scientific reports

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Measuring the trend in police tasks concerning people with mental health challenges in Denmark, 2008–2022

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The handling of people with acute mental health challenges has become a defining police task over the recent decades but data challenges limit the investigation of the nature of this trend. To get as close to police-citizen interactions as possible with quantitative data, we automate the information kept in more than 3 million descriptions of encounters between police and citizens of Denmark during 2008–2022, obtained from the administrative system at the Danish National Police. The resulting data allows us to estimate trends in these encounters and split them by whether the involved citizen was likely in acute need of mental health assistance. We validate the data from our automation against estimates obtained from detailed analyses of more than 19,200 incident descriptions covering 2009–2016. Results confirm a strong upward trend in police tasks related to the handling of people recorded as having acute mental health challenges, far exceeding other relevant trends in the data; an upward trend across all case types.

Keywords Mental health, Police tasks, Psychiatry, Safety and public health

The handling of people experiencing acute mental health challenges and people in acute need of psychiatric care has become integral to policing. A few key numbers are useful for conveying the scope of this trend. Livingston[1] reviews 85 studies of rates of contact between police and people with such challenges and concludes that as much as 25% of people diagnosed with a mental health disorder were arrested at some point in their lives and 12% of persons with a mental health disorder have police involved in their pathway to mental healthcare. In the UK, Her Majesty's Inspectorate of Probation[2] estimates that around a third of people in police custody suffer from mental health challenges. For imprisoned men and women, rates are as high as 48% (men) and 70% (women), and around 38% under probationary supervision are recorded as having mental health challenges. In Denmark, the context of our study, Adamsen[3] used the screening of pretrial detainees in the country's largest pretrial detention center during 2009–2012 to show that as much as 91% of pretrial detainees suffer at least some sort of mental health challenges. Mental health challenges here included conditions such as sleep deprivation, which could well be endogenous to pretrial detainment, whereby it is unclear whether these mental health challenges were pre-existing or arose because of detainment. About half of the recorded mental health challenges in the study were related to substance abuse disorders and about 8% concerned severe mental illnesses.

Although alarmingly high, the numbers mentioned are not indicative of the full array of police tasks that concern people with mental health challenges. This is because arrestees and pretrial detainees, for example, constitute only a subset of the people whom the police interact with. Importantly, such subsets are highly selected, representing only people whom the police suspected of or charged with a crime and perhaps decided to detain. Existing data often cover only the most serious cases, such as ones with fatal outcomes[4] or small-scale studies of officer accounts of their experiences[5,6]. But many people with acute mental health challenges do not fit these descriptions and the size of the group that police interact with but who do not have acute mental health challenges and do not require detainment is most often unknown; it is, after all, this group that the trend should be benchmarked against.

We add to research by measuring the trend in police incidents – not just charges or arrests – concerning people recorded by the police as someone with mental health challenges in Denmark over a much longer period,

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from 2008 to 2022, and benchmark this trend against other relevant trends, namely the trend in police tasks concerning people not recorded as having mental health challenges and the trend in general help-seeking from Denmark's mental healthcare institutions. We also analyze which types of tasks drive the trend in tasks related to people recorded with mental health challenges and show that the trend is unlikely to be driven exclusively by purely administrative tasks or by age-related illnesses such as dementia, which could have grown over the data period that is characterized by population aging. Last, we also analyze trends in the data by police jurisdiction and analyze the degree to which people in the data have had prior contact with mental healthcare institutions.

Like many other countries, Denmark has moved from inpatient to outpatient psychiatric care over the last decades. Between 2007 and 2024, the psychiatric hospital capacity (number of beds) decreased by around 5.5%[7]. Such capacity constraints have been shown to increase the risk of crimes committed by people who could not be admitted to psychiatric acute care because of occupancy[8]. Training in the handling of people with mental health challenges in acute need of care is integrated into police education in Denmark. During our data period, studying to become a police officer was a three-year education with both theoretical and practical course material. In 2016, the police education was reduced to two years and then later expanded to two years and four months. But course material on the handling of people with mental health challenges was unaltered with this change. The training – lasting approximately two days – includes identifying people in need of care, knowing communicative challenges in relation to such needs, learning safe ways to dismantle critical situations involving people with mental health challenges without the excessive use of force, and knowing points of collaboration with welfare state agencies (such as psychiatric acute care units). The exercises taught are primarily on how to dismantle critical situations involving people with mental health challenges and less on how to de-escalate the situation. Some practical training is also obtained during periods of internships (i.e., actual police work under the supervision of seniors).

We rely on two sources of granular population data. The first source contains police administrative data on the universe of contacts between citizens of Denmark and the Danish national police, including prose descriptions of the content of these contacts. A "contact" can be any type of interaction between police officers and a citizen, such as if police calm down an agitated citizen, attend to someone whom the police or other citizens believe pose a danger to themselves or others, or more "classical" police tasks such as intervening in violence. Other studies have emphasized the merits of this type of data because it contains *encounters* between police and citizens, not just charges or arrests, and hence represents a much more direct measure of the scope of police work[9]. Moving from standard criminological data consisting of formal criminal legal documents (e.g., a formal criminal charge) to this type of "low-level" data on contacts between the police and the public may, however, raise concern over the degree to which reporting is consistent across time and space, potentially varying considerably based on how much resources and time the police has for recording or even prioritizing such incidents. We therefore devote attention to this threat in our analysis and in the interpretation and discussion of results. Inspired by a report from the Danish National Police[10] that qualitatively validated whether an incident concerned a person with acute mental health challenges, we focus on the 28 case types under which as much as 90% of the relevant incidents occur. This reduction of "deadweight" in the data – case types that are unlikely to concern relevant people – reduces our data size from about 8 million to about 3.2 million recorded incidents. We then search the incident descriptions for words indicative of mental health challenges to produce an indicator variable (see details of this procedure under "Method"). We use this data to evaluate whether an incident was related to a person recorded by the police as someone with mental health challenges (as defined from the prose description), and we obtain from the data the nature of the incident as recorded by the police (e.g., whether the police were called out on grounds of public disturbance, an incident of violence, etc.). Our data do not include official "caution flags" for people with known mental health challenges to benchmark against, as other studies have done[9], yet we do benchmark our results against the qualitatively validated results from the Danish National Police[10] for the overlapping data period and obtain prior contact with the mental healthcare service for a subset of the data.

The second data source is the Danish Psychiatric Central Research Register, which provides the universe of contacts between citizens of Denmark and the public psychiatric hospital sector in the country[11]. We use this data to describe the general trend in help-seeking for mental health challenges in the population and observe whether any trends in police tasks concerning people recorded as someone with mental health challenges outgrow the general trend. We also use this data to observe whether the rate of having prior contact with the mental health institutions for the modal person recorded as someone with mental health challenges in the police data changed over our data period, which could indicate changing registration practices.

There are several merits to our study. First, our estimates are based on large and (for Denmark) nationally representative data. Second, our data cover a much longer period than has previously been analyzed, spanning 15 years. Third, our benchmarking against other trends over the same period allows us to observe whether trends are unique to police tasks recorded as concerning people with mental health challenges or whether they are more broadly applicable to police work and to population mental health. Fourth, our ability to break down the trend by case types is, as far as we know, unprecedented. Fifth, our analysis of geographical patterns in the data allow us to analyze whether trends in the data are general or arise from specific jurisdictions. And sixth, our ability to link the people in the data to the national psychiatric hospital register allows us to give some indication of the degree to which the police changed their interpretation of mental health challenges over the data period. Each of these merits of our study would likely help advance knowledge on the trend in police tasks concerning people with mental health challenges; we advance all six.

Methods

This study is based on secondary analysis of administrative data collected by government agencies in Denmark. The legal mandates to collect and assess the data are held by the agencies, and the Danish Act on Ethics Review of Health Research Projects and Health Data Research Projects ("the Committee Act") hence do not apply to

the type of research reported in this paper[12]. Indeed, contacting study subjects from information obtained in the data to obtain informed consent would constitute a violation of Danish law. All data processing complied with the European Union's General Data Protection Regulation (GDPR) and the Danish Data Protection Act, which are enforced by the Danish Data Protection Agency[13], and followed formal and strict agreement with the Danish National Police. The data analyses were conducted under the data confidentiality and information security policies of the Danish National Statistical Institute, Statistics Denmark[14]. All methods and analyses were thus carried out in accordance with relevant guidelines and regulations.

Our main data comes from the Danish National Police's centralized registration system. This system contains detailed information on all incidents that have required police attention, not just incidents that led to formal charging, arrest, or the like. The system covers all jurisdictions in Denmark, effectively holding information on all encounters between the police and the citizens of Denmark. Authors TK, MTB, and LNM obtained required security approvals from the Danish National Police for accessing and processing classified data on behalf of the Danish National Police and delivering it to Statistics Denmark.

In a report published in 2018[10], the Danish National Police developed and qualitatively validated a wordlist for identifying incidents in the centralized registration system involving people with mental health challenges. They found that as much as 89.3% of incidents including these search words were concentrated in just 28 out of 304 case types, wherefore they – and we – focus only on this 28-case-types-subset. They then drew from the 28-case-types-subset 19,200 cases from the 2009 to 2016 window based on the wordlist and read each of these 19,200 descriptions with the aim of categorizing each by whether it involved a person with mental health challenges. To validate the categorization, the coders identified doubtful cases and investigated the entire associated case and other recorded incidents concerning the same individual. They also cross-referenced incidents with records from other authorities (e.g., health authorities or social services) to confirm the coding, which was possible because all incidents are recorded using unique individual identifiers which they could link across service providers. Many incidents involved "repeaters", i.e., persons with known and medically diagnosed mental illnesses appearing multiple times in police records. With the categorization of each incident, they then calculated the percentage of incidents which per their categorization concerned someone with mental health challenges within case type and inferred these percentages to the population distribution of cases across case types. Based on these data, the police estimated that the proportion of recorded incidents that involved someone with mental health challenges had increased from 5.6% to 12.8% during 2009–2016 (results reprinted in Fig. 1).

In our analysis, we view the results from the 2018 police report as representing the "true" distribution of such incidents in 2009–2016 because they were based on qualitatively validated information. We then use the same

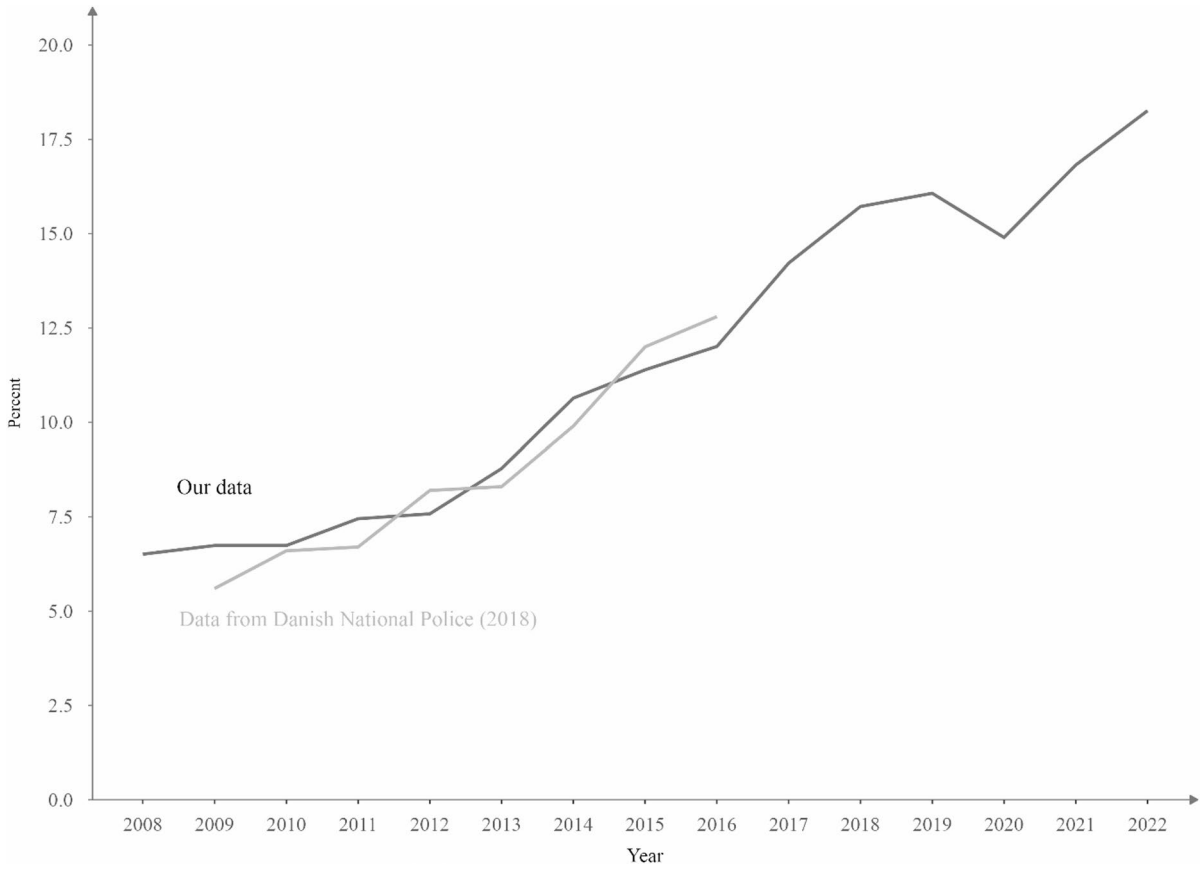

Fig. 1. Percent of incidents concerning people recorded as someone with mental health challenges in the 28-case-type-subset, Denmark 2008–2022.

wordlist approach on *all* incidents under the same 28-case-types-subset of incidents recorded during 2008–2022. From these data, we describe the trend over this longer and more recent period, and we decompose the trend by case type to gain deeper understanding of what characterizes the trend.

To produce our data, we accessed all incidents under the mentioned 28-case-types-subset during 2008–2022. We then searched the prose descriptions of these incidents to identify ones that contained the words from the police's wordlist, thereby creating a dummy variable indicating whether police described the incident as likely involving a person with mental health challenges or not. To avoid missing cases where some of the words were misspelled, we also included possible misspellings of some of the words and added partial search words that could otherwise be misinterpreted as a different in truncated form. We also added a few extra search words that seemed relevant. Furthermore, we assessed the distribution of cases within each search word and found that for some words (hospitalized (*indlagt*), confused (*forvirret*), acting out (*udadreagerende*), involuntarily detained (*tvangstilbageholdt*)), a large number of traffic offenses were flagged, and as these words (in Danish) are not uniquely tied to mental health challenges but could also relate to driving under the influence, we opted to discard these words from the list to avoid upward bias in results. Our applied word list is in Table S1 in the supplementary material.

In our analysis, we first use the binary variable to assess the overall growth in incidents related to people described as someone with mental health challenges over our data period. We do so simply by calculating the annual percentage of all incidents recorded in the data that score 1 on our binary indicator variable. This percentage will show how the share of encounters has developed over time.

We then focus on the nature of the police tasks associated with the relevant incidents and the trends herein. Here, we disaggregate the trend into trends within types of police task. We show both the distribution of incidents across task types in absolute numbers to show which task types require more police attention, and we show the relative distribution of task types within years to observe whether specific types in- or decreased relative to the overall trend in the number of incidents. Importantly, two case types require special attention. (A): "Other investigations and internal orientations" require special attention for two reasons. First, some tasks in this case type are mostly administrative, such as when an officer on night shift transfers an ongoing case to the day shift. It is thus debatable whether this case type should even be included as concerning citizens or simply reflect police-internal workflows. However, relevant tasks such as encountering and comforting a sad person on the street, but without this leading to any police task per se, are also counted in this category. Second, at the practical level there was a change in the content of this case type in 2018. Prior to 2018, it was used for an array of tasks (most often ones that did not lead to actual action from police officers, such as the type of encounter that was just described), whereas after 2018 it was emphasized that all internal orientations such as the night-to-day shift orientation noted above were to be recorded under this type. With such an important change to the content of this category during our data period, it is not straightforwardly clear how to interpret changes in the trend in encounter recorded under the category. We therefore supplement the general results for case types by results that exclude "Other investigations and internal orientations". (B): "Deaths, illness, missing person, and accidents", requires special attention as this category could be influenced by a general societal increase in age-related challenges, such as increasing prevalence of Alzheimer's disease and dementia[15]. Such an increasing prevalence would of course still imply that the police might need to devote more attention and resources to people with such challenges, yet this would reflect more on population aging than on unmet treatment needs. We therefore also supplement the results with ones that exclude tasks concerning "deaths, illness, missing person, and accidents". Last, we also run results that exclude "other investigations and internal orientations" and "deaths, illness, missing person, and accidents" simultaneously. All three versions that exclude specific case types then show what results would look like under the crude assumption that all tasks within these categories are irrelevant for the research question in our study, a type of robustness check.

There could also be a general change in the number of incidents over the period (i.e., changes to both the numerator and denominator behind the percentages reported in the first analytical step). An in- or decreasing trend in incidents concerning people recorded with mental health challenges could therefore be conflated by a general in- or decrease in incidents. We therefore next show the percentage-wise change in the number of incidents involving people recorded with mental health challenges relative to the number in 2008 (our first data year), and we do the same for the overall number of incidents excluding those related to people recorded with mental health challenges. This allows us to evaluate whether the trend in the number of incidents concerning people recorded with mental health challenges could simply reflect a general trend in the number of police-citizen encounters over the period (which could arise from changes in policing, or the surrounding society, not related to mental health). Again, we show these results both overall and excluding the special cases discussed above ("Other investigations and internal orientations" and "Deaths, illness, missing person, and accidents", and both simultaneously). To contextualize our results against the trend in mental health in society at large, we also show results for the trend in in- and outpatient admissions to psychiatric hospitals over the data period. The point here is to observe whether we see signs of an identically steep change in help-seeking in the population as we do in the police data, which would indicate a general trend perhaps driven by changed societal attention to mental health, not one related to police work per se.

A core challenge to the trends we observe in our data relates to registration practices and changes herein that may not be indicative of "true" changing behavior and assistance requirements in the population. Police officers are not medically trained and their recording of any suspicion of a person's mental health challenges is thus potentially subject to the officer's prejudices and biases. Perhaps even more importantly for our ambition to analyze time trends in the incidents, there could be changes to these biases over our data period. Likewise, increasing attention to mental health or a narrowing in the general idea of "normal behavior" in the population could imply a growing tendency for officers to jot down mental health problems as a feature of an incident and for the public to refer to mental health when they contact the police. Adding to this temporal challenge,

there could be potential regional variations in the terminology used to describe mental health challenges. The words and phrases used to refer to mental health challenges may differ significantly between different regions of Denmark, just as the resources and priorities of the local police units may have led to geographic differences in registration practices. This variability could impact the effectiveness and consistency of our wordlist-based identification method across both geographic areas and time. In such cases, what we interpret as a change in the amount of contact with people with mental health challenges could mistakenly conflate the prevalence of such encounters with interpretations of them. We therefore consistently talk about our results not as representative of underlying behavior or traits, but the police's recorded interpretation hereof.

We see no way to rule out the just described alternative explanations with our data. But to provide suggestive empirical evidence as to whether the threats are indeed important in the context of our study, we add two key variables to our main data: whether the people recorded as someone with mental health challenges in our data had prior contact with the mental healthcare sector, and the police jurisdiction in which the incident took place. If the percentage of incidents categorized as concerning someone with mental health challenges who had prior contact with the mental healthcare services declined to any discernable degree over our data period, this could imply changing threshold for the police to mark people as someone with mental health challenges. And if we observe strong geographical deviations from the general trends in the data, this could imply that results are driven by local registration practices and not true trends in the data. Towards the end of the Results section, we summarize the results from these supplementary analyses.

Results

Overall trend in incidents involving people with mental health challenges

Figure 1 shows the annual percentage of incidents recorded in the 28-case-types-subset of incidents in our data that involve people characterized as having mental health challenges from 2008 to 2022 as obtained from our binary variable indicating a match on the relevant search words. We observe a clear and steep increase in the share: From 6.5% in 2008 to 18.3% in 2022. The figure also shows the "true" percentage during 2009–2016 from the National Police[10], which represents the qualitatively validated estimates. The two lines in Fig. 1 are similar in the overlapping period, indicating that our search procedure seems valid and that we should likely trust the trends also outside the period for which we have the validated trend. The small differences between the two lines likely arise from (a) the fact that we dropped search terms potentially indicative of driving under the influence rather than mental status (which would lead to us find fewer incidents), (b) the fact that we added cropped/truncated versions of words to the wordlist (which would lead to us find more incidents), and (c) that results for the 19,200 cases in the police report were weighted to reflect all relevant cases (whereby those results are subject to random error; we instead use data from the universe of relevant cases).

Case types behind the trend

Figure 2 shows the distribution of the number of incidents which the police recorded as involving people with mental health challenges across different case types over our data period, and the relative distribution of the same numbers (in percent), i.e., where bars sum to 100% within years.

The first figure column represents the full data. The number of incidents increases sharply over the period and most case types seem to have grown in numbers (a point we return to shortly). Per these results, there were about 12,000 incidents concerning people recorded with mental health challenges in 2008 within the 28-case-types-subset that we focus on, a number that by 2022 had grown to exceed 48,000. In the early period, "other investigations and internal orientations" were dominant, accounting for around 39% of incidents involving people recorded with mental health challenges. However, this category gradually declined to make up approximately 22% of incidents towards the end of the data period. Meanwhile, cases involving "death, illness, missing persons, and accidents" constituted around 23% in the early period and steadily increased to over 34% by the end of the period, which in absolute numbers represents an increase from about 2,800 incidents in 2008 to more than 16,500 in 2022. The provision of assistance to other welfare agencies is also prevalent, increasing from about 12% in 2008 to 17% in 2022. This increase occurred abruptly from 2012 to 2013, with otherwise stable percentages both before and after. Still, the number of incidents in this case type increased from around 1,500 in 2008 to more than 8,100 in 2022, which could reflect required police presence in case of mandatory hospitalization. Incidents concerning people categorized as having acute mental health challenges also increased in numbers in more traditional police tasks, such as violence and public disturbances, yet these case types make up a minority of the relevant incidents and also constitute a relatively stable share of the incidents throughout the period.

The second figure column in Fig. 2 shows results excluding "other investigations and internal orientations", as some of the incidents in this case type could be purely administrative and hence not expressing a substantial trend in care need (see Methods). The growth in incidents concerning people recorded with mental health challenges now rose from about 7,400 to 37,000 over the data period. Excluding "other investigations and internal orientations" shows a key point about the trend in the other case types: although the case types grew dramatically in numbers, the annual distribution across these case types was relatively stable across the 2008–2022 period (percent). The increasing trend in the number of incidents concerning people recorded with mental health challenges is thus general and not driven by a subset of these case types.

The third figure column in Fig. 2 shows results excluding "death, illness, missing persons, and accidents" to exclude *all* incidents that could potentially be caused by age-related illnesses in the population (see Methods). Results show that the number of incidents concerning people recorded with mental health challenges now increased from about 9,200 in 2008 to about 31,300 in 2022. The relative distribution of incidents across task types is a little unclear in this figure, and results on one hand show stability, but on the other hand show an abrupt change in 2012/2013, arising from an uptick in more classical police tasks.

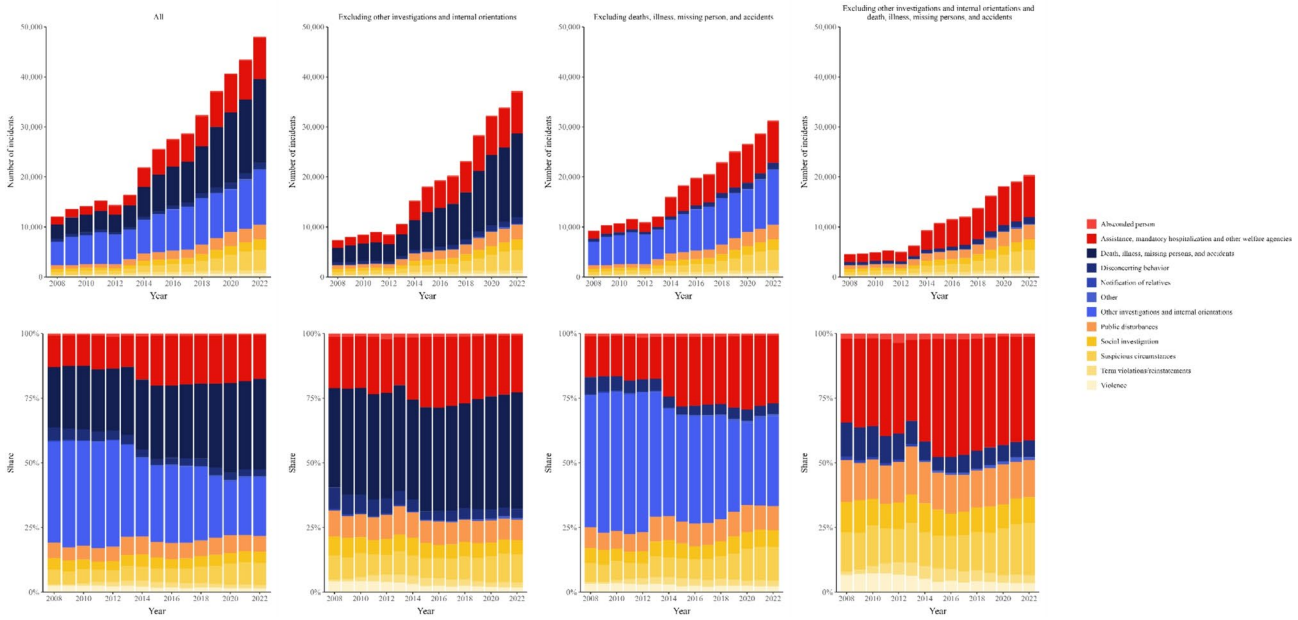

Fig. 2. Distribution of number of incidents concerning people recorded with mental health challenges by police task, and annual relative distribution of incidents (percent), 2008–2022. Overall and when excluding specific case types.

The fourth figure column in Fig. 2 shows results excluding both "other investigations and internal orientations" and "death, illness, missing persons, and accidents" to show results that cannot be affected by administrative tasks or age-related illnesses. Results show that even in this the most restricted version, the number of incidents concerning people recorded with mental health challenges still increased from about 4,500 in 2008 to about 20,400 in 2022. And, importantly, the relative distribution of case types is still fairly stable across the period, signaling again that the increasing trend seems to be general across case types. There are, of course, fluctuations in the results presented in Fig. 2, and incidents in "suspicious circumstances" in the fourth figure column, for example, grew between 2008 (15% of incidents) and 2022 (20% of incidents). The overall pattern suggests, however, that the increase in incidents concerning people recorded with mental health challenges is not driven by just one or a few case types, which we see as the most important point.

Increase relative to 2008

Figure 3 (top figure) shows the percent-wise change in the number of incidents which involve people recorded with mental health challenges relative to the number in 2008 (black line), and the same for the overall number of incidents in the 28-case-types-subset that do not concern people recorded as such (grey line). Results clearly indicate that the sharp increase in incidents involving people recorded with mental health challenges is indeed unique. The relative increase from 2008 to 2022 is as high as 298%, i.e. the level is almost four times higher in 2022 than it was in 2008. We also observe an increasing trend in the total number of incidents concerning people not recorded with mental health challenges within the 28-case-types-subset, but this increase is comparatively minimal, 24%. Last, the dashed line in Fig. 3 shows the relative trend in the number of in- and outpatient admissions to psychiatric hospitals in Denmark to give impression of the general trend in help seeking for mental health challenges over the period (see Methods). Again, this increase is minimal (67%) compared to the one observed for police incidents involving people recorded with mental health challenges. Taken together, these results suggest that although some fraction (around 24% points) of the increase across the period may be attributable to a general time trend in incidents recorded in the 28-case-types-subset of the data, the growth in the number of incidents which involve people recorded with mental health challenges is indeed substantial.

The bottom row of Fig. 3 shows results that exclude "other investigations and internal orientations" and "death, illness, missing persons, and accidents", and both simultaneously, to indicate these categories' impact on the trend. Even when excluding these categories, the figures consistently indicate disproportionate growth in the number of incidents concerning people recorded with mental health challenges. Per these results, the growth over the 2008–2022 period was somewhere in the 349 to 405% region and in all instances far exceeding the general trends in the data (24 to 71%).

Results from supplementary analyses

Figures S1 and S2 report the results from our supplementary analyses of the risk of temporal and geographical variation in registration practices. Contrary to what we would expect if changing registration practices were an important challenge for our main results, the share of people characterized by our wordlist approach as someone with mental health challenges who had prior contact with the mental healthcare services *increased* over our data

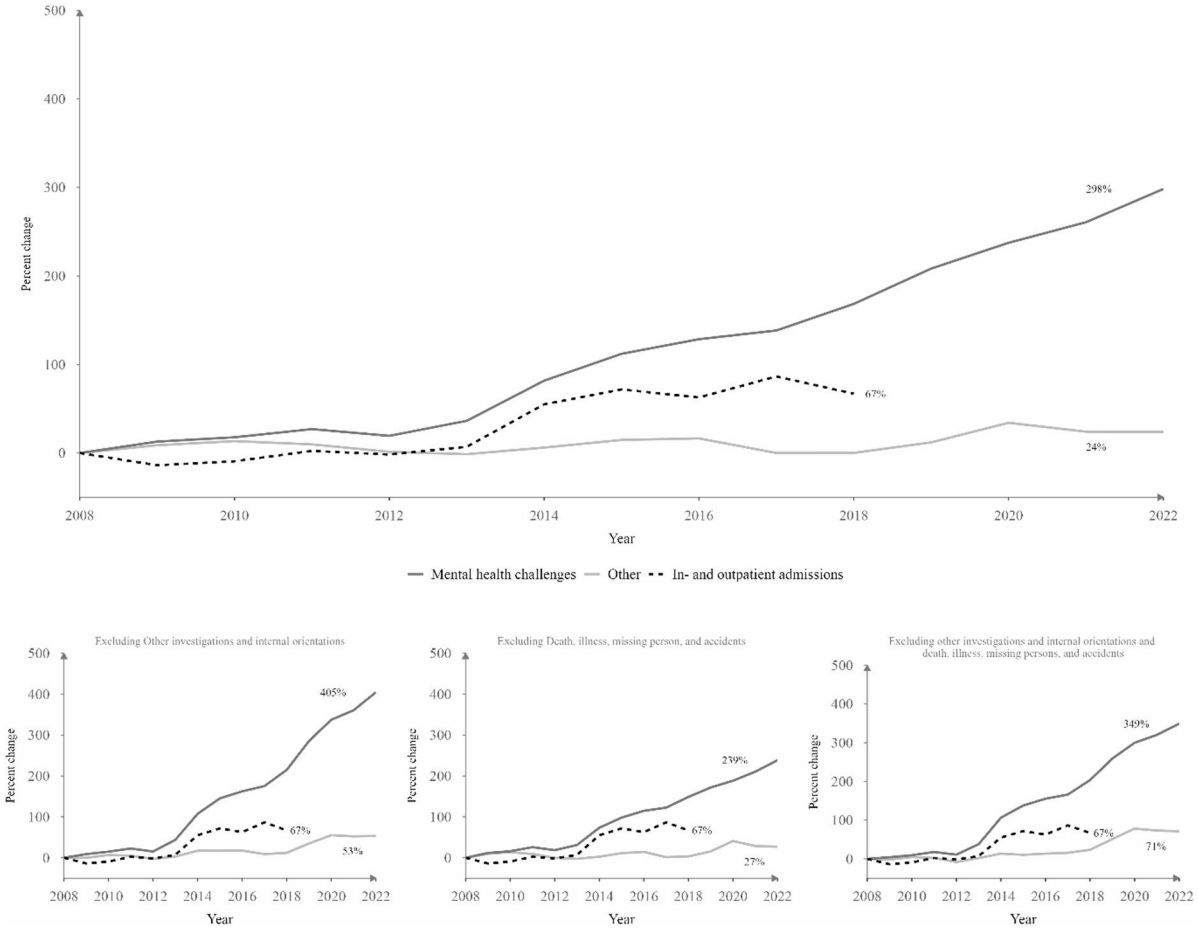

Fig. 3. Percent change in the number of incidents concerning people recorded with mental health challenges, in all incidents in the 28-case-type-subset, and in the number of in- and outpatient contacts with psychiatric hospitals in Denmark 2008–2022. Overall and when excluding specific case types. Note Figure shows the percentage change relative to levels in 2008 (which are hence set to 0). Results for in- and outpatient admissions are identical across the panels.

period, from around 65% in 2008 to almost 75% in 2018 (the last year for which we have data on prior contact, Figure S1). And Figure S2 shows that the trends in the data are very parallel when split by police jurisdiction, which seems incompatible with local interpretations and priorities playing a major role in our main results. This pattern has one massive outlier jurisdiction, however, which follows a distinctively different trend. But when we exclude all data from this outlier jurisdiction and rerun our main analyses, results change only marginally (Figures S3-S5).

Discussion

There has been a major increase in the number of police tasks related to people recorded as having mental health challenges over the 2008–2022 period in Denmark, even if we consider the general trend in police tasks and even if we consider the general trend in the population's need for psychiatric hospital care. Depending on how one treats case types that could include incidents that are either administrative or could reflect the prevalence of age-related disease in the population, the increase is between 239 and 405%, with between 24 and 71% stemming from a general increase. Results which exclude case types that might include administrative tasks show a 405% increase in incidents concerning people with mental health problems (with 53% attributable to a general increase in police tasks). The increase is general in the sense that it is fairly evenly distributed across case types over the period (at least once "internal orientations and other investigations" are excluded). These are the overall conclusions we draw from our quantitative study of data from an unprecedented number of police incident descriptions registered in the Danish National Police's registration system.

Our findings show that when the police encounter people, officers increasingly record mental health challenges as playing a key role behind the reasons for the encounter. How do police adapt to this trend? Various policies and programs are being implemented in several countries. For instance, a review of studies on crisis intervention teams (one type of police training) finds that although such teams benefit officer satisfaction and self-perceived reduction in use of force, there is little evidence of effects on "hard" outcomes like arrests, officer or citizen injury, or actual use of force[16]. One reason for this finding could be that many crisis intervention training

programs are very short, down to about 40 h[17]. A recent quasi-experimental study, however, found positive effects of mobile crisis intervention teams on avoiding unnecessary transport to the hospital and reducing police use of force[18]. Somewhat similar efforts were implemented in a pilot study in Denmark during August 2019 to June 2021 where health personnel co-rode with police to encounters that involved people with known mental health challenges, the FUT-program (*Fælles Udryknings Teams*). A qualitative (police internal) evaluation of the pilot program points to likely benefits of the program[19].

Our results invite more fundamental discussions about whether the increasing need for administering people with mental health challenges in the community is best solved by the police or whether (some of) the tasks might be better solved by health (or related) personnel. At the core of this discussion stands the challenge that the handling of people with mental health challenges is characterized by features of both safety and public health, a duality which may make police presence an automated approach to staying safe. The safety/public health duality is also evident in the highly complex position which police officers (and other first responders)—per qualitative research—find themselves in when responding to situations involving people in mental health crises[6].

Some programs aim to diverge emergency calls related to mental health crises to mental health professionals instead of the police, thereby separating mental health crises from police tasks. The oldest such program, the Crisis Assistance Helping Out On The Streets (CAHOOTS) program which started in 1989 in Eugene, Oregon, seems to have been successful: Out of 24,000 CAHOOTS calls in 2019, police assistance was only required 150 times[20], indicating that perhaps police presence is not necessarily required to handle people in need of care very often. Further evidence exploits the gradual rollout of CAHOOTS across time of day and to the neighboring city of Springfield to show a 24% points reduction in arrest rates (from a baseline of 32%)[21]. In addition, CAHOOTS causes higher take-up of care services, leading the research team to conclude that the program has high public value and suggests that this type of program can function as supportive complementarity to police[21]. Still, in Spring of 2025 CAHOOTS in Eugene was discontinued following budget cuts, and the program is now only available in Springfield[22].

At an even broader level, our study invites debates over how to balance limited public finances with human rights. The studies mentioned above indicate that some police encounters with people with mental health challenges might have been resolved without police interference if first handled by other caregivers. The United Nation's Convention on the Rights of Persons with Disabilities encourages that persons with mental health challenges should be handled by non-police authorities such as health professionals[23]. Moreover, again emphasizing human rights, some argue that the handling of people with mental health challenges should not be individual-focused (e.g., forcefully removing and treating people in mental health crises), but instead focus on how to integrate such persons into the community via home treatment and paid job placement, for example, which again seems to place responsibility for the issue outside the police[24]. Reversely, a very strong human rights focus could also drive (some of) the increase in police tasks related to people with mental health challenges that we document in our results. This would be the case if psychiatric staff and employees at assisted housing units, for example, felt the need to involve police in specific situations to rest assure they do not violate patient rights.

The most obvious limiting feature of our study concerns that data is derived from descriptions of encounters between police officers and people. Results could be driven by changing registration practices and the priorities of local police units, as was already discussed at length. We provided evidence to suggest that the impact of changing registration practices is likely limited in our data, as we observe limited geographical variation in the trends (except for one police jurisdiction, yet our main results reproduce when excluding this area from analysis) and as the share of the relevant encounters that concerned people with a history of help seeking in the mental health service was constant or even increasing over the period (if results were driven by interpretive changes among police and the public, we would expect the share to decrease). Our analysis of this important limiting feature is, however, imperfect, and we of course invite researchers to engage with the topic in future studies. We see five promising directions: First, a diachronic analysis of the language used in incident reports could help identify shifts in terminology over time, allowing for the development of year-specific wordlists. Second, collaboration with police departments across different regions could provide insights into local linguistic practices, enabling the creation of region-specific wordlists. Third, regular updates to the wordlist throughout the study period, informed by emerging mental health literature and changing societal attitudes, could help maintain its relevance and effectiveness. Fourth, a more qualitative approach, such as periodic manual review of a sample of incidents, could help identify emerging terms or phrases that should be incorporated into the wordlist. This could also help in understanding the context in which certain terms are used, which might change over time even if the terms themselves remain constant. And fifth, "new" methods such as natural language processing and/or algorithmic approaches could potentially offer powerful alternatives to the wordlist approach, including far more features of each case to identify mental health challenges.

A second limitation concerns the transferability of results to other contexts. This is because Denmark constitutes a special context both in terms of police and the mental healthcare system. Police in Denmark are trained in handling people in mental health crises. In terms of mental healthcare, this area is covered by the universality of the Danish welfare state, implying that people may seek help through high quality public institutions without facing financial constraints related to out-of-pocket payments. These features of our study context could challenge how well results apply to other contexts where people may face other strains in relation to the police and the mental healthcare system. We invite future studies to replicate our findings in other contexts. One study finds substantial variation in the effects of police response programs across countries, for example, supporting the idea that country contexts are important[20]. The Danish case is likely to be special, but it is worthwhile to note that the Danish police training in handling people in mental health crises consists of a short two-day program (and some supervised practical fieldwork), police work is almost always cast in the shadow of security, and the mental healthcare system is overburdened (implying that many people seek private alternatives, whereby out-of-pocket payment arises), perhaps offering some comparison to other contexts.

Data availability

Data behind the study are restricted and can only be accessed at the Danish National Police following a clearance process including risk assessment. Aggregate data corresponding to those described in this study may be accessed following approval from the Danish National Police and following approval of study protocol. For additional information, please contact the corresponding author.

Received: 2 May 2025; Accepted: 14 November 2025
Published online: 29 December 2025

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Author contributions

LHA, CH, MTB, and LNM designed the study. TK processed data at the Danish National Police and ran all analyses under the supervision of LHA, CH, MTB, and LNM. LHA and CH took main responsibility for drafting and revising the manuscript which was read, commented on, and revised by all authors. All authors approved submission of the manuscript for peer review and publication.

Funding

Authors LHA, CH, and TW funded by the ROCKWOOL Foundation (grant no. 1223). The funder – the ROCKWOOL Foundation (grant no. 1223) – had no influence on the study design or the interpretation of results. Authors MTB and LNM report no funding.

Declarations

Competing interests

The authors declare no competing interests.

Additional information

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1038/s41598-025-29238-1.

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