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Impact of the biopsychosocial model of disability on the medicolegal assessment of personal injury

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Abstract

Background The objective of this paper was to determine whether the medicolegal assessment of injured and disabled persons is based on the biopsychosocial model of disability proposed by the International Classification of Functioning, Disability, and Health.

Methods We searched for the word disability and other keywords, occurring alone or in combination as well as the meaning given to the word "disability" in two Belgian legal databases (JURA and STRADALEX) for the period from 1960 to 2020.

Results The use of the term disability has increased over time, more so from 2001 to 2010, in areas of public health law, labor relations, and personal injury law. Cross-referencing keywords revealed that incapacity (personal, domestic, or professional) reflecting the victim's disability from a legal perspective appears to be dominated by the impairment criterion.

Conclusions Although the biopsychosocial model of disability appears to be widely accepted by courts, medical experts have made few changes to their methodology of assessing personal injuries. We identify four potential factors that could explain the status quo.

Keywords International classification of functioning, Disability and health, Disability, Impairment, Activity limitation, Participation restrictions, Medicolegal assessment, Forensic assessment, Personal injury

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Text box 1. Contributions to the literature

- The restriction on societal participation is very strongly experienced by injured parties and constitutes the damage for which they seek compensation.
- Further research should be conducted to confirm the nature of the difficulties encountered by medical professionals in implementing a biopsychosocial model of disability in their medicolegal assessment.
- Once these difficulties have been correctly identified, the focus of further research should be on how to resolve them.

Background

Disability, as currently defined by the World Health Organization (WHO) [1, 2], comprises activity limitations or participation restrictions due to changes in physical (including sensory impairments) and/or mental (diverse cognitive impairments, psychiatric disorders, etc.) abilities. The limitations and restrictions experienced by an injured person result from the interaction between their personal characteristics (not only limitations, but also abilities) and an environment that can hinder or facilitate their full participation. The International Classification of Functioning, Disability and Health (ICF), endorsed by the World Health Assembly on 22 May 2001 through Resolution WHA54.21, is a framework for understanding functioning, disability and health at the individual and population levels. The ICF was designed to provide a common language for communication among all concerned with disability, a scientific basis for health-related research including research into determinants and outcomes and as a framework for data collection, across countries, professional disciplines, services and time. This classification describes three components of disability:

- *“Impairment”*. It is defined as any loss of substance or alteration of an anatomical structure (organs, limbs, and their components), or an organic or psychological function. Impairment refers to the injury aspect of disability for purposes of this paper. For example, loss of muscle strength (from a spinal cord injury) is an impairment.
- *Activity limitations*. This term describes the difficulties a person may face in performing a task or action, and relates to the functional aspect of the disability. For example, difficulty listening to music due to a hearing impairment or difficulty walking because of a loss of muscle strength are activity limitations.
- *Participation restrictions*. These comprise problems that a person may encounter when engaging

in real-life activities. These restrictions are strongly related to the environment, which can either help or hinder performance (in terms of concrete achievements). Participation restrictions refer to the situational or contextual aspect of disability. For example, difficulty in participating in a conversation due to a hearing impairment plus noise, or difficulty getting around because of stairs plus difficulty walking are restrictions on participation.

The ICF proposes two qualifiers for the description of activity limitations and participation restrictions: performance and capacity. Performance describes what a person does in their real environment, and capacity describes what a person does in a situation where the environment is not taken into account [3].

A person who suffers a personal injury from a road traffic accident, a workplace accident, or medical malpractice will generally have an impairment, which results in a limitation of activities, and, thus, a restriction on participation if they face barriers, such as the inability to get or keep a job. Therefore, the confrontation of the injured person with a situation that has become too demanding for their residual abilities creates the disability. Disability necessarily has a social or contextual dimension that must be addressed. The injured person therefore usually has a disability. People will perceive health in terms of its impact on their daily lives in their environmental context [4]. Therefore, when an injurious event occurs, although the diagnosis of injuries, signs, and symptoms is essential, particularly in determining the care to be provided, from the injured person's perspective, it is more meaningful to ascertain what they can or cannot do in their real life [5–7].

This approach to personal injury has been strengthened since the implementation of Article 22ter of the Belgian Constitution, which states that every person with a disability has the right to full inclusion in society, including the right to reasonable accommodation. People with disabilities should be able to access their physical environment, transport, facilities and services, information, and communication with as few barriers as possible. Reasonable adjustments are measures that adapt the environment to ensure mobility for everyone and ensure accessibility. This can include, for example, removing steps or installing a ramp to bypass stairs; measures to make it easier to move around premises by creating clear spaces, wide corridors, low door handles, and adapted lifts; considering alternatives to written content (video, spoken text or Braille) and many other measures.

Depending on the purpose of the claim, the injured party may be subject to different Belgian laws, such as labor law, social security law and personal injury law.

Labor law governs the relationship between an employer and an employee. In particular, it governs the formation, execution and cessation of employment contracts. Work is an important aspect of one's life. Disability affects both access to and retention in employment (including promotions). Neither European nor Belgian national legislation defines disabilities in the workplace, and the current definition is based on case law. The Court of Justice of the European Union defines disability as a limitation which results in long-term physical, mental, or psychological impairment that, in combination with various barriers, may hinder the full and effective participation of the individual in working life on an equal basis as of other workers. Reasonable adjustments made by the employer may result in the absence of a disability related to a specific impairment in a specific environment. They may include adjustments to working hours, structural modifications to the workplace [8] to improve accessibility, provision of modified task options, and purchase of equipment or devices to enable otherwise qualified workers with disabilities to perform the essential functions of their jobs. The Belgian law prohibits any direct or indirect discrimination against people based on certain protective criteria, including disability and physical characteristics [9]. For example, an employer's refusal to employ a driving instructor on the grounds of obesity; termination of the contract of a worker with a physical impairment resulting from an accident at work that has a long-term effect on his full participation in work life; refusal to make reasonable adjustments, without the employer demonstrating that these would have involved a disproportionate burden, and automatic exclusion of insulin-dependent patients with diabetes from the port sector have all been found to constitute discrimination on the grounds of health and disability.

Social security is the social institution which guarantees financial security in the event of specific social risks which threaten the acquisition of income (old age, unemployment, incapacity to work) or impose additional financial burdens (health care, children). It covers accidents at work, occupational diseases, health insurance, benefits for disabled people, increased family allowances and unemployment, social integration and social welfare. The aim of social security is to provide the same level of financial support to people with disabilities, not to correct the inappropriate features of their environment (although the financial support granted may help to finance the adaptations needed to remove certain barriers to social participation). In view of this social objective, the financial assistance granted is based on a medical assessment, mostly of an injury-related nature (physical or psychological) and, to a lesser extent, of a functional nature, determined according to a scale – the Belgian

official scale of disabilities. For example, this scale provides a degree of impairment as being 30% for total unilateral vision loss (absence of light perception; art. 724), 10%–30% for aphonia without dyspnea (art. 702), and 5%–30% for splenectomy (art. 450). The Belgian official scale of disabilities (approved by the Belgian Regent's Decree of February 12, 1946, and amended by the Belgian Royal Decrees of March 20, 1975; July 2, 1975; and January 6, 1976) was originally designed after World War I to determine the pensions of war veterans with war injuries caused by explosives and mutilating projectiles. Since then, it has been made compulsory only for certain social benefits and assessments conducted by the medicolegal office, an institution created within the Ministry of Public Health (OML), which deals exclusively with war injuries of civilians or military veterans. This scale was chosen by the legislator as a means of determining incapacity for the purpose of granting certain social benefits, such as increased family allowances or allowances reserved for disabled persons beyond the impact of war. It should be noted, however, that in 2018, the Secretary of State for People with Disabilities specified that, when assessing applications, medical assessors must be guided by the principles of the UN CRPD, in particular the principle of inclusion, which prioritizes active and effective participation in political, economic, social, and cultural life. An individual assessment must take into account all the elements related to the person's specific situation [10].

Personal injury law [11] requires that compensation to an injured person be comprehensive and *in concreto* – that is, considering the victim's specific situation, living conditions, characteristics, personality, age, physical and mental abilities, hobbies, needs, and the impact of the injury on their person. One of the aims of personal injury law liability is to restore, as accurately as possible, the balance that was destroyed by the harmful act and to put the victim back in the position that they would have been in if the harmful act had not occurred. Thus, damages are defined as the negative difference resulting from a comparison of the victim's current, actual situation since the harmful event versus the hypothetical situation that they would have been in if the harmful event had not occurred. However, personal injury law does not prescribe any particular method for assessing this negative difference. In the field of personal injury, damage (e.g., amputation, blindness, etc.) is an acquired fact that cannot be considered as not having occurred and that will persist. Other measures could restore the quality of the victim's interaction with their environment such as the adaptation of public spaces, homes [12, 13], workplaces, or vehicles as well as the assistance of a third person [14]. Since 2012, the medicolegal assessment of personal injury and its impact in Belgium has been based on a

trptych comprising of personal, domestic, and occupational incapacity [15]. Personal incapacity relates to the non-economic consequences of an injury on the physical and mental integrity of the injured person in their daily life, excluding domestic activities. This includes, in particular, the limitations and inconveniences in behavior, actions, and/or gestures of daily living that have been caused by the injury; the pain that is usually associated with the injury; the frustration and anxiety caused by the injury; the impact on personal activities, such as leisure, sports, and hobbies, and on social, friendship, and family relationships. Domestic incapacity is the limitation of the victim's energy or functioning that affects their ability to carry out domestic activities and which may require increased effort to perform. Domestic tasks may include raising children, looking after the house and garden, shopping and related travel, preparing meals, laundering clothes, budgeting, and pet care. Occupational incapacity comprises the consequences of the physical and mental injury on the victim's professional and gainful activities, as well as the impact on the victim's ability to compete in the labor market.

Given these shifts in defining incapacities especially in the role of context and the environmental barriers and facilitators, this study aimed to determine whether the medicolegal assessment of injured and disabled individuals is based on the biopsychosocial model of disability, proposed by the ICF; i.e., when applying the triptych framework, do assessors consider the injured person's functional status and the context in which the person functions.

Methods

This research involves an analysis of published case law, which includes the rulings handed down by the Belgian courts of the judicial system in the period from 1960 to 2020 and was researched using two databases: JURA and STRADALEX. Step one entailed a search of the two databases to extract relevant case reports. This retrospective documentary search based on the use of selected keywords was carried out by a single researcher (the first author).

JURA is a legal database created 25 years ago by the Dutch professional publisher Wolters Kluwer. It provides legal professionals access to a large amount of relevant legal information. The information is divided into three categories: case law, doctrine, and legislation.

STRADALEX, created by Lefebvre Sarrut Belgium, compiles in a single database, all case law, doctrine and legislation from official sources as well as from approximately 20 publishers. This database is intended to be as broad and comprehensive as possible. However, in this study, STRADALEX proved difficult to use because

of a large number of duplications of rulings that were published by different official sources or publishers. Moreover, as the keywords and abstracts did not always correspond to the published case, an irrelevant case may have been included in the search if the keyword appeared in the abstract. Conversely, the search missed judgments that were poorly referenced but relevant to the issues in question.

In the context of such research, the effect of publication cannot be ignored because Belgian case law is not published in its entirety. In the absence currently of an official national system for the systematic publication of rulings (although this has been periodically announced by the Minister of Justice), private publishers are the main sources of case law and they publish in a discretionary manner. Thus, in the absence of systematic official publications, our knowledge of Belgian case law remains limited to what is available [16]. Nonetheless, as publishers attempt to meet the expectations of their users and readers, we considered that the subjects and keywords used in the databases reflect the concerns and interests of these users and, by extension, those of contemporary society.

Duplicate rulings were counted only once in the relevant area of law, and the other selected copies were included in the "duplicate" category (Table 1). Some of the rulings selected by the browser contained the word "disability," without necessarily referring to an impairment of physical or mental integrity (e.g. an excessive selling price was a disability, the dismissal of a cook who had worked for the Disabled Persons' Fund, the lack of a residence permit hindered the integration of a foreigner into the world of work, etc.) or, where the judge did refer to it, the disability was a neutral factor (e.g. setting a maintenance contribution in the event of divorce in a family where one of the members suffered from a disability, illegal parking in a car park, etc.). Therefore, these judgments have been grouped under the category "Other." Each ruling was analyzed to determine the area of law it covered. These include labor law, social security law, tax law (including the calculation of tax payable by a person with a disability) and personal injury law (Table 1).

In the second step, we analyzed the case-law content with reference to the ICF biopsychosocial framework. We conducted an analysis based on the cross-referencing of keywords (in French): disability, impairment, activity limitations, incapacity, participation restrictions, personal injury, and participation. Given the similar pattern of occurrence of the word *disability* in the two databases (Table 2), this search was carried out on 1 May 2024 in the JURA database only. The use of singular or plural keywords had no effect on the results.

Table 1 Frequency of the term disability by number of rulings per decade and area of law

Categories	STRADALEX							JURA						
	1960–1970	1971–1980	1981–1990	1991–2000	2001–2010	2011–2020		1960–1970	1971–1980	1981–1990	1991–2000	2001–2010	2011–2020	
Employment	0	10	5	13	21	47		0	0	1	2	6	24	
Disabled persons’ allowances	4	98	101	320	203	105		0	0	1	4	2	12	
Supplementary family allowances	0	18	41	33	27	8		0	1	0	2	3	0	
Illness and disability insurance	0	38	15	25	40	22		0	0	2	1	2	2	
Accidents at work	0	14	10	11	29	17		0	0	0	3	4	5	
Work-related illnesses	0	2	1	3	8	11		0	0	0	2	0	0	
Social reclassification — social welfare	2	28	17	33	59	71		0	0	0	4	8	32	
Unemployment	0	6	7	12	29	29		0	0	0	1	2	2	
Pension — retirement	0	2	5	1	5	1		0	0	0	1	0	0	
Taxation	0	2	7	11	19	29		0	1	1	8	3	2	
Personal injury law	0	7	19	29	84	108		0	0	2	0	42	49	
Others	0	7	16	88	213	285		0	0	5	19	34	49	
Duplication	0	26	184	259	237	351		0	0	0	0	0	0	
Total by decade	6	248	428	838	974	1084		0	2	12	47	106	177	

Table 2 Cross-referencing of keywords

	Incapacity	Personal injury	Participation restrictions
Impairments	1575	1764	1
Activity limitations	41	16	1
Disability	151	78	0
Participation	139	106	0

Results

Increased use of the term disability

The first step in our analysis of published case law was to determine the frequency of the term *disability*, which was the main keyword in our search. It appeared 3,578 and 344 times in the STRADALEX and JURA databases, respectively (Fig. 1 and Table 1). In total, 2149 rulings were included in the analysis after excluding duplicates and rulings grouped under the category “Other” (Fig. 1).

Irrespective of the publication effect, the use of the term *disability* by courts has increased over time, particularly in 2001–2010 (Table 1 and Fig. 2a). This increase can be explained by the adoption of various legal instruments aimed at protecting people with disabilities against discrimination and ensuring their full participation in society, in particular the Belgian law of 27 February 1987 on allowances for disabled persons [17] and the Convention on the Rights of Persons with Disabilities (CRPD), which Belgium ratified on 2 July 2009.

Across both databases, it is clear that the concept of disability is most widely used in the fields of social security law, particularly in the area of benefits (i.e., income replacement or integration) that are granted to disabled people, as well as in the determination of measures for social assistance or for promoting the social integration of an injured person. Similarly, the concept of disability plays an important role in employment relations, particularly in the context of access to employment, job retention and promotion for disabled people. The frequency with which the term *disability* is used in these fields of law has increased in the past few decades (Fig. 2c and d). To a limited extent, albeit following the same evolutionary curve in STRADALEX and JURA, the term *disability* is found in litigation concerning compensation for personal injuries that result from an accident that is regulated under personal injury law (Fig. 2b), wherein *disability* is most often present in cases of so-called “wrongful life” and issues in the ability of the injured person to adapt to their new situation.

Searches based on keyword cross-referencing (Fig. 3) (step 2) show that the published case law mainly uses the term *disability* to refer to impairment ($n=80$) and, to a lesser extent, to participation in social life, work, or domestic activities ($n=41$), and least to activity limitations ($n=6$).

Furthermore, we attempted to highlight the interactions between disability and other components of personal injury. The term “*incapacity*” ($n=74,866$) is used more frequently than “*disability*” ($n=3,922$). Again, the

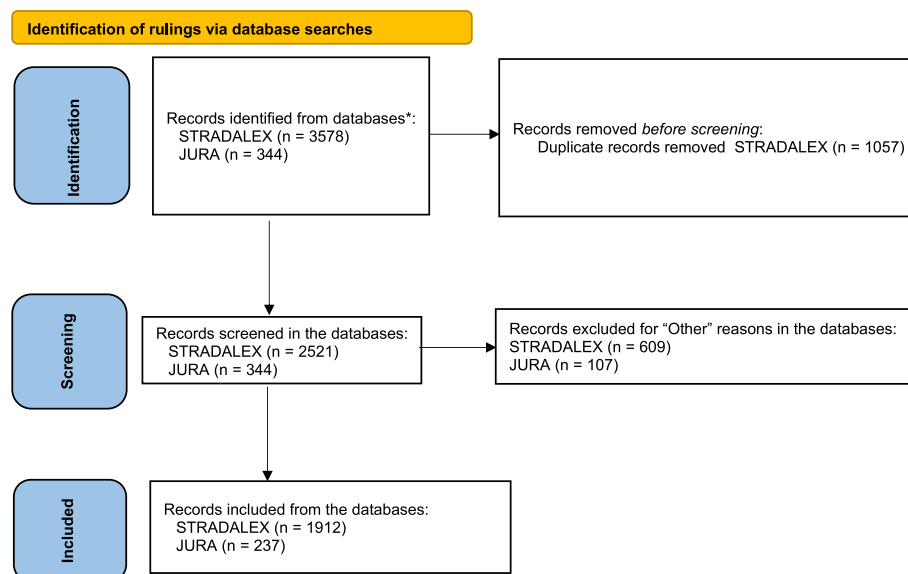


Fig. 1 Identification of judgments via database searches. PRISMA Flowchart based on the guideline available from: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. <https://doi.org/10.1136/bmj.n71>

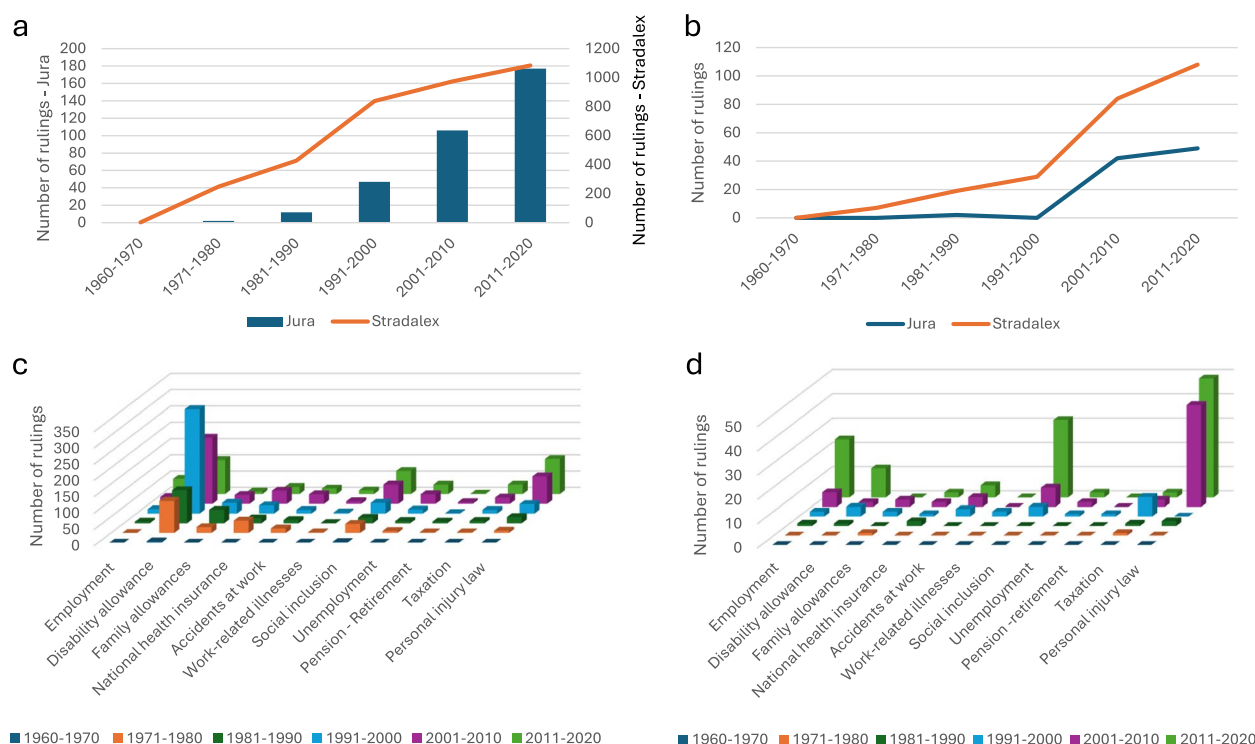


Fig. 2 The use of the term (in French) 'disability' by decades. **a** Recurrence in databases JURA and STRADALEX, **b** Use in damages regulated by personal injury Law, **c** Use in the areas of law in STRADALEX, **d** Use in the areas of law in JURA

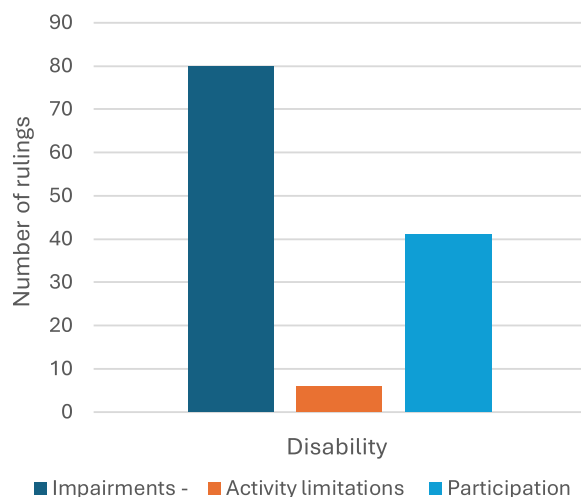


Fig. 3 Disability and the case law approach. Histogram of keyword cross-referencing (in French) of the term "Disability" with "disability", "impairment", "activity limitations" and "participation"

impairment aspect of the injury was the predominant factor (Table 2, Figs. 3 and 4). However, it is noteworthy that the use of criteria for participation in society, work, and domestic activities has increased slightly over the last two decades (Fig. 5).

Accidents causing injury covered by personal injury law

The triptych of personal, domestic and occupational incapacities refers to the effects of impairments and functional disorders that limit the injured person's participation in personal, domestic and occupational activities, and therefore refers to the disability (as defined by the WHO) of the injured person. An analysis of the case law through keyword cross-referencing showed that incapacity (whether personal, domestic, or occupational) appears to be dominated by the extent of the victim's physical or mental impairment ($n=1,575$) with limited reference to activity limitations, participation restriction and the context of the person.

A search based on the combination of keywords showed that the term *incapacity* is 10 times more likely to be associated with *impairment* ($n=1575$) than with *disability* ($n=151$) or social *participation* ($n=139$). The same applies to the term *personal injury*. We found more decisions crossing this keyword with *impairment* ($n=1764$) than with *disability* ($n=78$) or social *participation* ($n=106$) (Table 2 and Fig. 4).

Discussion

The aim of this study was to determine how medicolegal assessments, particularly those governed by personal injury law, reflect the biopsychosocial perspective of the

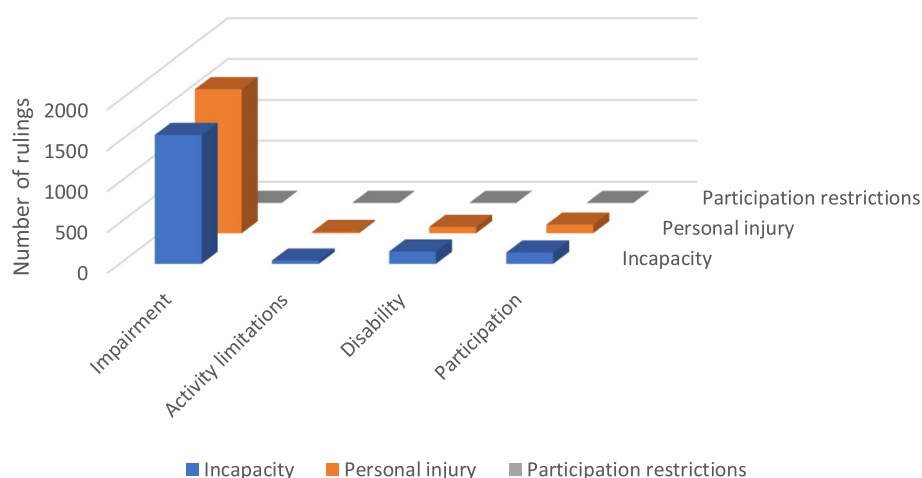


Fig. 4 Combined search of the JURA database by cross-referencing different keywords in case law

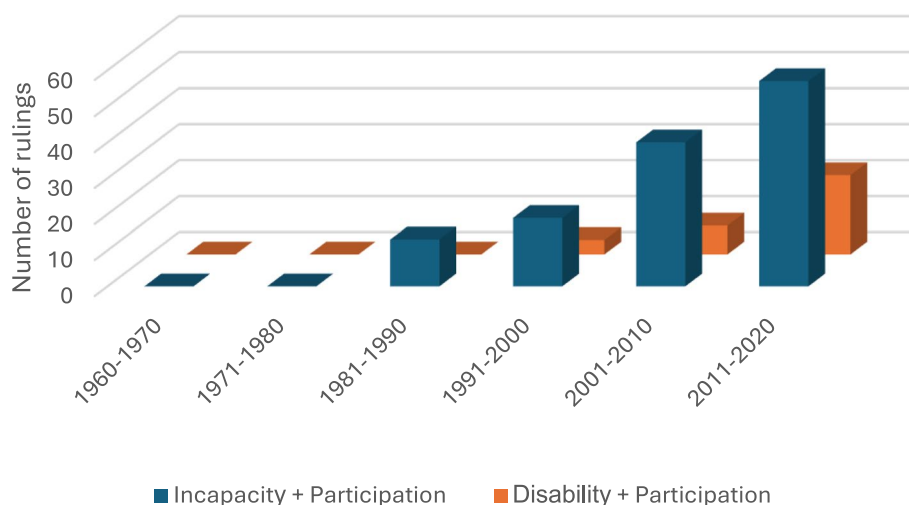


Fig. 5 Combined search of the keywords (in French) “*disability*” and “*incapacity* with “*participation*” in the case law of the JURA database over the decades

ICF and incorporate the injured person’s interactions with his or her environment.

Increased use of the term disability

The more frequent use of the keyword *disability* in recent decades can be explained by a combination of several factors: a better compilation of rulings over time in the databases, a greater attention from Belgian and European legislators to people with disabilities and, potentially also to the new medicolegal approach to the assessment of damages since 2012. Analysis of the results reveals that the term *disability* is very present in social security and labor law. The income replacement allowance and integration allowance were introduced by the Belgian Act of 27 February 1987 on allowances for disabled persons [17]. The increase in the use

of the term *disability* since the late 1980s and early 1990s can be explained by the entry into force of this law. Moreover, given that Belgian social security has been in existence for 80 years, it is easy to understand that it is in this sector that the term “*disability*” is most frequently used in legal contexts and that, due to the compulsory use of the Belgian official scale of disabilities, it has a predominantly lesion-focused content. To date, the impact and implementation of the Secretary of State for Disability’s 2018 recommendation that the specific circumstances of the person under assessment should be taken into account is uncertain.

Accidents causing injury covered by personal injury law

The results of our research show that, despite the 20-year existence of the biopsychosocial model, the medicolegal

assessment of experts remains strongly focused on the medical diagnosis of impairments. However, considering compensation for a personal injury solely in terms of lesions or impairments is likely to create or aggravate the disability, as the compensation offered is often insufficient to enable the victim to participate again, if not fully, then at least with as high quality of participation in the life of society as possible [18, 19]. It is therefore a legitimate question as to why the biopsychosocial model of disability has not been fully integrated into medicolegal assessments.

This question is all the more relevant because some judges have grasped this model and advocate that personal injury begins with a change in the individual's physical or mental integrity but does not end there [20, 21]. This change has repercussions on the functions of the body or mind, which hinder the individual in all situations that form part of his private and social life, in all his economic or legal activities [20] and dependent on the barriers and facilitators in their daily context. Given this concept of personal injury, they regret that all too often expert reports are limited to the lesional aspects of the damage suffered by the injured party [21].

The reasons for this lack of consideration of the biopsychosocial model in the field of personal injury are likely to be multi-factorial.

- 1) *A possible lack of interest.* The people who do the assessments are usually doctors. They therefore have an excellent knowledge of the human body and how it works, which is the subject of their training. On the other hand, they appear to be less well trained in analyzing the person's environment and participation in social life. This is probably because such analysis is not part of the medical education program.
- 2) *The complexity of the ICF.* Experts are still unfamiliar with the ICF and it is relatively complex to use [22]. As in other countries [23], the failure to take into account the social and situational dimensions of the damage could also be attributed to the lack of tools that are easily applicable in the medicolegal field for measuring the environmental factors causing the disability. We can also speculate on a possible lack of awareness on the part of the community of medical experts of the close links that exist between damage resulting from a personal injury and the biopsychosocial concept of disability. A closer relationship between rehabilitation specialists, who are more experienced in the field of ICF and medicolegal experts may be appropriate [24–26].

- 3) *Inappropriate use of the Belgian official scale of disabilities.* This old tool, known to all experts and used for decades in medicolegal practice, is a common language. However, this scale completely ignores personal and environmental factors. The Belgian official scale of disabilities is an inadequate scale for this purpose. Referring to this scale is not in itself prohibited by personal injury law [27]. Some believe that it enables the expert to assess the degree of physical and mental injury suffered by the victim in an objective and consistent manner [27]. This belief is not justifiable due to its limitations and omission of crucial information. This “Belgian official scale of disabilities” assessment is but the first step in assessing an injured person is to conduct a full investigation based on the injured person's medical history and a rigorous and systematic functional assessment.

Criticism of the inappropriate use of the Belgian official scale of disabilities and its lack of relevance in comprehensively measuring the incapacity of injured persons is undeniably well-founded [27]. Created at a time when the biopsychosocial model of disability did not exist, this scale is a particularly outdated tool that is inadequate for assessing an injured person according to current expectations. However, this scale is often used automatically [27, 28]. In fact, the Belgian official scale of disabilities is the most widely used scale in Belgium, even when medical experts are asked about the extent of the damage in personal injury law [29, 30] or in cases of accidents at work [31, 32]. The mistake here is that many medical experts wrongly extrapolate their assessment of the degree of impairment of the injured person to assess his or her loss of capacity, whether personal, domestic or occupational (see below). This flawed approach fails to consider the full range of factors that contribute to the personal, domestic or occupational damage suffered by injured parties [20, 21, 27].

- 4) *A triptych of incapacities with heterogeneous content.* Although inspired by the biopsychosocial model, the definition of the Belgian incapacities (personal, domestic and occupational) is confused, mixing different components (impairments, activity limitations, participation restrictions) of disability proposed by the CIF (Table 3). These ambiguous definitions are likely to confuse experts who do not have a clear framework and therefore lose sight of the situational nature of the damage to be addressed through accommodations. This may explain why there is no assessment process that sufficiently integrates the biopsychosocial dimension of disability and why Belgian official scale of disabilities is used to reassure experts. It might be helpful to clarify the different concepts of disability.

Table 3 Confrontation of the Belgian triptych of incapacities with the biopsychosocial model proposed by the ICF

The Belgian triptych of incapacities (Définitions)	ICF
Personal incapacity	
1. Includes the limitations and inconveniences in behavior, actions, and/or gestures of daily living arising from the injury	Activity limitations
2. The pain that is usually associated with the injury	Impairments
3. The frustration and anxiety caused by the injury	Impairments
4. The impact on personal activities, such as leisure, sports, and hobbies, as well as on social, friendship, and family relationships	Participation restrictions
*The assessors determine the percentage of incapacity which is deemed to be the same for all persons suffering from the same injuries	Activity limitations; Participation restrictions
*The assessors may adapt this percentage according to the specific situation of the victim In this case, they will explain his point of view	Participation restrictions
Domestic incapacity	
1. Is the limitation of the victim's energy or functioning	Impairments
2. That affects their ability to carry out domestic activities and which may require increased effort to perform	Activity limitations
3. Domestic incapacity is the limitation in the victim's energy or functioning that affects their ability to carry out domestic activities and which may require increased effort to perform. Domestic tasks may include raising children, looking after the house and garden, shopping and related travel, preparing meals, laundering clothes, budgeting, and pet care	Activity limitations; Participation restrictions
*The expert determines the percentage of domestic incapacity which is deemed to be the same for all persons suffering from the same injuries	Activity limitations; Participation restrictions
*The expert may adapt this percentage according to the specific situation of the victim In this case, he will explain his point of view	Participation restrictions
Occupational incapacity	
1. Comprises all the consequences of the physical and mental injury on the actions and the functioning of the injured person	Activity limitations
2. On his professional and lucrative life	Participation restrictions
3. On their ability to be competitive	Participation restrictions
4. In the labor market	Environmental factors
*The expert determines the percentage of economic incapacity which is deemed to be the same for all persons suffering from the same injuries	Activity limitations
*The expert may adapt this percentage according to the specific situation of the victim In this case, he will explain his point of view	Participation restrictions

Limitations

The present study has some limitations that should be taken into account. Our analysis of case law is inevitably incomplete for different reasons. Firstly, not all judgments are published. Secondly, legal databases are not easily usable for a search such as the present study: keywords may be used in completely different contexts and meanings. A further limitation is associated with the fact that the research, based on the introduction and cross-referencing of different keywords in the databases, was conducted by a single researcher.

Conclusion

Despite the twenty-year existence of the biopsychosocial model, the medicolegal assessment of the injured subject to personal injury law still focuses heavily on the medical

diagnosis of impairment and, to a lesser extent, on activity limitations. The incorporation of environmental factors into the assessment of injured individuals represents a significant challenge for a society striving for inclusivity. Future research should be conducted to identify the various causal factors and their actual impact on the failure to implement the biopsychosocial model of disability in this domain of personal injury.

Abbreviation

ICF International Classification of Functioning, Disability and Health

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Not applicable.

Authors' contributions

I.L. extracted data from legal databases. I.L., A.K., A.G. and P.S. analyzed and interpreted the extracted data according to the different legal areas. I.L., M.S. and C.T. compared the data with the biopsychosocial model of disability

proposed by the International Classification of Functioning, Disability and Health. I.L. was a major contributor in writing the manuscript. All authors read and approved the final manuscript.

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Data availability

Data is provided within the manuscript or supplementary information files. The data that support the findings of this study are also available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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