was utilized throughout all phases of data collection, preparation, and analysis. These strategies ensured that the data accurately represent the participants' perspectives.

TRANSFERABILITY

Transferability pertains to the extent to which the study's findings can be applied to other contexts or groups, similar to external validity in quantitative research.[306] To enhance transferability, we sought to include participants from a range of healthcare settings and to provide detailed descriptions of the participants' relevant circumstances. With broad coverage across Sweden's regions and representation of both urban and rural perspectives, the study offers satisfactory transferability to other settings with healthcare systems similar to Sweden's.

While we strived to capture narratives from diverse backgrounds, the sample was relatively homogeneous, with most participants being born in Sweden, having Swedish as their first language, and appearing familiar with the Swedish healthcare system. This is reflected in the results, which do not provide a detailed account of the experiences of any subgroups. Additionally, women were overrepresented in both studies, which may limit the applicability of the findings to male contexts. Furthermore, the lack of older adults, particularly in **Study III**, means the studies does not capture perspectives of older adults with suicidal behavior, and the results may therefore not be applicable to them.

DEPENDABILITY

Dependability focuses on the consistency of findings over time and under similar conditions, akin to reliability in quantitative research.[306] This allows others to trace the research process and assess whether the findings are consistent and reproducible. Throughout data management, we enhanced dependability by maintaining a clear audit trail, documenting decisions made throughout the research process, and providing detailed descriptions of methodology, data collection, and analysis processes.

CONFIRMABILITY

Confirmability refers to the extent to which findings are shaped by participants rather than researcher biases or assumptions, comparable to objectivity in quantitative research.[314] To ensure confirmability, we identified and attempted to limit potential biases and influences on the research, documented decisions and interpretations, and engaged in discussions to cross-check and validate findings. One limitation is that both studies were conducted simultaneously. While this occasionally proved beneficial by deepening the understanding of the topics discussed by the participants, it also heightened the risk of confirmation bias, as MR (**III-IV**) and LA (**IV**) were involved in both the interview and analysis phases. To mitigate the risk of cross-contamination of information among the studies, the research team carefully discussed all potential interpretations of the collected narratives and adhered strictly to preserving the context of each narrative as faithfully as possible.

CONCLUSIONS

This thesis contributes to healthcare science by providing insights into co-existing service-related factors in suicide cases and mental healthcare provision for individuals across varying levels of suicidal risk. It also highlights patient and relative perspectives to identify key elements and prerequisites for person-centered care in this population.

The findings suggest that managing suicidal behavior in healthcare requires both long-term and acute interventions (**II-IV**). Individuals with suicidality seem to need more comprehensive healthcare than those without such issues. Additionally, care appears to be more often provided to individuals who survive suicide attempts compared to those who die by suicide. From a different perspective, this suggests that patients who visit healthcare services frequently may also experience suicidal issues, indicating an increased need for screening for suicidal ideation within this group (**II**). Altogether, this underscores the critical importance of suicide preventive interventions while also revealing gaps in identifying and supporting all at-risk patients.

Service-related deficiencies noted in post-suicide investigations include missed appointments, suboptimal communication, and organizational instability (**I**). Although RCA – the gold standard methodology for suicide investigations aims to include patient and relative perspectives[316, 317], **Study I** reveals that this is rarely achieved. Alternative approaches, such as involving people with lived experiences in the evaluation of care, are advised in order to fully address their needs.

Patient-reported experiences highlight a disconnect between provided care and what fosters long-term safety (**III**). Assessments often focus on immediate symptoms, creating a perception that care begins only at the point of hospitalization, despite patients believing that earlier self-care interventions could be beneficial. Relatives stress the importance of early, long-term interventions that establish collaboration with trusted individuals in the patient's support network (**IV**). Sole reliance on acute care decreases patient involvement and risks eroding trust, emphasizing the need to build relationships early and base care on the patient's experiences and goals.

Together, these studies advance understanding of person-centered care for patients with suicidal behavior, with the potential to enhance patient safety, improve self-care, and optimize resources for a vulnerable population facing significant suffering, frequent healthcare contact, and elevated mortality compared to the general population.

FUTURE DIRECTIONS

The findings of this thesis highlight the need for studies that provide a more detailed understanding of how to enhance person-centered suicide preventive care for specific subgroups of patients, such as older adults, children and adolescents, cultural minorities, individuals whose first language is not Swedish, members of the LGBTQ community, and people with mobility disabilities. Expanding the sample size could offer deeper insights into healthcare utilization and needs across various settings and geographical areas, with particular focus on differences between rural and urban regions.

Collecting clinical data on the volatility of mental healthcare visits (as observed in **Study II**) could provide greater insight into patterns of help-seeking behavior during suicidal crises. This, in turn, could pave the way for the development of a real-time, data-driven tool to complement safety plans and safeguard patients during phases of intense suicidality. Similarly, applying network analysis to develop and test a life-chart instrument could yield new insights into early suicidal warning signs and critical nodes in the surrounding network structures.

Finally, further research is needed to explore the concept of trust in healthcare settings. This includes engaging patients, relatives, and professionals in investigating the phenomenology of trust, as well as defining and testing appropriate outcome measures for future evaluations.

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Göteborg 28 mars, 2025

EPILOGUE – ABOUT THE COVER ILLUSTRATION

The cover illustration is made by Malin Rex and Seongja Jeong (정성자). In Korea, the crane represents health and a long life. A thousand folded paper cranes are sometimes given as a gift to someone who is ill, as a token of the giver's love and prayers for a swift recovery. The text is an excerpt from The White Book by 2024 Nobel laureate Han Kang. The book is a meditation on life in the presence of death, written from a woman to her 언니 (onni, older sister), who died as an infant. The English translation, by Deborah Smith, reads:

"All whiteness

With your eyes, I will see the deepest, most dazzling place within a white cabbage, the precious young petals concealed at its heart.

With your eyes, I will see the chill of the half-moon risen in the day.

At some point those eyes will see a glacier. They will look up at that enormous mass of ice and see something sacred, unsullied by life.

They will see inside the silence of the white birch forest. Inside the stillness of the window where the winter sun seeps in. Inside those shining grains of dust, swaying along the shafts of light which slant onto the ceiling.

Within that white, all of those white things, I will breathe in the final breath you released." [318]

In Sweden, cranes are celebrated as one of the first signs of spring. They are also the symbolic animal of Västergötland, the province where the University of Gothenburg is located. Here, winters are long and gray, and the ground remains deeply frozen, preventing anything from sprouting. Some hundred years ago, many looked toward the treacherous Kattegat and Skagerrak, which served as both a garden and, for many, their grave. Even today, the proximity to the sea brings a freezing humidity. It lies far enough north to experience darkness from October to February, yet not far enough north to enjoy the Nordic light. Thus, the return of the majestic cranes, with their characteristic dance and trumpeting calls, is welcomed with great relief. Winter is over.

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APPENDIX

SUPPLEMENT A. ETHICAL PROTOCOL, STUDIES III-IV

Preparation phase

Thorough preparation of inclusion criteria.

Careful consideration of interview scheduling by allowing participants to propose available dates.

Detailed planning ahead of scheduled interviews to ensure at least one hour before and after each session to address any potential questions.

The number of participants in focus groups will be limited to between three and six to enhance participant privacy.

Establishment of a database for organizing and administratively managing communication and contact information.

Recruitment phase

Recruitment materials will be distributed through contact persons within relevant networks.

The research team will be available to answer any questions after the recruitment materials have been sent out.

The research team will emphasize the voluntary nature of participation, including the possibility to decline or withdraw at any time. No follow-up contact will be made with individuals who decline participation.

Only individuals who have provided written informed consent will be included.

Participation phase

The interview will begin with a clarification that participation can be discontinued at any time without providing a reason.

In-depth interviews will only involve the interviewer and the participant. The same interviewer (a specialist nurse in psychiatric nursing) will conduct all interviews.

In focus group interviews, two interviewers may be present: one responsible for leading the discussion and the other for managing speaking time and moderating the conversation. Both interviewers will be qualified to assess participants' mental well-being.

The interviewer will be available to answer questions and provide support to participants before, during, and after the interview.

The research team will be able to assist in contacting healthcare services if any needs arise.