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IMPACT OF THE COVID-19 PANDEMIC ON SUICIDE ATTEMPT REPORTING WORLDWIDE-ANALYSIS OF PUBLIC DATA

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ABSTRACT

The review examined how the COVID-19 pandemic affected reporting of suicide attempts worldwide, using publicly available epidemiological, administrative, and surveillance data. We integrated findings from systematic reviews and meta-analyses, national time series from European Union (EU) and the Organisation for Economic Co-operation and Development (OECD) countries, World Health Organization (WHO) mortality statistics, and country-level registries, with particular attention to Central-Eastern Europe. Data sources included health care utilization records, emergency department presentations, police and administrative databases, and real-time or near-real-time suicide surveillance systems where available.

Across high-income settings, early pandemic phases were characterized by stable or reduced recorded suicide mortality, despite consistent increases in suicide attempts and suicidal ideation, especially among adolescents and young adults, and disproportionately among females. As restrictions eased and health care access resumed, rates of reported suicide attempts rose, revealing substantial latent distress that had been partially obscured by barriers to care and underreporting. Central-Eastern European countries, including Poland, deviated from Western European patterns, showing more pronounced increases in attempts among youth and women and less marked declines in suicide deaths. Persistent under-ascertainment, heterogeneous definitions and fragmented reporting between health, police, and forensic systems limited comparability and likely led to systematic underestimation, particularly in women and in low- and middle-income countries.

Strengthening suicide surveillance requires standardized case definitions, integration of health, police and social data in near real time, systematic disaggregation by key sociodemographic groups, and explicit coverage of non-fatal suicidal behavior. These improvements are essential to guide targeted prevention for high-risk populations during and beyond future public health crises.

KEYWORDS

COVID-19 Pandemic, Suicide, Suicide Attempts, Suicide Attempt Reporting, Mental Health Surveillance

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Introduction

The COVID-19 pandemic strongly affected mental health around the world. We saw more anxiety and depression in many people. The main reasons for this were social isolation, financial problems, and changes in daily life. [1][2]

It is very important to report suicide attempts. They are a major risk factor for future suicide attempts and serve as an early warning sign of acute mental health crises at the population level.[3][4] Monitoring these attempts helps public health officials act quickly and find high-risk groups.[4][5]

Recent systematic reviews and meta-analyses show that suicide attempts increased during the pandemic. However, suicide death rates remained stable or decreased in many regions.[6][7][8][9][10]

These results show that although suicide rates did not increase globally, psychological distress and risky behaviors worsened. This affected both the general population and patients with mental disordes.[6][7][8]

The main risk factors for suicide attempts were social isolation, quarantine, financial problems and domestic violence.[8][11] The most vulnerable groups were young adults, women, and minorities.[2][5][7]

Reporting suicide attempts provides crucial data on the population's mental health. It helps identify groups that need immediate help. Continuous monitoring is necessary to plan effective prevention strategies.[4][5][6][7][8]

Theoretical Background and Definitions

A suicide attempt is a non-fatal act where an individual intends to end their life. This behavior may or may not cause physical injury.[5][7] Reporting involves registering these events in medical or police databases. This process in necessary to monitor public health trends and plan interventions.[8][12]

Risk factors are conditions that increase the chance of suicide attempt. The most common include mental disorders, a history of previous attempts, isolation, financial problems, and anxiety.[12][13][14][15[16] During the pandemic, mental health worsened due to three main causes: isolation, fear, and economic crisis. Quarantines and social distancing led to loneliness, which directly increased suicidal thoughts.[12][15][16][17] Anxiety about the virus increased psychological stress.[15][16]Futhermore, unemployment and loss of income created financial pressure, which is a known cause of suicide risk.[5][14][18]

There is a distinct difference between actual and reported suicide attempts. Actual attempts cover all events that fit the medical definition. Reported attempts are only those found in medical records or surveillance systems. This gap is caused by underreporting. It happens due to stigma, lack of access to hospitals, and fear of infection during the pandemic. As a result, official statistics do not show the true number of cases.[5][12] Therefore, improving data collection and reducing stigma is necessary to correctly assess suicide risk.

Characteristics of the COVID-19 pandemic

Pandemic restrictions changed in phases. Initially, most countries introduced strict stay-at-home orders.

Later, these rules were relaxed. However, many regions had to bring back restrictions when the number of infections increased again. These policies differed significantly between countries. Some governments applied strict containment immediately, while others used flexible strategies or reacted only to rising cases.[19][20]

Lockdowns limited access to mental health care. In the early phase, psychiatric clinics and support services were often closed or reduced. As a result, telepsychiatry and digital tools replaced face-to-face visits. However, many patients faced barriers, such as a lack of internet access or private space. This situation worsened the treatment gap for vulnerable groups.[21][22][23]

Utilization patterns diverged sharply by region. While heightened distress drove surges in facility usage in some areas, other datasets show a counterintuitive drop in presentations for self-harm and suicide attempts.

This is an artifact of access, not epidemiology. The decline likely masks true incidence rates, driven by barriers to care and suppressed help-seeking behavior.[21][22][24][25}

Public discourse on suicidality shifted abruptly during the COVID-19 lockdowns. Initial news cycles favored sensationalist speculation, These reports frequently predicted a sharp rise in fatalities despite real-time data showing stable or even declining rates across several nations.[5][26][27][28] Data diverged from the headlines.

Yet, reporting matured as restrictions eased, eventually prioritizing academic evidence over conjecture.[26] Social narrative focused heavily on entrapment and the psychological burden on youth.[7][26] These frameworks likely dictated public perception and modified help-seeking behaviors. Although lockdowns directly restricted clinical access, media narratives often amplified a sense of crisis that remained unsupported by the broader epidemiological data.[5][21][22][24][26]

Suicide Attempt Trends

Documented suicide attempts climbed globally between 2019 and 2023. Regional, age-related, and sex-based variations defined the trajectory. Within the United States, emergency department presentations for intentional self-harm escalated from 1.43 million in 2011-2012 to 5.37 million by 2019-2020.This represents an average annual increase of 19.5%(95% Cl:16.9-22.2).[29]

These figures signal a mounting clinical burden. Adults aged 65 and older exhibited the most acute acceleration, with an average annual percent change of 30.2%(95% Cl:28.5-32.0). While adolescents and young adults continue to contribute the highest absolute volume of cases, the rapid escalation in the geriatric population requires immediate attention. The demographic landscape of the crisis is shifting.[29]

Global suicide mortality fell from 14.9 per 100,000 in 1990 to 9.0 in 2021. The Americans defy this trend. Young adults and females in the US have driven a 1.5% annual increase in suicide attempts since 2000, signaling a sustained upward trajectory.[4][7][30][31][32] Southeast Iranian data reveal a far more aggressive spike; attempts among young adults(19-34 years) rose 9.8-fold, yet female attempts surged 28.2-fold.[33] This shift represents a severe post-pandemic psychiatric crisis. Polish registries mirror this volatility, as 2021 attempt rates for the 7-24 and 25-65-age cohorts far exceeded 2019-2020 levels.[34 Women remain the primary

demographic driving these increases.[34] Spanish emergency registries show suicide-related calls surged among females across nearly all age brackets, notably peaking during summer months.[35] US trends reflect similar pressure. Over the last decade, the adjusted odds ratio for female suicide attempts rose to 1.33(95% Cl: 1.09-1.62).[4] Among 18-25-years-olds, this ratio hit 1.81(95%Cl 1.52-2.16), representing a far more aggressive escalation.[4]Disparities remain stark. While females-primarily adolescents-exhibit consistently higher attempt rates, males account for the vast majority of deaths. Male preference for more lethal methods largely explains this mortality gap.[4][30][32][33][34][35][36]

United States youth aged 20-24 years face mortality rates of 29.0 per 100,000, nearly five times the 6.1 per 100,000 recorded in Italy.[32] Global geographic gaps remain massive.

While Eastern Europe and sub-Saharan Africa report the highest age-standardized siucide mortality, Southern Europe and select Asian nations maintain the lowest rates.[30][32][37][38] Persistent measurement challenges complicate analysis. Pervasive under-reporting and misclassification continue to compromise data integrity across several regions, often obscuring the true scale of the crisis.[12][30][38] These systemic inaccuracies hinder effective global comparisons.

System-Level Factors in Reporting

United States nondisclosure rates for suicidal ideation reach 48%.[40] Patients frequently conceal their intent to avoid stigma, social fallout, or negative internal experiences.[39][40] While the attempt rate climbs, the delivery of timely mental health services remains stagnant. Uninsured and marginalized groups face the most significant barriers. Emergency department shortages, worsened by socioeconomic disadvantage and lack of insurance coverage, further separate these populations from formal psychiatric support.[4] Fear of clinical overreaction remains a strong barrier.[40] Systemic failures effectively silence those in crisis.

Barriers rotted in the emotional and cognitive functioning of families and social networks often hinder the recognition of and response to suicidal distress, because relatives and peers may find it difficult to interpret subtle or vague warning signs and may feel unprepared to intervene, which in turn leads to lost chances for timely help and support.[41] Schools play key role in suicide prevention, as school belonging and targeted interventions have demonstrated protective effects against suicide attempts, particularly among adolescents and sexual minority youth.[42][43] The American Academy of Pediatrics recommends evidence-based schoop programs such as Signs of Suicide and Sources of Strength, which have been shown in randomized controlled trials to reduce suicide attemps by enhancing recognition, peer support, and referral pathways.[43]Families serve as both protective risk-modifying agents; supportive family environments reduce suicide risk, while negative dynamics, abuse, or neglect increase vulnerability.[42]

High-Risk Groups Analysis

Children and teenagers were disproportionately affected during the pandemic, with suspected suicide attempts by self-poisoning among US youth aged 10-19 years increasing by 30% in 2021 compared to 2019, and rates among females aged 10-12 years rising by 73%.[44] Emergency department visits for suspected suicide attempts among girls aged 12-17 years were approximately 50.6% higher in ealry 2021 than during the same months in 2019, this suggests that pandemic isolation and the switch away from normal, face-to-face school had an immediate negative impact on suicidal behavior in teenagers.[36][45] Meta-analytic data indicates that both suicide attempts and suicidal ideatoin rose among young people worldwide, with the highest vulnerability observed in girls and in youth affected by interruptions in schooling and mental health service supply.[6][7][46]

Older adults also experienced increased risk, with a 5-year observational study from a rural region in Germany documenting a rise in suicide attempts among individuals aged 55 years and older as the pandemic progressed, a pattern probably linked to more social isolation and reduced availability of medical care.[47] In France, general-practice monitoring found that suicide attempts during the pandemic were disproportionately common among both younger and older people, indicating that pandemic-related stressors and reduced access to care likely intensified age-linked risk.[48]

People with a prior mental health history were especially vulnerable, as pandemic-related pressures led many to delay or avoid both routine check-ups and urgent medical care in the United States, 40.9% of adults reported postponing or avoiding medical care because of COVID-19 concerns, with high rates among those with worse overall health and chronic medical conditons.[49] Systematic reviews and meta-analyses suggest that, during the pandemic, suicide attemps were more frequant in some patient groups, which shows why physicians should actively look for risk and offer help early.[8][12]

Fear of SARS-CoV-2 exposure kept many patients away from clinics and emergency departments, even when symptoms escalated. Service interruptions such as canceled appointments, reduced face-to-face contact, longer wait times were all common. Socioeconomic inequalities including limited transport, unstable work, digital exclusion, and crowded housing all made timely access harder. Those were key factors increasing risk among children and teens, older adults, and people with existing mental health problems during the pandemic.[8][12][49][50]

Comparison of Poland with other countries

European Union and OECD data indicates that suicide attempts and mental health symptoms increased during the COVID-19 pandemic, although the effect varied substantially across regions and demographic groups. Meta-analyses and systematic reviews show that suicide ideation and attemps rose in both clinical and non-clinical populations, however many Wester European countries reported stable or declined suicide rates in the initial pandemic phase, likely due to increased social cohesion and economics support policies.[6][7][21] Post-pandemic trends appear less favorable, with rising suicide rates and attempts, particularly among young people and women.[27][34][54] Central-Eastern European countries, including Poland, did not follow Western European trajectory. While Western countries such as German and the Nordics saw stable or declining suicide rates during lockdowns, Central-Eastern Europe reported increases in suicide attemps, especially among youth and women, and a less pronounced decline in completed suicides instead.[27][34][54][55] Socioeconomic strain, limited access to mental health care and weaker welfare support likely shaped these regional differences.[5][7][21] In Poland, police records and National Health Fund datasets show an increase in suicide attempts among people aged 7-24 and 25-65 years during the COVID-19 pandemic. The same sources also indicate higher suicide mortality among women, spanning all age groups.[34][55][56]

Mental health problems were common during the pandemic: many adults reported symptoms of depression, anxiety, and sleep disturbance, in some studies affecting up to 70% of respondents.[55][57] In Poland suicide surveillance depends mainly on police and administrative sources, which underestimates true rates due to methodological limitations, stigma, and inconsistent classification of suicide methods, particularly among women and those using non-violent methods.[34][58][59] The sensitivity of suicide certification is lower for females, and deaths of undetermined intent are often misclassified, leading to significant undercounting.[58][59] Lack of real-time, standardized surveillance and integration of health, forensic, and social data further limits accurate monitoring and cross-national compariosons.[1][5][58[60] Poland and the broader Central-Eastern European region need stronger suicide surveillance standardized, harmonized across systems and prevention approaches that target the highest-risk groups. Better data would likely result in better targeting.

Limitations of research and data interpretation

Suicide attempts are undercounted for several reasons. Reliance on Health-care datasets only capture episodes that reach clinical attention, so events managed at home or outside formal care never enter the record. During COVID-19, fear of infection and tighter service access likely reduced presentations for self-harm to emergency and outpatient settings; however, that drop in attendances does not necessarily reflect a true fall in self-harm in the community.[4][5][51] The World Health Organization reports more than 700,000 suicide deaths each year, yet under-recording likely pushes the true figure higher. Meta-analyses suggest roughly 17.9 % of suicides are not captured, with wide differences between countries because data quality varies. On that basis, the true annual toll may exceed one million deaths rather than the commonly cited 727,000.[5][51] Underreporting is substantially higher in low- and middle-income countries(34.9% compared to 11.5% in high-income countries).[52] Methodological limitations amplify the uncertainty. Study designs vary widely, and many reports rely on cross-sectional analyses without robust pre-pandemic baselines, which weakens causal inference. Pooled estimates differ substantially by population characteristics and study design, with meta-analyses showing increased suicide attempts among both non-clinical (prevalence ratio 1.14) and clinical populations (prevalence ratio 1.32), while deaths by suicide showed a nonsignificant downward trend (rate ratio 0.923), creating apparent contradictions that complicate interpretation.[6] Studies also excluded homeless and incarcerated populations with high suicidal behavior rates, potentially underestimating true prevalence.[4] Suicide surveillance suffers from a basic comparability problem: countries use different definitions, workflows, and data sources, so estimates rarely line up cleanly. Most regions still lack systems that deliver timely, near-real-time counts, which slows detection of shifts in risk. Gaps widen in low- and middle-income countries, where registration infrastructure remains uneven and underreporting runs higher.[5][52][53] Multiple factors contribute to

inconsistent reporting: stigma around mental health, religious norms, legal implications, limited forensic resources. Classification thresholds also differ between systems.[52] Ascertainment methods vary widely, some studies rely on self-reports, others on administrative databases with inconsistent ICD coding practices, and others on single survey items that may mix diverse behaviors including: interrupted, aborted, and varying lethality attempts under one label.[3][4][51][53] These limitations collectively demand cautious interpretation of pandemic-era trends. Real-time surveillance needs an upgrade together with standardized case definitions, consistent reporting, and routine disaggregation by age, sex, ethnicity/minority status, and time period.

Conclusions and Recommendations

The COVID-19 pandemic led to a temporary decrease or stabilization in suicide reporting rates across most European Union and OECD countries during the initial lockdowns, followed by an increase in suicide attempts and reporting rates, particularly among youth and women, as restrictions eased and the pandemic progressed.[6][7][8][61][62][63] This pattern is supported by meta-anlysses and national surveillance data. During the early pandemic, suicide deaths did not increase significantly. However, suicide attempts and suicidal ideation did rise. Later, as healthcare access resumed and social stressors accumulated, reporting rates increased accordingly.[6][7][61][63] Significant regional heterogeneity exists within this overall trend. Central-Eastern European countries, including Poland, experienced distinct patterns compared to Western Europe, with more pronounced increases in suicide attempt among young and women and less marked declines in completed suicides. Poland's police and health fund data document rises in attempts among those aged 7-24 and 25-65 years, increases in suicides among women across all age groups, and mental health symptom prevalence reaching up to 70% of adults. These differences reflect greater socioeconomic stressors, limited mental health service access, and less robust welfare systems in Central-Eastern Europe.

Current reporting infrastructures across the EU and OECD suffer from a fatal flaw: the lack of real-time integration between health, police, and social data sources.[8][53][62] Poland illustrates the severity of this disconnect. Reliance on police and administrative data there systematically masks true mortality rates, driven by the misclassification of deaths of undetermined intent and low sensitivity in certifying female suicides.[1][5][34][58][59] To counter these deficits, the Data and Surveillance Task Force of the National Action Alliance for Suicide Prevention demands standardized definitions and the expansion of data collection to previously invisible subgroups.[53] Scandinavia offers a viable alternative. By leveraging real-time monitoring, these systems enable the immediate detection of trends rather than retrospective analysis.[8][62] Operationalizing this success elsewhere requires specific policy shifts: establishing integrated surveillance systems, adopting standardized reporting protocols, and extending oversight to nonfatal behaviors. Digital tools for early detection require investment. Simultaneously, funding must prioritize mental health services for vulnerable populations, including youth and those in precarious employment. [6][7][8][53][62] For Poland and Central-Eastern Europe, harmonized surveillance is not an academic exercise—it is a prerequisite for effective prevention tailored to local socioeconomic realities. As surveillance infrastructure develops, universal interventions must expand. Means restriction, community-based programs, and school-based promotion reduce mortality and warrant immediate scaling across the OECD.

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