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Nearly 7% of the Population Has Limitations in Daily Life as a Result of a Mental, Intellectual, or Cognitive Disorder

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The identification of people suffering from mental, intellectual or cognitive impairments (*limitations psychiques, intellectuelles ou cognitives*, PIC), presented in this article, is the result of an indicator created from an algorithm based on consumption data from the National Health Data System (*Système National des Données de santé*, SNDS).

Mental health disorders are defined as psychosocial difficulties with emotional, relational, and behavioural manifestations. These disorders can have an impact on a person's social and professional life. Intellectual impairments arise from a reduced ability to learn, comprehend, and apply new competencies, which leads to altered cognitive functions. Cognitive impairments are characterised by reduced faculties in one or more aspects of cognition. The algorithm is unable to distinguish intellectual impairments from cognitive impairments.

In 2019, the algorithm identified 4.5 million people suffering from mental, intellectual, or cognitive impairments, resulting in limitations in their ability to perform everyday activities; that is, 6.6% of the population is identified in the SNDS. This population was, on average, aged 55 years, with a significant difference according to sex: the average age was 59.6 years for women and 49.8 years for men. Most of them experienced limitations after having a mental health disorder on their own (2.8 million) or following mental health disorders accompanied by intellectual or cognitive impairments (1.3 million), and only 266,000 experienced limitations as a result of intellectual or cognitive impairments without associated mental health disorders. On a geoFigureical level, the standardised rates of limitations varied little, ranging from 4.9% in the Haute-Savoie to 8.3% in the Creuse *département*. However, even though most of the *départements* had similar rates, the centre of France and Corsica had the highest rates, while the lowest rates were in the west of the Ile-de-France region, the Doubs and the Haute-Savoie *départements*. This unprecedented cartography may be of great use in developing health care policies and autonomy aimed at helping persons suffering from these impairments.

In France, to implement policies that concern people who suffer from handicaps or who experience a loss of autonomy, public authorities use various administrative data sources (Espagnacq and Regaert, 2023). These data sources, which are also used for studies and research[1] describe through data construction the situations of people who have been previously acknowledged as having a handicap or loss of autonomy. The originality of this study lies in its use of another administrative source,

[1] The interadministrative database of the *Établissements et Services Médico-Sociaux* (ESMS) [BADIANE], created by the French Directorate for Research, Studies, and Statistics (DREES), is a file used for studies and research, which brings together information relating to the functioning, activity, staff, and patients treated in medico-social institutions.

the National Health Data System (*Système National des Données de Santé*, SNDS), to analyse – based on health care consumption – the prevalence of limitations. This approach has the advantage, like surveys, of not having to depend on administrative acknowledgement.

The use of administrative data means that one can avoid certain downsides associated with declarative surveys (underdeclaration, memory bias, denial, anosognosia, etc.[2]), and it provides constantly available data over the long term, regardless of the age of the persons or wherever they live. That said, unlike declarative surveys, the National Health Data System (SNDS) includes very limited contextual data, and its limitations cannot be directly observed. However, based on a breakdown of health care consumption, it does identify the health problems accompanied by limitations that are significant enough to lead to repercussions on daily activities, such as the ability to go shopping, manage one's daily life, handle one's budget, and organise the day… (see Inset Method). The SNDS does

[2] Neurological disorders characterised by the patient's lack of knowledge about his or her illness (https://www.oed.com/search/dictionary/?scope=Entries&q=anosognosia&tl=true).

METHOD

Constitution of the algorithm

The algorithm used data from the National Health Data System (SNDS, *Système National des Données de Santé*) between 2012 and 2019 to identify the persons likely to suffer from restrictions in carrying out their everyday tasks after suffering from a mental, intellectual, or cognitive disorder (PIC). It identifies – based on health care consumption data over all the years – individuals with limitations in carrying out everyday tasks. Indeed, certain pathologies identified have a definitive character without necessarily being discerned every year (for example, a hospitalisation indicating a mental deficiency), and others may, at certain periods, not have any consequences on daily life (such as bipolar disorders). Hence, each year, the algorithm identifies the persons suffering from an impairment that has consequences for carrying out everyday tasks.

A data chain was subsequently used between 2012 and 2019 to identify the individuals involved in 2019 (Espagnacq and Regaert, 2024).

To determine the nature of the disorder, the algorithm identified 'markers' based on health care consumption and the information available in the SNDS data. The code of the International Classification of Diseases and Health Related Problems (ICD) was recuperated via the grounds for exoneration (chronic disease, long-term illness, work-related accident, or occupational disease) or via all the grounds for hospitalisation (Medical, surgical, and obstetrics (MSO), follow-up and rehabilitation care (FRC), which have been renamed medical and rehabilitation care (MRC) since 2022, or in a psychiatric unit). These ICD codes are used to identify diseases that can lead to mental, intellectual, or cognitive impairments. These impairments are then classified in accordance with whether they definitely result in limitations in carrying out everyday tasks (mental deficiency, Down syndrome, schizophrenia, Alzheimer's dementia, etc.) or whether the disorder potentially provokes a limitation in carrying out everyday activities (hydrocephalus, multiple sclerosis (MS), stroke, depression, bipolar disorders, addiction disorders, etc.). With regard to disorders considered 'potentially' leading to limitations, other markers are sought in the health care consumption data to confirm the presence of a limitation in carrying out daily activities, such as a psychiatric hospitalisation, a cure for addiction disorders, the dispensation of specific drugs, a treatment for speech therapy rehabilitation for those with cognitive or intellectual impairments, or in the origins of the grounds for exoneration (a long-term illness, disability pension, an occupational illness, etc.). In addition, other information available in the SNDS is also considered: one third is reimbursed because the person is under guardianship, the person is treated in a medical-social establishment (ESMS), or they receive the Disability Allowance for Adults (*Allocation aux Adultes Handicapés*, AAH). Hence, of the 16 million people identified as suffering from a disease that might cause limitations following the occurrence of these impairments, 6.6 million were identified as effectively having a limitation that caused difficulties in carrying out everyday activities between 2012 and 2019, and 4.5 million in 2019.

Limitations in carrying out everyday tasks

The International Classification of Diseases and Health Related Problems (ICD of the World Health Organisation (WHO, 2001)) provides a diagram that illustrates the relationships among health problems, deficiencies, restrictions in carrying out activities, and social interactions linked with the environmental and personal factors of individuals (Espagnacq and Regaert, 2024). When all these elements are considered, they identify situations of handicap. The SNDS data do not provide all of these elements of context and life to identify situations of handicap but do make it possible to identify the health problems and deficiencies that will result in functional limitations, including psychological, mental, or cognitive functions. Hence, these data meet the aim of identifying situations in which these limitations are sufficiently significant to lead to difficulties in carrying out everyday activities, such as going shopping, managing everyday tasks, one's budget, and organising the day.

Persons treated in Medical-Social Establishments (ESMS)

Since 2021, the SNDS has enabled the identification of some of the persons treated by medical-social establishments (ESMS); it is virtually exhaustive for people living in nursing homes (EHPADs), and eventually, the quality of the information about the establishments and services for adults and children will improve and make it easier to identify them. Similarly, the underestimation resulting from this non-exhaustivity does not have a significant effect on the overall result of the algorithm, as, on the one hand, these persons are identified mainly through their health care consumption (only the identification of their place of residence is missing), and on the other hand, the total number of people is fairly small compared with the population as a whole. The results presented are taken from an analysis conducted in the SNDS in February 2024.

not enable the precise identification of the nature of the limitations but only makes it possible to deduce from health care consumption the limitations from which people suffer. Hence, the two information sources are complementary. In France, the first survey devoted to persons with a handicap – entitled « *Handicaps, Incapacités, Dépendance* (HID) » – dates to 1998 (Mormiche, 2003; Ravaud, 2002). The second survey of this kind, the « *Handicap Santé* » (HS-Bouvier, 2012) survey, was conducted in 2008, and the results of the next survey – the 2022 « *Autonomie* » survey – will soon be available (Rey, 2023). These surveys, which provide a wealth of information about how to identify people with handicaps and a wealth of contextual data, are rarely conducted given their complexity and cost. Furthermore, a weak point remains: aside from the « *Vie Quotidienne et Santé* » (VQS) surveys conducted in 2014 and 2021, few of them are representative at the regional or subregional level, which limits geoFigureical studies in this field. However, the management of administrative acknowledgements of handicap via the Departmental Homes for Disabled Persons (*Maisons Départementales des Personnes Handicapées*, MDPH), as well as certain funding sources (Disability Compensation Allowance (PCH), Personal Independence Allowance (APA), etc.), are conducted on a departmental level.

The project « *Réalisation d'Identification des Personnes en Situation de Handicap* »(RISH) set out to identify people who experience difficulties in carrying out their daily activities in accordance with the nature of their impairments based on health care consumption data provided by the SNDS. Four algorithms have been developed: the first identifies people who experience difficulties in carrying out their daily activities following a mobility or organic disorder; the second identifies people who experience difficulties in carrying out their daily activities following a mental, intellectual, or cognitive disorder; the third focuses on the limitations that result from visual impairments; and the fourth focuses on the limitations that result from hearing impairments. An initial study was conducted on persons who experienced limitations in carrying out activities as a result of mobility or organic impairments (Espagnacq et al., 2023a); two reports about the construction of the algorithms were published: one relating to mobility and organic impairments (Espagnacq et al., 2023b) and the other relating to mental, intellectual, or cognitive impairments (Espagnacq and Regaert, 2024).

Mental health disorders are a range of pathologies with varied causes and factors that are responsible for psychosocial difficulties, with emotional, relational, and behavioural manifestations. These manifestations can affect the social and professional lives of these people, although the severity of their symptoms is highly heterogeneous. The impairments that have possible functional and marginalising effects generally include psychotic impairments, bipolar impairments, persistent depression, and even certain personality disorders, and addiction impairments. Intellectual impairments – which emerge in childhood – are the result of a diminished ability to learn, comprehend new or complex information, and apply new competencies, which leads to altered function of all the related cognitive mechanisms. Cognitive impairments are characterised by diminished faculties in one or more areas of cognition. Cognition comprises, for example, attention, memory, visual-spatial (sense of orientation, perception of objects, etc.), language, and executive (planning, cognitive flexibility, inhibitory control, etc.) functions.

In light of the data used, cognitive impairments and intellectual impairments cannot be distinguished (see Inset Method). Mental health disorders are subject to specific identification. It is therefore possible to distinguish three categories of population: individuals who exclusively suffer from mental health disorders, those who have solely cognitive or intellectual impairments, and persons who have both impairments. This accumulation of disorders may arise from two distinct disorders (for example, a psychiatric hospitalisation and a chronic condition with a "mental deficiency" code or a person hospitalised for "addiction disorders" and an "attention deficit hyperactivity disorder-ADHD"), or the person has an identified illness that may provoke both a mental disorder and an intellectual or cognitive disorder (such as autism spectrum disorder-ASD or Alzheimer dementia).

Context

This study, which follows in the wake of a previously published study into mobility and organic impairments, was conducted in the framework of the RISH (« *Réalisation d'Identification des Personnes en Situation de Handicap* ») project, which is based on data provided by the National Health Data System (*Système National des Données de Santé*, SNDS). This project was the winner of wave 3 of the call for expressions of interest (*Appel à Manifestation d'Intérêt*, AMI) of the Health Data Hub (HDH), enabling the funding of the experts who validated the medical part of the project. The algorithms are available in the open library of health care algorithms (*Bibliothèque Ouverte des Algorithmes de Santé*, BOAS) : https://gitlab.com/healthdatahub/boas/irdes/rish

Population structures according to sex and age differed greatly according to the nature of the disorder

According to the algorithm, in 2019, 4.5 million people had limitations in performing everyday tasks (see Inset Method) following the occurrence of a mental, intellectual, or cognitive disorder; that is, 6.6% of the population lived in France. The ratio was greater among women (7.5%) than

F1

Age pyramid of persons suffering from a limitation following the occurrence of an intellectual or cognitive disorder (a), or a metal impairment (b), or a mental and intellectual or cognitive disorder (c), in 2019

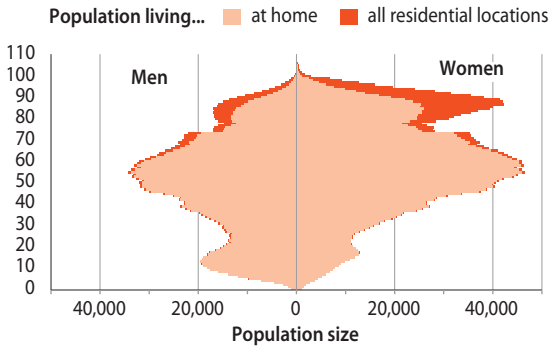
Scope: Data for living persons on 31 December 2019 (all ages and all residential locations), present in the National Health Data System (*Système National des Données de Santé*, SNDS-all schemes).

Source: SNDS 2012-2019.

Download the data

F2

Age pyramid of persons suffering from a limitation following the occurrence of a mental, intellectual, or cognitive disorder on 31 December 2019, at home and in other residential locations



Scope: Data for living persons on 31 December 2019 (all ages and all residential locations), present in the National Health Data System (*Système National des Données de Santé*, SNDS-all schemes).

Source: SNDS 2012-2019.

Download the data

among men (5.6%). Amongst the youngest members of the population, this situation was marginal but slightly more common among men: 3% of the male population compared with 1% of the female population, under the age of 15. There was a slight increase in adulthood, with a slightly greater incidence among women. This proportion increased significantly among very elderly people, particularly among women: 27% of the female population was over the age of 85, compared with 16% of the male population. The average age of the persons suffering from limitations following the occurrence of the three disorders differed with age: 60 for women and 50 for men.

The three subpopulations (persons suffering exclusively from intellectual or cognitive impairments, exclusively with mental health disorders, and with mental and intellectual or cognitive impairments) had very different structures depending on sex and age. Fewer people suffer exclusively from intellectual or cognitive impairments: fewer than 300,000 people (see Figure 1a). On overage, these people were 50 years old; a quarter of them were under the age of twenty, and the proportion of men was 57%. Amongst the youngest persons, the population was most often male, with congenital impairments, and, among the oldest persons, the population suffered from specific neurological illnesses, without an associated mental disorder. Mental disorders affected the largest segment of the population – 2.9 million people (see Figure 1b) – with an average age, depending on sex – that was relatively similar and fairly young: 49 for men and 52 for women. Among the youngest people, the population was more likely to be male. While the rate of limitations resulting from mental disorders was greater among young men under the age of 20, the situation was subsequently inversed. Regardless of sex, the proportion of persons affected by a limitation following the occurrence of a mental disorder has greatly increased, but it has increased more

among women (Espagnacq and Regaert, 2024). Finally, the population of people with both mental and intellectual or cognitive disorders comprised 1.3 million people. The average age was 61 for men and 70 for women, with a predominantly male population at the youngest ages and a predominantly female population among the very elderly (see Figure 1c).

As of the age of 35, women were more affected by limitations following the occurrence of a mental health disorder

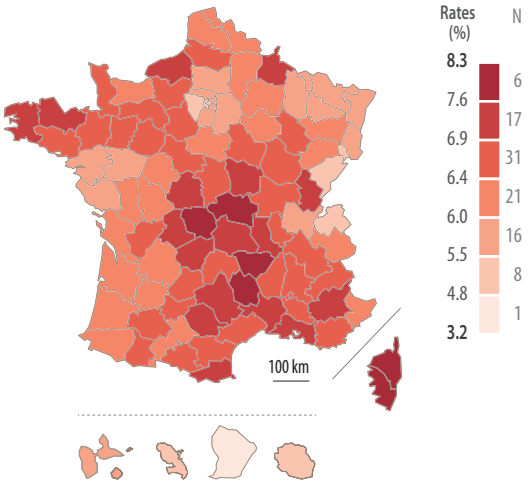
Men – above all young men – were more affected by exclusively intellectual or cognitive disorders. However, the proportion of women affected by exclusively mental or mental and intellectual or cognitive disorders was greater: 61% and 57%, respectively. For exclusively mental disorders, the greater ratio among women began at the age of 35, whereas for mental health and intellectual or cognitive disorders, the ratio was greater much later, after the age of 75. Furthermore, as illustrated in Figure 2, gender differences also existed among people residing at home but increased significantly among very elderly people as the proportion of persons living in OAP homes increased. Owing to the difference in mortality between men and women, older men were less likely to be widowers at the same age and therefore to live alone. This situation limited their risk of being institutionalised. Conversely, women of the same age were more often widows and lived alone, which increased the risk of institutionalisation as a result of cognitive impairments. This situation explains the large proportion of old women living in institutions identified as having one of these impairments: after the age of 80, half of them were living in an institution, compared with a third of men (see Figure 2).

Rates of limitations following the occurrence of mental, intellectual, or cognitive impairment were higher in the centre of France and in Corsica and lower in the west of the Île-de-France area, in the Doubs and Haute-Savoie *départements*

As the structure differed according to age within the *départements*, the rates of functional limitations were standardised to enable comparison (see Maps 1 to 3). This standardisation was based on the average structure of the French population that included all the French *départements*, including the overseas *départements*, except for Mayotte, due to incomplete data. In mainland France, the variation in the standardised rates of limitations following the occurrence of mental, intellectual, or cognitive impairment varied from 4.9% for the Haute-Savoie to 8.3% for the Creuse *département*. Most of the *départements* had fairly similar rates of limitations.

M1

Standardised rates of limitations following the occurrence of a mental, intellectual, or cognitive disorder according to French *départements* in 2019



Classes: Natural threshold method (Jenks algorithm), which enables the creation of homogenous classes. Indeed, this algorithm is designed to find the number of classes sought by minimising the intraclass variance and maximising interclass variance.

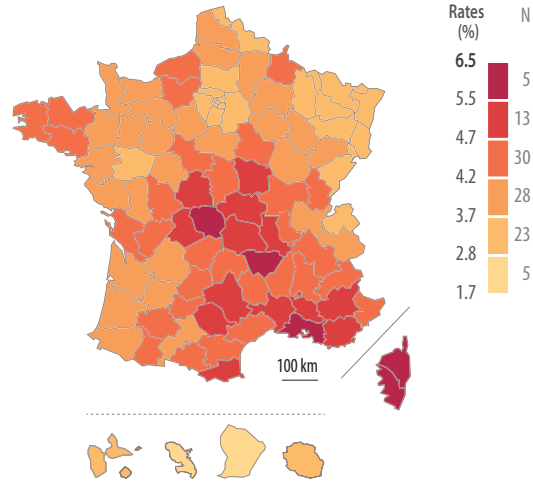
Scope: Data for living persons on 31 December 2019 (all ages and all residential locations), present in the National Health Data System (*Système National des Données de Santé*, SNDS-all schemes).

Source: SNDS 2012-2019.

Download the data

M2

Standardised rates of limitations following the occurrence of mental health disorders according to French *départements* in 2019



Classes: Natural threshold method (Jenks algorithm), which enables the creation of homogenous classes. Indeed, this algorithm is designed to find the number of classes sought by minimising the intraclass variance and maximising interclass variance.

Scope: Persons experiencing limitations following the occurrence of an exclusively mental disorder, without an intellectual or cognitive disorder, on 31 December 2019 (all ages and all residential locations), present in the National Health Data System (*Système National des Données de Santé*, SNDS-all schemes).

Source: SNDS 2012-2019.

Download the data

Indeed, fewer than ten *départements* had standardised rates of limitations well above the average and the same proportion well below. However, there was regional continuity in mainland France, with the central area of France distinguished by these limitations (the Creuse, Lozère, Haute-Loire, etc.), and the neighbouring *départements* with high but less significant rates, extending to Brittany and part of Normandy (see Map 1). The rates were also very high in Corsica. Conversely, the lowest rates were located in the west of the Ile-de-France region, in the Doubs and in the Haute-Savoie *départements*.

Given the population numbers, exclusively cognitive or intellectual impairments were taken into account with mental and intellectual or cognitive impairments (see Map 3). Certain *départements* seemed to be specifically affected by limitations following the occurrence of a disorder involving a cognitive or intellectual deficiency (associated or not associated with a mental disorder), such as the Aveyron and Lozère *départements*. Others were more affected by limitations following the occurrence of exclusively mental health disorders (see Map 2): Corsica and the Bouches-du-Rhône. The Creuse *département* was affected by both categories of impairment. The Ardennes and the centre of France were also in a situation in which there was an accumulation of impairments; that is, these *départements* had rates above the average for both categories of impairment but not being the highest in each category. Taken together, the accumulation of these impairments explains the high standardised rates (see Map 1).

The Aveyron, Indre, and Creuse *départements* were distinguished by limitations under the age of 20

The rates of limitation varied significantly with age, shifting on average from the national level at 2.5% before the age of 20 to 6% between the ages of 20 and 59, 9% between 60 and 79, and 20% after the age of 80. Regional differences were visible from the youngest ages (see Maps 4, p. 7), with rates ranging from 1.2% in the Belfort municipality to 5.6% in the Creuse *département*. Three *départements* had rates above 5%: Aveyron, Indre, and Creuse. For persons aged between 20 and 59, four *départements* had rates above 8%: Corsica, the Allier, the Haute-Loire and the Creuse. Between the ages of 60 and 79, the centre of France still had *départements* with relatively high rates, but the highest rates were in the south: the Bouches-du-Rhône and Corsica. After the age of 80, the centre of France comprised *départements* with high rates, along with the north of Brittany. Amongst persons under the age of 60, the *départements* that had a lower incidence of limitations were those in the region of Ile-de-France, and the Haute-Savoie. For people over the age of 60, the *départements* with the lowest rates were located more to the east of France, and the Ile-de-France region was not much different.

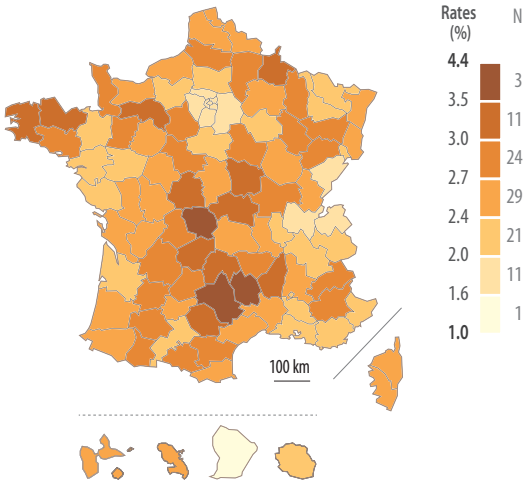
A possible underestimation of identification in the overseas *départements*, particularly for mental health disorders

Guyana had rates of limitations that were far below the national average, a situation that was undoubtedly due to underidentification of limitations with the algorithm data. This underidentification may be explained by a more limited health care offering, which results in less use. With regard to the other overseas *départements*, the rates of limitations following the occurrence of a mental, intellectual, or cognitive disorder were also lower than the average in mainland France but in a less marked way (see Map 2). These less significant rates seemed to be due to limitations following the occurrence of a lower incidence of exclusively mental disorders (see Map 2), particularly in Martinique, while the rates of limitations following the occurrence of intellectual or cognitive impairments (or mental and intellectual or cognitive) were similar to the national average (see Map 3).

While the vast majority of French *départements* had similar rates of limitations, this study highlights the specificity of certain *départements*. These disparities may result from significant rates of limitations at certain ages or in accordance with the nature of the impairments. Certain *départements* were distinguished by impairments that commenced in childhood and persisted with age, with high levels regardless of the nature of the dis-

M3

Standardised rates of limitations following the occurrence of intellectual or cognitive impairments, according to French *départements*, in 2019



Classes: Natural threshold method (Jenks algorithm), which enables the creation of homogenous classes. Indeed, this algorithm is designed to find the number of classes sought by minimising the intraclass variance and maximising interclass variance.

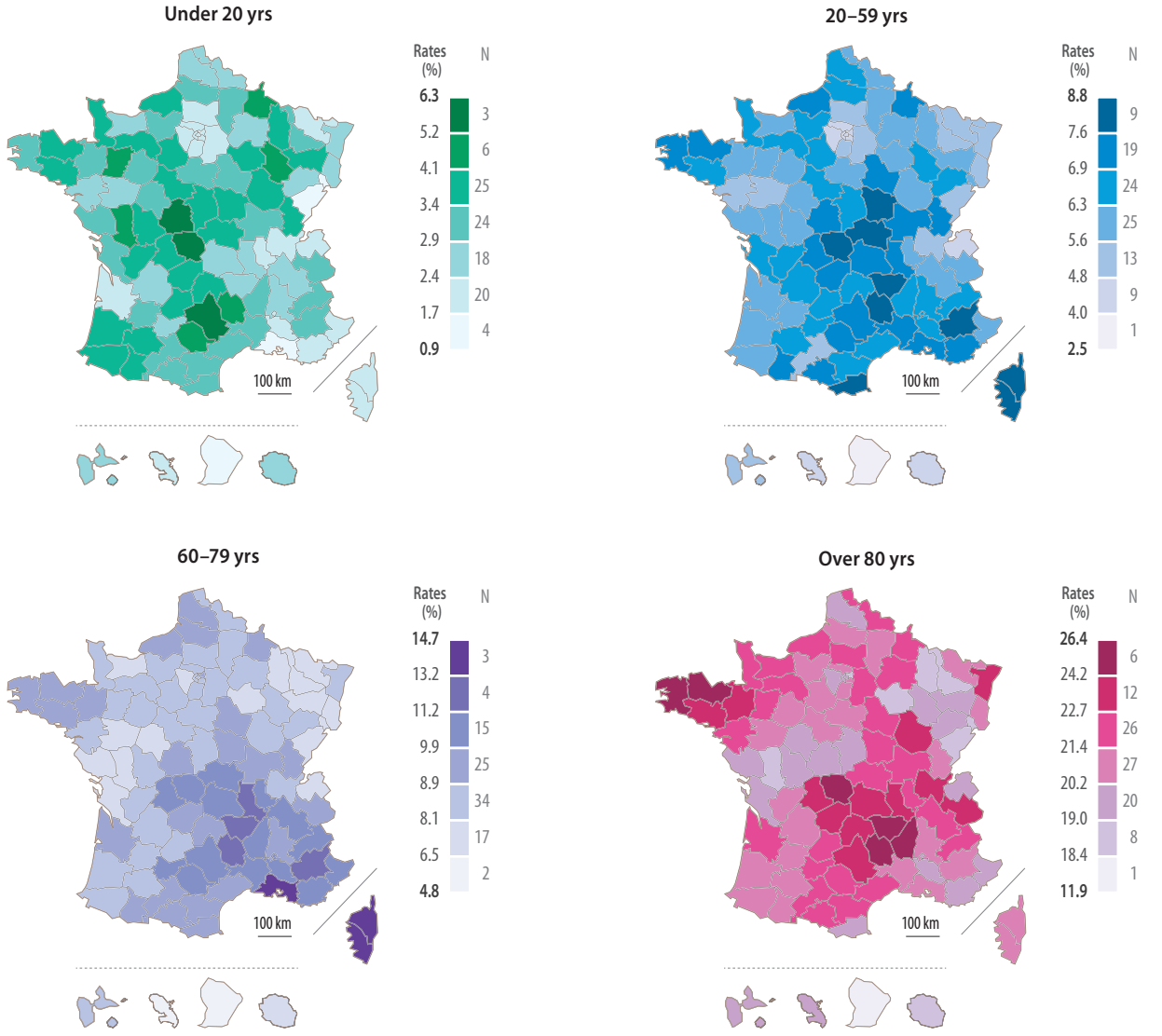
Scope: Persons experiencing limitations following the occurrence of an exclusively mental disorder, without an intellectual or cognitive disorder, on 31 December 2019 (all ages and all residential locations), present in the National Health Data System (*Système National des Données de Santé*, SNDS-all schemes).

Source: SNDS 2012-2019.

Download the data

M4

Rate of limitations following the occurrence of a mental, intellectual, or cognitive disorder according to age and French *départements* in 2019



Classes: Natural threshold method (Jenks algorithm), which enables the creation of homogenous classes. Indeed, this algorithm is designed to find the number of classes sought by minimising the intraclass variance and maximising interclass variance.

Scope: Data for living persons on 31 December 2019 (all ages and all residential locations), present in the National Health Data System (*Système National des Données de Santé*, SNDS-all schemes).

Source: SNDS 2012-2019.

Download the data

order, such as the Creuse and the Haute-Loire *départements*. Other *départements,* such as Corsica and the Bouches-du-Rhône *département,* had significant rates of limitations arising from mental health disorders. In other *départements*, the specificity seemed to result from high proportions of elderly persons, such as those in northern Brittany and the south of the centre of France. The algorithm also identified the *départements* that were less affected by limitations following the occurrence of these impairments, such as the Ile-de-France region before the age of 60 and the Haute-Savoie at all ages. These *départements* seemed to be less marked by limitations that included an intellectual or cognitive disorder. These results enable the *départements* with the most vulnerable populations to be targeted. Furthermore, by comparing them with the results already presented about regional disparities concerning the rates of limitations following the occurrence of mobility and organic impairments (Espagnacq et al., 2023a), it will be possible to produce a map of the *départements* that have specificities according to the nature of the disorder and those that accumulate limitations.

* * *

Disparities in access to health care and the presence of medical-social establishments may slightly influ-

ence the rates of limitations in the *départements*. In some of them, medical equipment density was much higher than the national average, such as in the Lozère or Creuse *départements* (DREES, INJEP, 2021). Similarly, follow-up by a medical-social establishment (ESMS) was an identification marker for fewer than 100,000 people in the algorithm. Indeed, the main identification markers in the National Health Data System (SNDS) were not very sensitive to regional disparities: grounds for exoneration, the dispensation of drugs, and grounds for hospitalisation (Espagnacq and Regaert, 2024).

The algorithm developed comprises biases inherent to the data source: it enables identification only if the person consumes health care covered by the French National Health Insurance system (*Assurance maladie*). These elements undoubtedly resulted in an underestimation of persons with intellectual or cognitive impairments that emerged during childhood. With regard to these populations, the identification of adults was certainly less effective. Indeed, certain diagnoses are recent: autism spectrum disorders (ASD) have been diagnosed by the DMS-V since 2013 (previously diagnosed with the CIM in 1993 with the code pervasive developmental disorders-PDD). Likewise, the diagnostic criteria for attention deficit hyperactivity disorder (ADHD) with or without attention deficit disorder (ADD) were defined for the first time in the DSM-III in 1980 (Ponnou, 2022). Hence, as the older persons were not diagnosed during their childhood, they were not identified. Furthermore, as intellectual or cognitive impairments are mainly treated in the medicosocial sector, they are not always clearly identified in the SNDS data (see Inset Method). For example, 15% of the persons identified in a medical educational institute (MEI) in the SNDS had no other marker than this monitoring in their health care consumption. Hence, the persons who were no longer in these establishments after 2019 and who did not have a specific marker were not identified. As the data provided by medical-social establishments (ESMS) are being increasingly communicated, identification will also become increasingly comprehensive, and a monitoring record could be established to record a stay in a ESMS even when the person has left. The data from the Departmental Homes for Disabled Persons (MDPH) must also be integrated in the short term into the SNDS, which will enable the identification of persons who are less well identified through their health care consumption and make it possible to develop the algorithm. However, this bias is minimal, as the adult persons registered on the Disabled Adult Allowance (AAH) scheme, who receive a disability pension and are under guardianship and treated by ESMS, are already considered in the algorithm (Espagnacq and Regaert, 2024).

When the data are available, it will also be possible to observe and fine tune the algorithm's sensitivity and specificity by comparing the results with the declarative data, such as those from the « *Autonomie* » survey. Indeed, a preliminary study to compare the results with the data from the VQS survey, which was not matched with the SNDS data, revealed that the overall numbers in the two sources are comparable, but it seems that there was an underdeclaration of mental health disorders in the "VQS" survey and less effective identification of cognitive impairments linked with very elderly persons with the algorithm (Espagnacq and Regaert, 2024). It is likely that certain diagnoses of neurovegetative diseases do not result in an acknowledgement of a long-term disease (ALD) or that no rehabilitation is received, particularly for very elderly people with multiple pathologies who live at home, which results in a less effective identification by the algorithm. This work will continue with a study of data from surveys matched with the SNDS ("VQS" and « *Autonomie* » surveys), which will enable the joint analysis of the differences between the results of the algorithm and those from the declarative data. Another comparison will be conducted with the survey « *Prestation de Compensation du Handicap: Exécution dans la Durée et Reste à Charge* » (PHEDRE), matched with the SNDS data from 2012 to 2022, which will complement the results presented in this article. ♦

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FOR FURTHER INFORMATIONS

- Bouvier G. (2012). « Les faux négatifs du volet ménage de l'enquête Handicap-Santé 2008. Institutions » : https://journees-methodologie-statistique.insee.net/les-faux-negatifs-du-volet-menage-de-lenquete-handicap-sante-2008/
- D.R.E.E.S., Injep (2021). *Panorama Statistique/Jeunesse/Sport/Cohésion sociale*.
- Espagnacq M., Regaert C. (2024).« Faisabilité d'identification des personnes à risque de handicap (Fish) à partir des données du Système national des données de santé (SNDS). Méthodes et résultats de l'algorithme sur les troubles psychiques, intelletuels ou cognitifs ». Irdes, Rapport, n° 592, septembre.

For further informations (next)

- Espagnacq M., Sermet C., Regaert C., Daniel F. (2023a). « Des disparités de limitations motrices ou organiques importantes entre les départements ». Irdes, *Questions d'économie de la santé*, n° 276, mars.
- Espagnacq M., Sermet C. Regaert C., Daniel F. et Potdevin M. (2023b). « Faisabilité d'identification des personnes à risque de handicap (Fish) à partir des données du Système national des données de santé (SNDS). Méthodologie générale et résultats de l'algorithme sur les limitations motrices ou organiques. » Irdes, Rapport, n° 587, avril.
- Mormiche P. (2003). « L'enquête Handicaps, incapacités, dépendance : apports et limites ». *Revue française des affaires sociales*, n° 1-2, p. 11-29.
- Ponnou S. (2022). « Prévalence, diagnostic et médication de l'hyperactivité/TDAH en France ». *Annales médico-psychologiques, revue psychiatrique, Prévalence*, vol. 180, n° 10.
- Ravaud J. F., Letourmy A., Ville I. (2002). « Les méthodes de délimitation de la population handicapée : l'approche de l'enquête de l'Insee Vie quotidienne et santé ». Ined, *Population*, vol. 57, n° 3, p. 541-565.
- Rey M. (2023). « En France, une personne sur sept de 15 ans ou plus est handicapée, en 2021 ». Drees, *Etudes et résultats*, n° 1 254.

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