Serial murder in medical clinics and care homes

Serientötungen in Kliniken und Heimen

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Key words
healthcare serial killers, patient homicide, serial murder, killing without explicit request

Schlüsselwörter
Serientötungen, Patiententötungen, Krankentötungen, Tötungen ohne explizite Willensäußerung

Bibliografie
Dtsch Med Wochenschr 2022; 147: e91–e101
DOI 10.1055/a-1899-7344
ISSN 0012-0472

Georg Thieme Verlag KG, Rüdigerstraße 14,
70469 Stuttgart, Germany

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Deutsche Version unter:
https://doi.org/10.1055/a-1899-7344

ABSTRACT

Background Serial murder in clinics and care homes have gained attention more than once in recent years. The strong yet quickly fading public outrage has not yet led to well-founded professional and health-political engagement with the topic. With few systematic studies conducted, knowledge about perpetrator-related and environment-related risk factors in the day-to-day context of healthcare is sparse.

Methods Court cases of serial murder in clinics and care homes in Germany, Austria, and Switzerland that were concluded with a final verdict by February 2022 were investigated. Research materials consisted of court documents and observations made during the trials. The cases were evaluated with regard to the victims, crime scenes, methods of killing, perpetrators, and perpetrator motives. 12 serial murders involving 17 perpetrators were included in this study.

Results Perpetrator-specific early warning signs included a pronounced insecurity in combination with a striving for prestige and power, which were accompanied by a loss of empathy. Reactions of the colleagues and supervisors of the perpetrators in the immediate professional environment included misjudgement, concern about one's own disadvantages, feared damage to the reputation of the institution, and insufficient willingness to clarify the situation. As a result, many initial murders went unsuspected and unreported so that the frequency of the criminal activity and the number of victims increased over time.

Conclusion More information about serial murder in clinics and care homes is necessary. Research efforts are needed to better assess the prevalence of such crimes and to develop appropriate preventive measures. Circumstances that enable such acts, risk factors, perpetrator profiles, and early-stage countermeasures must be comprehensively addressed in the context of education, training and further education.

ZUSAMMENFASSUNG

Hintergrund Tötungsserien in Kliniken und Heimen sind in den vergangenen Jahren mehrfach bekannt geworden. Die regelmäßig überbordende und rasch verebbende öffentliche Empörung hat bisher nicht zu einer fundierten fachlichen und gesundheitspolitischen Beschäftigung mit dem Thema geführt. Systematische Untersuchungen sind kaum vorhanden, sodass die Kenntnisse über Täter- und umgebungsbezogene Risikofaktoren im Versorgungsalltag spärlich sind.

Methode Die bis Februar 2022 in Deutschland, Österreich und der Schweiz mit einem rechtskräftigen Urteil abgeschlossenen Tötungsserien in Kliniken und Heimen wurden untersucht. Als Material standen Gerichtsunterlagen und eigene Prozessbeobachtungen zur Verfügung, die im Hinblick auf Opfer, Tatorte, Tötungsarten, Täter und ihre Motive ausgewertet wurden. Eingeschlossen sind 12 Tötungsserien mit 17 Täter*innen.

Ergebnis Täterspezifische Frühwarnzeichen sind eine ausgeprägte Selbstunsicherheit in Kombination mit Geltungs- und Machtstreben, die mit einem Empathie-Verlust einhergehen. Die Reaktionen im direkten beruflichen Umfeld sind gekennzeichnet durch Fehleinschätzungen, Sorge um eigene Nach-

teile, befürchtete Imageschäden der Einrichtung und einen unzureichenden Aufklärungswillen. Auf diese Weise werden Tatzeiträume und Opferzahlen erhöht.

Schlussfolgerung Über Tötungsserien in Kliniken und Heimen muss verstärkt aufgeklärt werden. Forschungsanstrengungen sind erforderlich, um die tatsächliche Häufigkeit derartiger Straftaten besser einschätzen zu können und angemessene präventive Maßnahmen zu entwickeln. Begünstigende Umstände, Risikofaktoren, Täterprofile und frühzeitig wirksame Gegenmaßnahmen müssen im Rahmen von Aus-, Fort- und Weiterbildungen flächendeckend thematisiert werden.

Introduction

Series of killings in clinics and care homes have come to light in court several times in recent years[1] The trials have led to significant findings that may help in preventing such crimes. The prerequisites for results that go beyond individual cases are secure data, known facts, and consideration of the general conditions. Early identification of colleagues at risk for committing such crimes is crucial for patient safety. Yet, the trials showed that rapid detection was often hampered by the fact that colleagues and superiors – misjudging the realities – considered such acts to be impossible in their own institutions. It is therefore necessary to take a close look at the previous series of killings.

In clinics and care homes, the crimes are committed – unlike as in home care or outpatient settings – in the presence of colleagues or jointly conducted with the assistance of colleagues [2, 3]. Moreover, these are places where dying and death are common and such crimes are not expected to occur. Given this, it is therefore necessary to take a closer look at the serial killings to date.

In the German-speaking legal area, 12 serial murders with a total of 17 perpetrators have been legally processed. ▶ **Table 1** provides an overview. Worldwide, 57 similar serial murders have been documented: 19 in Europe, 18 in the USA and South America, 4 in Japan, 3 in Australia, and 1 in Canada [4–9].

Methods

This study was limited to serial murders in which 2 or more unlawful killings of adult persons were committed in a clinic or care home by the same healthcare worker. Only cases of serial murders in the German-speaking area in which legal proceedings were completed by February 2022 were considered.

The sequence of events, the execution of the crime, and the legal processing of such crimes differ considerably in different countries and continents, so that only serial murders from Germany, Austria, and Switzerland (the German-speaking legal sphere) were included in this study. The evaluations were based on the written anonymized verdicts and observations of certain trials made by the author of this article. Serial killings were excluded in cases where the crime scenes were located outside of clinics or care homes, if the victims were children or adolescents, or if the criminal proceedings had not yet been concluded.

In this research, the anonymized grounds of judgement were evaluated. Victims, crime scenes, crime timeframes, types of murder, perpetrators, and the motives of the perpetrators were examined. The names of the perpetrators were anonymized.

From this analysis, person-related and crime scene-specific early warning signs and red flags were identified, which could contribute to minimizing the risk of recurrence.

Victim

There were 205 confirmed homicide victims in the 12 serial murder cases in Germany, Austria and Switzerland. The youngest victim was 31 years and the oldest was 96 years in age (▶ **Table 2**).

Among the victims, 40 were care home residents and 165 were hospital patients. 90 were women and 115 were men. The number of victims per case ranged from 2 to 87. In 59 accused homicides, the perpetrators could not be definitively proven (▶ **Table 3**). Given this, the actual number of victims was probably considerably higher. For one, the definitive determination of the causes of death was considerably hindered by long periods of time between crimes and a delay in investigation. For another, the memory of former colleagues and superiors was fragmented [10]. In the case of Mr T (case 11), over 130 patients who had died under his care were cremated, so that a toxicological analysis could no longer be carried out.

34 victims were killed on the day of their admission while 61 victims were killed during the first 5 days of their stay in the hospital or care home. Only in a few cases were the victims in an irreversible dying process. Some were on the road to recovery and were even to be discharged. The time of death was almost always surprising for nurses and doctors and the cause of death was very often not plausible. In many cases, the pattern of the clinical course just before death occurred was similar among victims. 32 victims had 2 or less diagnoses at the time of their premature death and could therefore not be considered multimorbid.

Although there was no characteristic present among all victims, most had multiple illnesses and were of advanced age.

The killings were almost never requested by the victim themselves. In 3 of the 206 proven killings, there was a conviction for killing by the request of the victim (cases 3, 7, 8) (▶ **Table 4**). It is unknown whether any efforts were made by the perpetrators to inquire about the will of their victims.

Crime Scenes

1 serial murder was committed in Austria (case 4), 1 in Switzerland (case 6), and 10 in Germany. In 2 cases (1 and 6), both care homes and clinics were the scene of the crimes. In 3 cases, crimes occurred only in care homes and in 7 cases crimes occurred only in clinics. 4 homicides were committed in intensive care units (ICU) and 3 in peripheral hospital wards (▶ **Table 1**).

▶ **Table 1** Overview. Names anonymised. Age at the time of arrest [24–37].
Legend: DE = Germany, CH = Switzerland, AUT = Austria, ICU = Intensive Care Unit

	Perpetrator	Country	Year of Verdict	Crime Scene	Profession
1.	Mr B 43y	DE	1976	Hospital/Care Home	Nurse/Deacon
2.	Mr D 25y	DE	1981	ICU	Nurse
3.	Mrs E 27y	DE	1989	ICU	Nurse
4.1	Mrs F 30y	AUT		Hospital	Nursing Assistant
4.2	Mrs G 28y	AUT	1991	Hospital	Nursing Assistant
4.3	Mrs H 26y	AUT		Hospital	Nursing Assistant
4.4	Mrs I 49y	AUT		Hospital	Nursing Assistant
5.	Mr K 33y	DE	1993	Hospital	Nurse
6.	Mr L 32y	CH	2006	Care Home/Hospital	Nurse
7.	Mr M 25y	DE	2006	Hospital	Nurse
8.	Mrs N 27y	DE	2006	Care Home	Nursing Assistant
9.	Mrs O 54y	DE	2007	ICU	Nurse
10.1	Mr P 47y	DE		Care Home	Nursing Assistant
10.2	Mr R 23y	DE	2018	Care Home	Nursing Assistant
10.3	Mrs S 26y	DE		Care Home	Nurse
11.	Mr T 28y	DE	2019	ICU	Nurse
12.	Mrs U 52y	DE	2021	Care Home	Nursing Assistant

▶ **Table 2** Victims – Age.

	Perpetrator	Youngest Victim	Oldest Victim	Ø-Age of Victim (Years)	Σ Victim
1.	Mr B 43y	80	88	84	2
2.	Mr D 25y	60	86	72.3	7
3.	Mrs E 27y	67	82	76.8	7
4.1	Mrs F 30y	71	90	81.6	15
4.2	Mrs G 28y	71	83	77.6	5
4.3	Mrs H 26y	Ø	Ø		
4.4	Mrs I 49y	Ø	Ø		
5.	Mr K 33 y	70	92	81.7	10
6.	Mr L 32y	76	94	83.6	25
7.	Mr M 25y	40	95	78.0	27
8.	Mrs N 27y	78	92	84,3	9
9.	Mrs O 54y	48	77	61.0	5
10.1	Mr P 47y				
10.2	Mr R 23y	62	85	73.5	2
10.3	Mrs S 26y				
11.	Mr. T 28y	34	96	73	87
12.	Mrs U 52y	31	56	41	4
					205

▶ **Table 3** Victims – Proven versus Accused Victims.

	Perpetrator	Year of Verdict	Proven Deaths		Accused Killings
			♀	♂	
1.	Mr B 43y	1976	2	0	3
2.	Mr D 25y	1981	4	3	7
3.	Mrs E 27y	1989	4	3	16
4.1.	Mrs F 30y		5	10	31
4.2.	Mrs G 28y	1991	2	3	8
4.3.	Mrs H 26y		Ø	Ø	2
4.4.	Mrs I 49y		Ø	Ø	12
5.	Mr K 33 y	1993	7	3	10
6.	Mr L 32y	2006	3	22	27
7.	Mr M 25y	2006	15	12	29
8.	Mrs N 27y	2006	9	0	9
9.	Mrs O 54y	2007	1	4	6
10.1	Mr P 47y				
10.2	Mr R 23y	2018	2	0	2
10.3	Mrs S 26y				
11.	Mr. T 28y	2019	34	53	97
12.	Mrs U 52y	2021	2	2	5
Σ			90	115	264

In retrospect, it always turned out that the perpetrators were significantly more often present in near-death emergency and/or dying situations than other colleagues.

At 8 crime scenes, grossly negligent handling of medications was discovered. In the case of greatly increased consumption of medications or missing medications, there was an inappropriate reaction or no reaction at all. In cases 4, 7 and 11, for example, it went unnoticed that drugs were repeatedly used, re-ordered, and delivered without authorization, even though the patients in question had no indications for the mishandled medications and that these medications had not been prescribed by a doctor.

The post-mortem examinations were not performed thoroughly or competently at any crime scene. In several cases, extensive hematomas and conspicuous puncture marks were not questioned or were overlooked. In case 5, post-mortem examinations were repeatedly delayed and notably superficial. In case 4, they were repeatedly omitted altogether.

In all of the serial murders, it became clear throughout the course of the legal investigation that colleagues had noticed conspicuous behavior at an early stage. People talked about it and rumors circulated, but they did not speak directly to the conspicuous colleague about it. In at least 5 cases, the later-convicted perpetrators were given suggestive nicknames at an early stage, such as witch, angel of death, and executor. During the court proceedings in cases 1, 3, 5, 7, 9, and 11, it came to light that targeted hints about suspicious behaviour from colleagues were given to superiors. In case 7, for example, concerned employees contacted superiors several times because they had observed suspicious behavior from Mr M they were told off and silenced. In case 9, no one approached Mrs O directly about her conspicuous behavior. Colleagues reported this to the ward manager, who in turn informed the management of the nursing department. There was no reaction, according to the nursing management, “because of the increased volume of work” [11]. In Oldenburg, the managing director at the time declared it “almost impossible” that Mr T had accidentally caused the near-death emergencies. He nevertheless asked the nurses’ union council to maintain secrecy and to motivate Mr T to leave the hospital. A nurse in case 11 observed Mr T. injecting something into a patient who had to be resuscitated shortly afterwards. She reported the incident to her ward manager. He said, “Don’t be like that. You’ll have to live with it” [12].

The majority of the perpetrators acted alone. However, it was determined that the perpetrators in cases 4 and 10 acted in collaboration with others. Additionally, there were incidents at 2 crime scenes (cases 4 and 5) that suggest connivance or consent to the killings. Mrs F (case 4) was asked by a colleague to accompany her to a dying patient: “Go with me, maybe it will go faster.” Another colleague commented in the staff circle about a seriously ill patient: “He can’t die because Mrs F is not there.” In Gütersloh (case 5), a colleague commented to Mr K about 3 patients before he started the night shift: “I don’t want to see them here tomorrow.” The next morning, these 3 patients were dead. Mr K reported at the end of the night shift, “Order executed” [13]. All perpetrators denied in court that they had been directly approached

▶ **Table 4** Convicted/Accused Criminal Offences.

	Perpetrator	Convicted Criminal Offences	Accused Criminal Offences	Sentence
1.	Mr B 43y.	2 murders. 4 attempted murders. 1 grievous bodily harm.	7 murders. 1 attempted murder. 1 grievous bodily harm.	Lifelong
2.	Mr D 25y.	7 deaths resulting from bodily injuries.	6 murders. 1 homicide.	7 Years
3.	Mrs E 27y.	5 homicides. 1 killing on request of the victim. 1 involuntary manslaughter. 1 attempted homicide.	17 murders	11 Years
4.1	Mrs F 30y.	17 murders. 11 attempted murders. 2 grievous bodily harm. 1 complicity in murder.	31 murders. 1 attempted murder. 2 complicity in murder.	Lifelong
4.2	Mrs G 28y.	3 murders. 4 complicity in murder. 2 complicity in attempted murders.	4 murders. 4 complicity in murder.	Lifelong
4.3	Mrs H 26y.	2 attempted murders.	2 murders.	12 Years
4.4	Mrs I 49y.	7 attempted murders. 1 involuntary manslaughter.	12 murders. 1 attempted murder.	20 Years
5.	Mr K 33y.	10 homicides.	10 murders.	15 Years
6.	Mr L 32y.	7 murders. 15 intentional homicides. 3 completed homicide attempts. 2 incomplete homicide attempts.	8 murders. 15 intentional homicides. 4 completed homicide attempts.	Lifelong
7.	Mr M 25y.	12 murders. 15 homicide. 1 attempted homicide. 1 killing on request of the victim. 1 grievous bodily harm. 5 thefts.	16 murders. 12 homicides. 1 attempted homicide. 1 killing on request. 2 grievous bodily harm. 5 thefts.	Lifelong
8.	Mrs N 27y.	4 murders. 4 homicide. 1 killing on request of the victim.	4 murders. 4 homicides. 1 killing on request of the victim.	Lifelong
9.	Mrs O 54y.	5 murders.		Lifelong
10.1	Mr P 47y.	1 jointly conducted murder. 1 complicity in murder. Maltreatment of person under protection. Grievous bodily harm. Violation of private sphere through image recording. Grave sexual abuse of persons incapable of resistance. Theft. Complicity in theft and computer fraud.	2 jointly conducted murders. 1 attempted joint murder. Maltreatment, sexual abuse, violation of private sphere through image recording.	Lifelong
10.2	Mr R 23y.	2 jointly conducted murders. Complicity in the maltreatment of person under protection. Complicity in grievous bodily harm. Grievous bodily harm. Complicity in grave sexual abuse of persons incapable of resistance. Violation of private sphere through image recording. Defamation. Dealing in stolen goods. Theft. Computer fraud.	2 jointly conducted murders. 1 jointly conducted attempted murder. Maltreatment, sexual abuse, violation of private sphere through image recording.	Lifelong
10.3	Mrs S 26y.	1 jointly conducted murder. Maltreatment of person under protection with grievous bodily harm and violation of private sphere through image recording. Grave sexual abuse of persons incapable of resistance with violation of private sphere through image recording. Defamation, theft, and complicity in theft.	1 jointly conducted murder. 1 jointly conducted attempted murder. Maltreatment, sexual abuse, violation of private sphere through image recording.	Lifelong
11.	Mr. T 28y.	87 cases of murder and 3 attempted murders.	100 murders.	Lifelong
12.	Mrs U 52y.	4 murders.	4 murders. 1 grievous bodily harm.	15 Years

about their suspicious behavior. However, at the same time, the perpetrators were convinced that their colleagues had noticed their actions. Several claimed that they had interpreted the lack of reactions as tacit agreement.

Hidden conflicts were festering at almost all crime scenes, contributing to a tense working atmosphere. Obvious mistakes and first boundary violations and assaults were not addressed directly and personally. Additionally, resignation and disinterest set in at many crime scenes.

The periods in which crimes occurred varied between 1 day (case 12) and 72 months (case 4). In the period between the first internal suspicions surfacing and the arrest of the later perpetrator (latent period), at least 90 further killings occurred (▶ **Table 5**).

▶ **Table 5** Crime Timeframe (+ latent period: period between the first internal suspicions surfacing and the arrest of the perpetrator).
Legend: d = days, Mon = month(s), Ø = average.

	Perpetrator	First Crime	Last Crime	Crime Timeframe	Latent Period	Fatalities
1.	Mr B 43y.	01/1971	06/1971	6 Mon	5 Mon	2
2.	Mr D 25y.	12/1975	12/1975	11 d	Ø	Ø
3.	Mrs E 27y.	09/1985	02/1986	6 Mon	3 Mon	3
4.1	Mrs F 30y.	1983	03/1989	72 Mon	≈ 60 Mon	min 7
4.2	Mrs G 28y.	1983	03/1989	72 Mon	≈ 60 Mon	5
4.3	Mrs H 26y.	1989	03/1989	72 Mon	≈ 60 Mon	Ø
4.4	Mrs I 49y.	1989	03/1989	72 Mon	≈ 60 Mon	Ø
5.	Mr K 33y.	05/1990	12/1990	8 Mon	4 Mon	4
6.	Mr L 32y.	03/1995	06/2001	63 Mon	3 Mon	2
7.	Mr M 25y.	01/2003	07/2004	18 Mon	3 Mon	4
8.	Mrs N 27y.	11/2003	04/2005	17 Mon	Ø	Ø
9.	Mrs O 54y.	06/2005	10/2006	16 Mon	3 Mon	3
10.1	Mr P 47y.					
10.2	Mr R 23y.	12/2015	02/2016	3 Mon	unclear	2
10.3	Mrs S 26y.					
11.	Mr. T 28y.	02/2000	06/2005	65 Mon	45 Mon	60
12.	Mrs U 52y.	04/2021		1 d		

Methods of Killing

16 perpetrators took precise and direct action with the intention of causing immediate death. Mr T (case 11) misused medication to provoke near-death emergencies, which, in at least 87 cases, ended with the death of the poisoned victims. Non-prescribed drugs were predominantly used as the killing agents, including insulin, digitalis, sedatives, muscle relaxants, anesthetics, antiarrhythmics, analgesics, antihypertensives, neuroleptics, and potassium chloride (KCl).

Mr K (case 5) killed his victims with air injections.

Direct violence alone was the cause of death in 2 homicide series (cases 8 and 12). Mrs N (case 8) suffocated her victims with a pillow and Mrs U (case 12) killed her victims by stabbing them with a knife. In both cases, the crime scene was a care home. Here, crime scene-specific means of killing did not play a role. In 3 series of killings (cases 4, 6, and 10), the 8 perpetrators used both drugs and mechanical force, e. g. by closing the airways with pillows or plastic sheets. In case 4, death by suffocation was caused by a method known in the perpetrators' jargon as "mouth care". Here – in combination with flunitrazepam – the swallowing reflex was suppressed by applying pressure to the base of the tongue with a spatula. At the same time, the victim was given water that could not be swallowed but had to be inhaled (▶ **Table 6**).

Perpetrators

The 17 convicted perpetrators (9 women, 53 %; 8 men, 47 %) all belonged to the nursing profession. 8 perpetrators were employed as nursing assistants: 4 in a clinic (case 4) and 4 in care homes. 9 perpetrators worked as registered nurses. The average age was 33.8 years. 9 lived alone while 7 had a partner or were divorced. 5 of the 17 perpetrators had been temporarily psychiatrically treated. 2 of the 17 perpetrators had previous convictions for traffic offences or offences against property. 5 perpetrators were banned from the profession, and in the case of 12 perpetrators, the courts refrained from imposing a ban for various reasons (▶ **Table 7**). Mr D (case 2) received the lowest sentence of 7 years. 11 perpetrators received life sentences (▶ **Table 4**).

All perpetrators were psychiatrically examined. 15 of them had full capacity; Mr D (case 2) and Mrs U (case 12) were assessed as having diminished capacity. Only in her case was placement in a forensic psychiatric ward ordered due to an emotionally unstable personality disorder (▶ **Table 8**).

In the case of almost all perpetrators, character abnormalities and prominent personality traits were identified in retrospect, which had not been particularly noticeable beforehand (▶ **Table 8**). 3 offenders (cases 2, 11, and 12) had received temporary psychiatric treatment. Retrospectively, different personality changes in the offenders became apparent, which had developed over an extended period of time. For example, increased withdrawal, distanced and cold relationships, reservedness, tension, cynical and denigrating comments, rough language, and aggressive outbursts were observed. An above-average insecurity and pronounced narcissistic personality traits were found in all perpetrators. The insecurity was perceived by the perpetrators as a weakness, not something compatible with their self-image and therefore concealed and repressed. None of the perpetrators sought to talk to others or sought

▶ **Table 6** Methods of Killing and Main Motives.
Legend: DE = Germany, CH = Switzerland, AUT = Austria.

	Perpetrator	Country	Method(s) of Killing	Main Motive(s)
1.	Mr B 43y	DE	Prothipendyl, oxycodone	Striving for recognition and power
2.	Mr D 25y	DE	Digitalis	Not clarified/Attempts at mitigating pain
3.	Mrs E 27y	DE	KCl, clonidine	Alleged compassion
4.1	Mrs F 30y	AUT	Flunitrazepam, suffocation	Alleged compassion
4.2	Mrs G 28y	AUT	Flunitrazepam, suffocation	Alleged compassion
4.3	Mrs H 26y	AUT	Flunitrazepam, suffocation	Alleged compassion
4.4	Mrs I 49y	AUT	Flunitrazepam, suffocation	Alleged compassion
5.	Mr K 33 y	DE	Air injection	Alleged coercion
6.	Mr L 32y	CH	Nozinan, tramadol, suffocation	Alleged compassion
7.	Mr M 25y	DE	Midazolam, diazepam, etomidate, pancuronium bromide, suxamethonium chloride	Alleged compassion
8.	Mrs N 27y	DE	Suffocation	Not clarified/Mythomania
9.	Mrs O 54y	DE	Sodium nitroprusside, midazolam	Alleged compassion
10.1	Mr P 47y	DE	Insulin, suffocation	Striving for recognition and power
10.2	Mr R 23y	DE	Insulin, suffocation	Striving for recognition and power
10.3	Mrs S 26y	DE	Insulin, suffocation	Striving for recognition and power
11.	Mr. T 28y	DE	Initiated an emergency using ajmaline, sotalol, lidocaine, potassium chloride (KCl), and amiodarone	Striving for recognition and power
12.	Mrs U 52y	DE	Knife stabs	Not clarified

▶ **Table 7** Perpetrators. Age, civil status, prior treatment, and criminal record refer to the time of arrest.

	Perpetrator	Age	Civil Status	Prior Recipient of Psychiatric Treatment	Criminal Record	Ban from the Profession
1.	Mr B	43	Married, children	Ø	Offence against property	No
2.	Mr D	25	Single, no children	Yes	Ø	Yes
3.	Mrs E	27	Single, no children	Ø	Ø	No
4.1	Mrs F	30	Single, no children	Ø	Ø	No
4.2	Mrs G	28	Partner	Ø	Ø	No
4.3	Mrs H	26	Partner, child	Ø	Ø	No
4.4	Mrs I	49	Married, child	Ø	Ø	No
5.	Mr K	33	Married, no children	Ø	Ø	No
6.	Mr L	32	Partner	Ø	Traffic offence	No
7.	Mr M	25	Partner	Yes	Ø	Yes
8.	Mrs N	27	Single, no children	Ø	Ø	Yes
9.	Mrs O	54	Divorced, no children	Ø	Ø	No
10.1	Mr P	47	Separated, no children	Yes	Ø	No
10.2	Mr R	23	Single, no children	Ø	Ø	No
10.3	Mrs S	26	Single, no children	Ø	Ø	No
11.	Mr. T	28	Divorced, child	Yes	Ø	Yes
12.	Mrs U	52	Married, children	Yes	Ø	Yes

▶ **Table 8** Personality Traits and Diagnoses.

	Perpetrator	Year of Verdict	Personality Traits and Diagnoses	Legal Capacity
1.	Mr B 43y.	1976	Neurotic-psychopathic personality, insecurity.	Full capacity
2.	Mr D 25y.	1981	Drug abuse, schizoid personality disorder, neurasthenic personality, as well as labile and low self-esteem.	Reduced capacity
3.	Mrs E 27y.	1989	Insecurity, poorly developed self-esteem, fragile self-esteem, increased psychological vulnerability, immature conduct in relationship.	Full capacity
4.1	Mrs F 30y.		No psychological abnormalities.	Full capacity
4.2	Mrs G 28y.	1991	Psychologically unremarkable.	Full capacity
4.3	Mrs H 26y.		Low trust in oneself, otherwise psychologically unremarkable.	Full capacity
4.4	Mrs I 49y.		No psychological abnormalities.	Full capacity
5.	Mr K 33y.	1993	Reactive depression, insecurity, fragile self-esteem.	Full capacity
6.	Mr L 32y.	2006	Narcissistic personality traits, striving for recognition, self-pity.	Full capacity
7.	Mr M 25y.	2006	Lack of empathy, insecurity, a narcissistic and self-centered personality with traits of megalomania.	Full capacity
8.	Mrs N 27y.	2006	Possible borderline personality disorder.	Full capacity
9.	Mrs O 54y.	2007	Personality disorder with narcissistic, obsessive, and schizotypal traits.	Full capacity
10.1	Mr P 47y.		Insecure, anxious personality structure.	Full capacity
10.2	Mr R 23y.	2018	Histrionic-narcissistic tendencies, abuse of Amphetamines and Tilidine.	Full capacity
10.3	Mrs S 26y.		Anxious-dependency and narcissistic-manipulative traits, abuse of Amphetamines.	Full capacity
11.	Mr. T 28y.	2019	Obsessive-compulsive personality disorder with paranoid, anxious insecurity components. Abuse of medications and alcohol. Combined personality disorder with narcissistic, histrionic, dissocial, and obsessive-compulsive components. Emotional lability.	Full capacity
12.	Mrs U 52y.	2021	Borderline personality disorder.	Reduced capacity

professional help. It is very likely that the perpetrators were not approached about these changes in their personality.

Motives

In all of the cases, there was not a single motive that was the deciding factor for the acts, but rather a unique and individual combination of motives. In retrospect, it became clear that the development leading up to the willingness to commit a crime had always taken place over a long period of time. In the case of 4 perpetrators, the motive ultimately remained unclear (cases 2, 5, 8, 12). In the case of 5 perpetrators, a strong striving for power and recognition was at the center of their attention (cases 1, 10, and 11). In Germany, Mr T is archetypal for this cluster of motives. He said that he needed the thrill and wanted attention from others. In contrast, 8 perpetrators (cases 3, 4, 6, 7, and 9) claimed to have acted out of compassion for the victims. An example of this is Mr M (case 7), who wanted to spare patients suffering in their hopeless situation (▶ **Table 6**).

Throughout the course of psychiatric evaluations and during the court hearings, the personality structure and the expressed motives of the perpetrators were questioned. It was found that the perpetrators, in fact, could not bear the condition of their patients and their own situation, and gained personal relief by killing directly or provoking near-death emergencies. It was not the supposed well-being of the victims, but the perpetrators' own misperceptions and judgements that guided their actions. For example, Mr M said: "I was relieved in some way and had the feeling that someone was redeemed." Or in the words of Mrs O: "But all of a sudden I also saw a certain misery in people – so I thought – you have misery – so do they – and you bring it to an end for them". Mr T is archetypal for the striving for dominance and power: The admiration of his colleagues was like a "charging station" for his self-esteem. The perpetrators countered their own powerlessness, which has become unbearable for them, with near-death emergencies initiated by the perpetrator or direct killings and thus temporarily reduced the inner conflict tensions they were experiencing.

Discussion

It is clear that homicides in clinics and care homes are particularly difficult to detect, especially when a caregiver is intent on killing. Although clinics and care homes are places where deaths occur frequently and where death is a normal part of everyday life, no one expects such crimes to occur in these contexts. Of the 939,572 deaths in 2019, 428,753 (≈46 %) occurred in hospitals alone [14]. The killing agents are easily accessible and often leave few noticeable traces. Physical contact is part of everyday life and

thus, when only examined superficially, the acts appear to be medical/nursing procedures, if they are not completely covered up.

In hospitals and care homes, nursing and medical staff are the two professional groups that have direct contact with patients or residents as well as direct access to medications and medical or nursing equipment. In the vast majority of cases, substances and means used to carry out the killings were specific to the healthcare field. The legally convicted perpetrators in this study belong exclusively to the nursing profession. Almost half of the perpetrators (8 persons) had only limited qualifications for the nursing profession. However, due to the small number of cases, no causal relationship can be drawn by this study between low qualification and perpetration. As well, no claims can be made about why only those from the nursing profession appear in these court cases.

In the German population as a whole, the proportion of women is around 50 % [15]. In contrast, the proportion of women in the nursing profession is around 84 % [16]. Taking all homicides in Germany into consideration, regardless of the crime scene, the proportion of male perpetrators is about 85 %. In the homicides in hospitals and care homes investigated in this study, 47 % of the perpetrators are male, although they only have a share of about 16 % in the nursing profession. In the general population, men are thus about 5 to 6 times more likely to be perpetrators than women. In clinics and care homes, men are about 4 to 5 times more likely to be the perpetrators. The proportion of male perpetrators therefore also predominates in homicides in clinics and care homes, albeit to a somewhat lesser extent.

The average age of the perpetrators was 33.8 years, which is below the average age of workers in the healthcare profession where 56 % are older than 40 years [16]. The personality changes of the perpetrators before their conviction were noted before their arrest and became clear retrospectively. The fear of falsely accusing suspected perpetrators contributed to the reluctance of colleagues to act or speak up and thus to a delayed investigation. Other barriers to detection which delayed investigation included: the slowly increasing willingness of the perpetrators to commit the crimes as well as the colleagues' and supervisors' lack of knowledge, carelessness, work overload, conflicts, lack of willingness to investigate the situation, and the fear of damaging the reputation of the hospital. In the phases where first conspicuous behaviors were noticed and no reactions were made, further killings occurred. In retrospect, these additional killings could have been largely avoided. Crucially, periods of crime were prolonged because superiors did not adequately follow up on a voiced suspicion and did not seek direct contact with the suspect and, in case of doubt, inform the investigating authorities.

Two groups of perpetrators can be distinguished on the basis of the sequence of events. The significantly larger group committed acts to cause immediate death. A rather small group – also in international comparison [17] – initiated near-death emergencies. In the German-speaking legal area, only Mr T belongs to this later group.

The interplay of individual disposition and negative influencing factors at the workplace is conducive to committing such crimes. In the case of individual disposition, the consistently present strongly pronounced insecurity in oneself in connection with accentuated narcissistic personality traits are fundamental [18]. Individuals with such a disposition evidently find it very challenging to accompany others in states of suffering within the limited framework of possibilities offered by their profession. In the long run, the perpetrators develop a sense of helplessness that feels unbearable to them, which remains unspoken and is not openly addressed by their immediate colleagues. The perpetrator's own subjective discomfort and the actual or assumed suffering of the victim became the source of a toxic cluster of motives. After a longer period of time, the pent-up inner tension from the conflict was finally released through direct killings or near-death emergencies. Temporarily, one's own powerlessness was overcome, and control regained.

Negative influencing factors in the workplace include inadequate staffing levels, non-present and/or unavailable supervisors, and prolonged unresolved conflicts. In any case, inadequate staffing in terms of quality and quantity is associated with increased mortality [19]. A working atmosphere in which initial misconduct and signs of brutalization are not recognized and not addressed directly and personally has proven to be particularly risky for prolonged periods of crime and high numbers of victims. Hospital managements that have refrained from police investigations because of feared "damage to the hospital's reputation" have contributed to the increase in the number of victims.

A prerequisite for risk minimization is that employees are informed about acts of violence in clinics and care homes and know about the susceptibility to abuse of asymmetrical relationships [20]. The belief that such things cannot occur in one's own institution has proven to be a barrier to detection. In principle, killings are possible in every hospital and in every care home. Any conspicuous occurrences must be recognized and addressed at an early stage. Indications of an increased risk can be different combinations of the following warning signs:

- Marked insecurity in oneself and conspicuous search for praise
- Striving for prestige and dominance, lack of empathy, and egoism
- Changes in personality
- Cynical and coarse language
- Accumulation of unexpected deaths or near-death emergencies
- Similarity of the pattern of the clinical course among victims just before death
- Frequent presence of the same colleague in cases of near-death emergencies or death
- Increased use of medications
- Suspicious nicknames
- Negligent autopsy without toxicological testing
- Inaction of superiors

It must be registered and addressed with the suspicious colleague if personality changes are noticed, e. g. increased withdrawal behavior, increased irritability, or verbal coarseness. The use of suspicious nicknames, e. g. "angel of death" or relevant rumors must be followed up on. It must be made possible to compare duty times with death and resuscitation cases at the facility at any time in order to identify the frequent presence of a particular employee at an early stage. Medication usage must be critically reviewed and monitored. Finally, mortuary inspections and toxicological examinations must be expanded and improved.

However, controls alone will not sufficiently reduce the risks. This requires thorough investigation, reciprocal attentiveness among colleagues, close observation, detailed information, and communication. However, these tasks can only be carried out where enough qualified staff have enough time and where direct discussion with patients, clients, and colleagues is encouraged.

Prevention is imperative for the very reason that we know little about the dark field of homicides in hospitals and care homes. In comparison to all crime scenes, about 11 000–22 000 non-natural deaths (e. g. suicides and accidents) remain undetected in Germany every year, among them 1200–2400 homicide victims [21]. Criminological research results show that only up to 50 % of all intentional and negligent homicides are reported to the police [22]. There is some evidence that the number of unreported cases in hospitals and care homes is higher, if only because a deceased person does not raise too many alarms and the possibility of killing with few traces is almost always available. An urgent need for research on this complex of topics is also suggested by the results of a study conducted in the fall of 2018. Of the 2507 physicians surveyed, 46 (1.83 %) reported having performed active interventions or treatments with the goal of immediate termination of life in 226 cases in the past 24 months. These 46 physicians had not been asked to perform euthanasia. In contrast, of the 2683 nurses, 27 (1 %) performed active euthanasia in this sense on 99 patients without being requested to do so [23].

The issue of serial murder in hospitals and care homes should receive more scientific and public health attention.

KEY STATEMENTS

- Serial murders in clinics and care homes were publicly recognized repeatedly over the past few years, and there is likely a high number of unreported cases.
- Motives for the crimes are complex, often having been developed over a long timeframe; at their core, they consist of hidden insecurity, a striving for power, and a desire for recognition.
- As a preventive measure, attention must be made to staff members who are conspicuously frequently present during resuscitations or deaths.
- Personality changes of an employee in combination with crude and cynical language and conspicuous nicknames must be considered as serious early warning signs.
- If there are reasonable grounds for suspicion, the responsible investigating authorities must be informed at an early stage.

Conflict of Interest

The authors declare that they have no conflict of interest.

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