

Discussion Paper 3/2020

Juha Kivelä, Päivi Nurmi-Koikkalainen, Tiina Ristikari, Sinikka Hiekkala

Young people with impaired mobility in Finland

Numbers, diagnoses, risks of exclusion, and quality of life

This study investigated the numbers of young people with impaired mobility in Finland and assessed their risk of exclusion and quality of life. This was done by examining data from two national birth cohorts (1987 and 1997) compiled by the Finnish Institute for Health and Welfare (THL) and material from the School Health Promotion Study (2017).

The young people were identified as having impaired mobility from the birth cohorts on the basis of their diagnoses recorded in various health service databases and the responses made by the individuals to questions in the school health promotion study. Use of these birth cohorts facilitated the inclusion of data from the various registries administrated by the Finnish authorities, which consequently facilitated the assessment of the risk of exclusion of the young people in question. Moreover, the school health promotion study included several questions pertaining to the quality of life of young people.

In this study, young people with impaired mobility are defined as the approximately 10,000 14–29 year olds who are at a greater risk of experiencing factors contributing toward social exclusion than others of the same age. In addition, they are more dissatisfied with their quality of life than their age group peers.

Preface

The United Nations Conventions on the Rights of Persons with Disabilities undertakes to collect statistics and research on persons with disabilities. Data on persons with a registered disability was obtained from various databases and registries, such as those administrated by Kela – the Social Insurance Institution of Finland. Data on people's experiences of their functional capacity, wellbeing, and the boundaries to social inclusion and participation they experience can be collected via surveys and interviews. Furthermore, on the basis of the responses to surveys, for example, various indicators can be determined and subsequently used to assess the generalisability of these limitations and compare the functional capacity and wellbeing of persons with reduced functional capacity to those of persons not similarly affected by these factors.

This study focused on an examination of impaired functional capacity from the perspective of people with a physical disability. Here, we use the term persons with a physical disability to refer to persons with impaired or severely impaired mobility. The term is derived from the WHO ICF classification, according to which mobility includes changing or moving a body position, carrying objects, moving from one place to another, handling objects, walking, running, climbing or using different types of transport.

The Finnish Association of People with Physical Disabilities (FAPD) has long considered how to respond to issues relating to the growing size of its traditional target group; i.e. physically disabled people. Of the approximately 30,000 members of FAPD's affiliated organisations, approximately 74% are aged 60 years or older. The proportion of young people in this group is very small. In fact, only approximately 4% of members are aged 30 years or younger. The activities and structure of the FAPD affiliated organisations are often very rigid. Indeed, these organisations do not always know what kinds of things young people are interested in, how they might be accommodated better, and what kinds of activities could be arranged to meet their needs. So far, the needs and wishes of young people with a disability have not been adequately addressed. Ideally, the activities of organisations such as these would function as a support network for young people with a disability. Moreover, through this support, these young people would be able to participate, affect, and determine matters in their own life and share their experiences with other people, too. Consequently, through their activities, associations and similar organisations can facilitate young people being able to participate in their wider social settings and prevent them from becoming isolated and excluded.

With these aims in mind, FAPD sought and received funding from the OLVI Foundation for a nationwide project investigating the numbers of young people with a disability and reduced functional capacity and the most effective modes of responding to their societal needs and wishes. It was decided that the study should be carried out in two parts. The first part, reported on in this working paper, sought to establish the numbers of physically disabled and incapacitated young people, i.e. those young people with impaired mobility, and, furthermore, the numbers of these young people at risk of social exclusion. The study was carried out in cooperation with the National Institute for Health and Welfare (THL) and used data collected by THL. This body of data consisted of two national birth cohorts, 1987 and 1997, and responses to a school health promotion study. The report produced in collaboration with researchers from THL provided valuable insight into the matters being examined. The second part of the study, which was reported on separately, was conducted in cooperation with the Juvenia youth research and development centre at South-Eastern Finland University of Applied Sciences, and utilised interviews to assess the needs of young people and their wishes regarding desirable modes of participating in society.

The results of the research are being utilised by FAPD in order to develop their activities. Furthermore, the study's findings have been made freely available to all actors working with young people with impaired mobility.

Helsinki 18/04/2019

Terhi Jussila, Member Relations Director, Finnish Association of People with Physical Disabilities

Abstract

Juha Kivelä, Päivi Nurmi-Koikkalainen, Tiina Ristikari, Sinikka Hiekkala. Young people with impaired mobility in Finland. Numbers, diagnoses, risks of exclusion, and quality of life. National Institute for Health and Welfare (THL). Discussion Paper 3/2020. 41 pages. Helsinki, Finland 2020. ISBN 978-952-343-344-1 (online publication)

The study “Young people with mobility limitations in Finland” was conducted in cooperation between the Finnish Institute for Health and Welfare (THL) and the Finnish Association of People with Physical Disabilities. It aimed to evaluate the number of young people with mobility limitations in Finland by studying THL’s two different birth cohorts and material from the School Health Survey 2017. In addition, young people’s quality of life and risk or exclusion were measured by combining the registry data of various authorities and by studying the responses to the School Health Survey.

THL’s Finnish National Birth Cohort 1997 consisted of 57,996 young people (50.8% boys), and the National Birth Cohort 1987 of 58,728 young people (51.1% boys). The response material to the School Health Survey 2017 consisted of the responses of 73,680 8th and 9th grade pupils in elementary school (response rate 63%), 34,961 1st and 2nd grade students in upper secondary school (response rate approximately 50%) and 31,188 1st and 2nd grade students in vocational institutions (response rate approximately 40%). Indicators of exclusion proven effective in previous studies were used to identify the risks of exclusion.

In both birth cohorts, 1.3% of young people were identified as having a physical disability, or young people with mobility limitations as they are referred to in the study. In general terms, this would mean that there are approximately 10,000 14–29-year-old people with mobility limitations in Finland. The most common diagnosis groups included inflammatory polyarthropathies, cerebral palsy and other paralytic syndromes as well as muscular and skeletal anomalies. The ratio of girls and boys with mobility limitations who had many risk factors related to the exclusion of young people was very similar in both cohorts. On the other hand, the proportion of girls with no risk or with a maximum of one risk factor was larger in the younger cohort than in the older cohort. With regard to boys with mobility limitations, there was practically no difference between the cohorts in the aggregation of risks.

Young people with mobility limitations had more risk factors than other young people. 34–40% of boys with mobility limitations and 44–52% of girls with mobility limitations had no risk, compared to 54–63% for boys and 66–70% for girls among other young people.

Nearly 10% of young people with mobility limitations born in 1987 were at risk of exclusion in adulthood compared to approximately only 2% for other young people. Aggregation of risk factors in childhood strongly predicts risk of exclusion also in adulthood, especially among young people with mobility limitations.

Based on the School Health Survey, the share of those who said they were bullied was 46% for young people with mobility limitations and only 18% for other young people. In addition, the proportion of those who said they bullied others was higher among young people with mobility limitations than other young people. Young people with mobility limitations were more commonly victims of theft, threats of violence and physical violence. They had also experienced more sexual propositions and harassment than other young people. This could affect their satisfaction with life. The proportion of young people with mobility limitations who were not satisfied with their life was over three times higher compared to other young people. Correspondingly, a little more than half of young people with mobility limitations and three quarters of other young people were satisfied with their life. Young people with mobility limitations have more negative and less positive feelings than other young people. As a conclusion, it can be noted that mobility impairments should be taken into account when arranging and providing services related to the lives of children and young people. Adequate support services can help to prevent exclusion. This study shows that more research is needed, for example, on the factors related to exclusion and their prevention.

Keywords: mobility limitations, young people, exclusion, health, disability, UN convention on the rights of persons with disabilities, CRPD, cohort, school health survey

Tiivistelmä

Juha Kivelä, Päivi Nurmi-Koikkalainen, Tiina Ristikari, Sinikka Hiekkala. Young people with impaired mobility in Finland. Numbers, diagnoses, risks of exclusion, and quality of life. [Liikkumisrajoitteiset nuoret Suomessa. Määrät, diagnoosit, syrjäytymisriskit ja elämänlaatu.] Terveyden ja hyvinvoinnin laitos (THL). Työpäpaperi 3/2020. 41 sivua. Helsinki 2020.

ISBN 978-952-343-344-1 (verkkojulkaisu)

Liikkumisrajoitteiset nuoret Suomessa on toteutettu yhteistyössä Terveyden ja hyvinvoinnin laitoksen (THL) ja Invalidiliiton kanssa ja tutkimuksessa on pyritty arvioimaan liikkumisrajoitteisten nuorten lukumäärää Suomessa tutkimalla kahta eri THL:n syntymäkohorttia sekä Kouluterveyskyselyn vuoden 2017 aineistoa. Lisäksi nuorten elämänlaatua ja syrjäytymisriskejä on mitattu yhdistelemällä eri viranomaisten rekisteritietoja sekä tutkimalla vastauksia Kouluterveyskyselystä.

Terveyden ja hyvinvoinnin laitoksen Kansallinen syntymäkohortti 1997-aineisto koostui 57 996 nuoresta (poikia 50,8 %), ja Kansallinen syntymäkohortti 1987-aineisto koostui 58 728 nuoresta (poikia 51,1 %). Kouluterveyskyselyn vuoden 2017 vastausaineisto muodostui: perusopetuksen 8. ja 9. luokan oppilaiden 73 680 (vastausaktiivisuus 63 %), 1. ja 2. vuoden lukiolaisten 34 961 (vastausaktiivisuus noin 50 %) ja samojen vuosikurssien ammatillisten oppilaitosten 31 188 opiskelijoiden (vastausaktiivisuus noin 40 %) vastauksista. Syrjäytymisriskien tunnistamiseksi käytettiin aikaisemmissa tutkimuksissa päteviksi todettuja syrjäytymisen indikaattoreita.

Fyysisesti vammaisia nuoria, joista tässä raportissa käytetään termiä liikkumisrajoitteiset nuoret, tunnistettiin molemmista syntymäkohorteista 1,3 prosenttia. Yleistäen tämä tarkoittasi, että Suomessa olisi noin 10 000 liikkumisrajoitteista 14–29-vuotiasta nuorta. Yleisimmät sairausryhmät olivat tulehdukselliset moninivelsairaudet, CP-oireyhtymä ja muut halvausoireyhtymät sekä lihasten ja luiden epämuodostumat. Nuorten syrjäytymisriskeissä runsaasti riskitekijöitä keränneiden Liikkumisrajoitteisten tyttöjen ja poikien osuus oli pitkälti samansuuruinen molemmissa kohorteissa. Sen sijaan nuoremmassa kohortissa riskittömien tyttöjen tai korkeintaan yhden riskitekijän saaneiden osuus oli suurempi kuin vanhemmassa kohortissa. Liikkumisrajoitteisten poikien kohdalla riskien kasautumisessa ei ollut juurikaan eroa kohorttien välillä.

Liikkumisrajoitteisilla nuorilla on enemmän riskitekijöitä kuin muilla nuorilla. Liikkumisrajoitteisista pojista 34–40 prosenttia ja tytöistä 44–52 prosenttia oli ilman riskiä, kun muilla nuorilla vastaavat luvut oli pojilla 54–63 prosenttia ja tytöillä 66–70 prosenttia.

Vuonna 1987 syntyneistä liikkumisrajoitteisista nuorista vajaa kymmenen prosenttia oli aikuisena syrjäytymisvaarassa, kun muilla nuorilla osuus oli ainoastaan kahden prosentin luokkaa. Riskitekijöiden kasautuminen lapsuudessa ennakoivat vahvasti syrjäytymisvaaraa myös aikuisena.

Kouluterveyskyselyn perusteella liikuntarajoitteista nuorista oli kiusatuksi itsensä kokeneita 46 prosenttia, kun muiden nuorien vastaava luku oli vain 18 prosenttia. Liikkumisrajoitteiset nuoret ilmoittivat myös kiusaavansa enemmän kuin muut nuoret. Liikkumisrajoitteiset nuoret kokivat huomattavasti useammin sekä varkauksia, väkivallalla uhkailua että fyysistä väkivaltaa. He olivat kokeneet myös seksuaalista ehdoteltua tai ahdistelua huomattavan paljon enemmän kuin muut nuoret. Tällä voi olla vaikutusta myös nuorten tyytyväisyyden kokemiseen elämästään. Muihin nuoriin verrattuna liikkumisrajoitteisista nuorista yli kolmikertainen määrä ei ollut tyytyväisiä elämäänsä. Vastaavasti niukasti yli puolet liikkumisrajoitteisista ja kolme neljännessä muista nuorista oli tyytyväisiä elämäänsä. Liikkumisrajoitteisilla nuorilla on enemmän kielteisiä ja vähemmän myönteisiä tuntemuksia kuin muilla nuorilla.

Johtopäätöksenä voidaan todeta, että liikkumisrajoitteisuus tulisi ottaa huomioon lasten ja nuorten elämään liittyviä palveluita järjestettäessä ja toteutettaessa. Riittävien tukipalvelujen avulla voidaan estää syrjäytymistä. Tämän selvitys osoittaa, että tarvitaan edelleen lisätutkimusta mm. syrjäytymiseen liittyvistä tekijöistä ja niiden ehkäisystä.

Avainsanat: liikkumisrajoite, nuoret, syrjäytyminen, terveys, vammaisuus, toimintarajoitteisuus, YK:n vammaisten oikeuksien sopimus, kohortti, kouluterveyskysely

Sammandrag

Juha Kivelä, Päivi Nurmi-Koikkalainen, Tiina Ristikari, Sinikka Hiekkala. Young people with impaired mobility in Finland. Numbers, diagnoses, risks of exclusion, and quality of life. [Unga rörelsehindre i Finland. Antal, diagnoser, risken för marginalisering och livskvalitet]. Institutet för hälsa och välfärd (THL). Diskussionsunderlag 3/20120. 41 sidor. Helsingfors, Finland 2020. ISBN 978-952-343-344-1 (nätpublikation)

Studien Unga rörelsehindre i Finland har genomförts i samarbete mellan Institutet för hälsa och välfärd (THL) och Invalidförbundet. I studien har man försökt uppskatta antalet unga rörelsehindre i Finland genom att granska två av THL:s födelsekohorter och materialet från enkäten Hälsa i skolan 2017. Därtill har man mätt de ungas livskvalitet och risk att marginaliseras genom att kombinera registeruppgifter från olika myndigheter och granska svaren från enkäten Hälsa i skolan.

THL:s material Nationell ålderskohort 1997 bestod av 57 996 unga (50,8 % pojkar) och materialet Nationell ålderskohort 1987 bestod av 58 728 unga (51,1 % pojkar). Svarematerialet från enkäten Hälsa i skolan 2017 bestod av svar från 73 680 elever i årskurs 8 och 9 inom den grundläggande utbildningen (svarsfrekvens 63 %), 34 961 första- och andraårsstuderande i gymnasiet (svarsfrekvens cirka 50 %) och 31 188 första- och andraårsstuderande på yrkesläroanstalter (svarsfrekvens cirka 40 %). För att identifiera risken för marginalisering användes marginaliseringsindikatorer som beprövats i tidigare studier.

I båda födelsekohorterna identifierades 1,3 procent unga med fysiska funktionsnedsättningar, som i den här rapporten kallas för unga rörelsehindre. Generaliserat innebär detta att det i Finland finns ungefär 10 000 rörelsehindre i åldern 14–29 år. De vanligaste sjukdomsgrupperna var inflammatoriska polyartriter, CP-syndrom och andra förlamningssyndrom samt missbildning av muskler och skelett. Andelen rörelsehindre flickor och pojkar som hade många faktorer som ökar risken för marginalisering bland unga, var nästan lika stor i båda kohorterna. Däremot var andelen flickor som inte löpte någon risk att marginaliseras eller bara hade en riskfaktor större i den yngre än i den äldre kohorten. Bland de rörelsehindre pojkarna var det ingen skillnad mellan kohorterna i fråga om marginaliseringsrisken.

Unga rörelsehindre har fler riskfaktorer än andra unga. Bland de rörelsehindre löpte 34–40 procent av pojkarna och 44–52 procent av flickorna ingen risk att marginaliseras som unga, medan motsvarande siffror bland övriga unga var 54–63 procent för pojkar och 66–70 procent för flickor.

Av de unga rörelsehindre som föddes 1987 riskerade knappt 10 procent marginalisering som vuxna, medan andelen bara var kring 2 procent bland övriga unga. Många riskfaktorer i barndomen varslar i hög grad om risk att marginaliseras även som vuxen, framför allt bland unga rörelsehindre.

Enligt enkäten Hälsa i skolan upplevde 46 procent av de unga rörelsehindre mobbing, medan motsvarande siffra bland övriga unga endast var 18 procent. Unga rörelsehindre uppgav också att de själva mobbade mer än andra unga. Unga rörelsehindre blev betydligt oftare utsatta för stölder, hot om våld och fysiskt våld. De hade blivit utsatta för sexuella förslag eller sexuellt ofredande i avsevärt större utsträckning än andra unga. Detta kan påverka de ungas nöjdhet med livet. Andelen unga som var missnöjda med sitt liv var tre gånger så stor bland de rörelsehindre än bland övriga unga. Lite drygt hälften av de rörelsehindre och tre fjärdedelar av de övriga unga var nöjda med sitt liv. Unga rörelsehindre känner fler negativa och färre positiva känslor än andra unga.

Slutsatsen är att rörelsehinder bör beaktas när man ordnar och genomför tjänster som rör barns och ungas liv. Marginalisering kan förhindras med tillräckliga stödtjänster. Utredningen visar att det behövs fler undersökningar bland annat om de faktorer som ökar risken för marginalisering och hur dessa kan förebyggas

Nyckelord: rörelsehinder, unga, marginalisering, hälsa, funktionsnedsättning, funktionshinder, FN:s konvention om rättigheter för personer med funktionsnedsättning, kohort, enkäten Hälsa i skolan

Contents

Preface.....	1
Abstract.....	2
Tiivistelmä.....	3
Sammandrag.....	4
Contents.....	5
Background.....	6
Aims.....	6
Methods.....	7
Data.....	7
Extracting data on young people with impaired mobility.....	7
National birth cohorts.....	7
School Health Promotion Study.....	8
Results.....	9
The numbers of young people with impaired mobility in Finland.....	9
The numbers of young people with impaired mobility in Finland by region.....	10
Observations made using the national birth cohorts.....	10
Observations made using the school health promotion study.....	11
The number of diagnoses in the national birth cohorts.....	13
Young people in the birth cohorts with impaired mobility and at risk of exclusion.....	15
The young people in the 1987 cohort at risk of exclusion in adulthood.....	19
The quality of life of young people with severely impaired mobility on the basis of the school health promotion study.....	22
Bullying, violence, and distress.....	22
Mood.....	25
The young people's satisfaction with their life.....	30
Reflection.....	33
Conclusions and recommendations.....	34
Appendices.....	36
References.....	40

Background

Children's daily life and their ability to function without difficulty are shaped by the various environments in which they live. These environments can both promote favourable development trajectories for children and affect their marginalisation and social exclusion. Surveys, statistics, and birth cohort data have been used to examine the health and welfare of children and young people at the national level. When considered as a whole, the body of evidence suggests that the situation of young people in Finland in terms of their health and wellbeing is good and, with respect to several significant wellbeing indicators, the welfare of the nation's children and young people has improved in recent years. Nevertheless, there remains a small percentage of children and young people affected by welfare issues and for whom the risk of social exclusion is elevated (Ristikari et al. 2018).

Evidence-based knowledge is important to the development of societal mechanisms. The UN Convention on the Rights of Persons with Disabilities requires States Parties to collect information on the situation of persons with disabilities (Convention on the Rights of Persons with Disabilities). Knowledge and information is also needed in order to make society more accessible for all. The Convention on the Rights of the Child (UNICEF, 2019) also requires that the views of children and young people be taken into account.

Owing to the broad scope of the concept of impaired mobility, this study focused on physical disability and young people. Physical disability is examined both objectively, on the basis of diagnoses recorded in various health registries, and subjectively, through the personal accounts of young people regarding their functional capacity (Nurmi-Koikkalainen et al. 2017). This study was jointly conducted by the Finnish Institute for Health and Welfare (THL) and the Finnish Association of People with Physical Disabilities (FAPD). The study was largely enabled by a grant received by FAPD from the OLVI Foundation to conduct a nationwide survey of the number of physically disabled young people and young people with reduced functional capacity and their needs and aspirations regarding participating in meaningful activities in society. The project produced two publications, one of which is the current working paper, in which THL has been involved.

The Finnish Association of People with Physical Disabilities engages in advocacy and service provision for people with physical disabilities or functional impairments throughout Finland. The Association promotes and develops opportunities for people with physical disabilities and impaired mobility to participate, be mobile, and live rich and full lives. A specific point of interest in the present study is the wellbeing, social inclusion, and education, training, and employment opportunities of young people with a physical disability and impaired mobility. Social exclusion or an experience of marginalisation in one form or another can have a significant impact on the lives of young people with a disability and their families. Preventing exclusion is a fundament of a humane society. Supporting marginalised young people, providing services, and preventing marginalisation also require society to commit a great deal of financial resources.

Aims

The aim of the study was to establish the number of young people affected by impaired mobility. A further aim was to assess the risks of marginalisation faced by young people with impaired mobility and their quality of life.

In this paper, young people with a disability are defined on the basis of the research material and data used. There is no singular criterion for what constitutes a young person. According to the Finnish Youth Act (Nuorisolaki 2016/1285), young people are those aged 29 years or under, whereas the United Nations defines young people as those aged 15–24 years.

For the purposes of this study, the term young people refers to those aged 14–29 years. The lower age limit stems from the school health promotion study, included herein as part of the research material, the

youngest respondents to which were in school grades 8 and 9 in the Finnish education system. The upper age limit stems from the oldest members of the national birth cohort (those born in 1987), the variables of whom were reported on until the age of 29.

Here, we use the terms persons with impaired or severely impaired mobility to refer to people with a physical disability. These terms are derived from the ICF classification, which is the World Health Organization's (WHO) international classification of functioning, disability, and health. Mobility is a key factor in the *activity limitations and participation restriction* domain. As per this part of the classification system, the problems related to various aspects of functional capacity are referred to collectively as activity limitations and may be conjoined with activity-specific terms such as impaired mobility.

Methods

Data

The dataset contained in the Finnish Institute for Health and Welfare's national birth cohort for 1997 includes all children born in Finland in that year. Originally, the birth cohort consisted of 58,802 children, but because the current study attempted to estimate the number of young people with reduced mobility in Finland, data pertaining to persons having died on or before December 31, 2015, according to Statistics Finland's Death Registry, have been excluded from the research material. The same applied to persons whose last known place of residence was outside Finland as of March 16, 2016, according to the data extracted from the population registry of the Finnish Population Register Centre. Following these exclusions, the remaining data consisted of 57,996 children, of which 29,475 (50.8 %) were male and 28,521 (49.2 %) were female.

The second of the birth cohorts used in this study, i.e. the 1987 national birth cohort, includes data on the 59,476 children born in Finland in that year. This data has been restricted along the same principles as the 1997 cohort, i.e. using the cut-off date of December 31, 2005 for deceased persons and residence history until March 16, 2006. By applying the aforementioned historical restrictions, 58,728 individuals were included in the examination of children born in 1987, of which 30,023 (51.1%) were male, and 28,705 (48.9%) were female.

The school health promotion study is conducted biannually and consists of a questionnaire delivered to primary school pupils and first and second-year students at upper secondary schools and vocational institutes. Completion of the questionnaire was optional and the responses were anonymised. The questionnaire form was available in several languages and a simplified language version (THL, 2019).

This study examined the 2017 questionnaire responses of comprehensive school pupils in grades 8 and 9 and first and second-year students at upper secondary schools and vocational institutes. In total, 73,680 comprehensive school pupils responded, with a response rate of 63%. There were 34,961 and 31,188 responses from students at upper secondary school and vocational institutes, respectively. As the exact number of students enrolled in upper secondary schools and vocational institutes is not known, the response rate cannot be accurately calculated; however, it was estimated to be 50% in upper secondary schools and 40% in vocational institutes (THL, 2019).

The material examined differs greatly from each other, for example, in relation to the fact that the birth cohorts include all children born in Finland, but not those who were born elsewhere and moved to Finland later in their childhood. Indeed, 5.4% of respondents to the school health promotion study were born somewhere other than Finland.

Extracting data on young people with impaired mobility

National birth cohorts

The birth cohort data were merged with Kela's registers in order to identify young people with impaired mobility. Data on the disability benefits awarded by Kela were also examined, including data on disability

allowance for persons under 16 years, disability allowance for persons aged 16 years or over, and care allowance for pensioners. Another source of data was the rehabilitation service organised by Kela and information held by Kela on the national pension.

The criteria for awarding benefits stated in Kela's registers included an ICD-10 diagnosis of the main disease or health condition and possibly one or two diagnoses of additional health conditions or disabilities. Identification of mobility-impairing diagnoses on the basis of ICD-10 classification was done in four steps. First, the principle researcher (PR), a healthcare professional, chose diagnoses from the disease classification. After that, the PR went through the disease classification with two experienced experts operating in different parts of the Finnish Association of People with Physical Disabilities. Finally, the PR went through the disease classification with the Association's senior doctor.

On the basis of the selected diagnoses, persons with impaired mobility were initially identified from the registry data. These diagnoses were then compared to the diagnoses recorded in the THL care register. At this stage, the writing team decided to eliminate the diagnosis of metabolic disorders E70-E90, which were not considered to be directly related to mobility impairing conditions. Eventually, people with any of the ICD-10 diagnoses listed in Table 1 as either a primary or a secondary health condition were identified as having reduced mobility.

Table 1. Persons with impaired mobility: ICD-10 diagnoses included in the study.

Diagnosis group	Description
C40–C41	Malignant neoplasms of bone and articular cartilage
C45–C49	Malignant neoplasms of other soft tissue
C69–C72	Malignant neoplasms of the central nervous system
G00–G09	Inflammatory diseases of the central nervous system
G50–G59	Nerve, nerve root, and plexus disorders
G70–G73	Diseases of myoneural junction and muscle
G80–G83	Cerebral palsy and other paralytic syndromes
I60–I69	Cerebrovascular diseases
M00–M99	Diseases of the musculoskeletal system and connective tissue
Q05–Q07	Congenital malformations of the nervous system
Q39–Q43	Other congenital malformations of digestive system
Q65–Q79	Muscle and bone deformities
Q87	Other specified congenital malformation syndromes affecting multiple systems
Q96	Turner's syndrome
S06	Intracranial injury
T02–T07	Injuries involving multiple body regions
T08–T14	Injuries to unspecified part of trunk, limb or body region
T20–T25	Burns and corrosions of external body surface, specified by site
T29	Burns and corrosions of multiple body regions

The diagnoses were recorded in the registers with an accuracy of either three or four digits, but only three digits were used for all ICD-10 diagnoses. Examination of the 1987 cohort revealed that the criteria for granting disability benefits complied with the ICD-9 classification until the end of 1995. Accordingly, in examining the data, the ICD-10 diagnoses in Table 1 were converted to the corresponding ICD-9 diagnoses for the benefits granted between 1987 and 1995.

School Health Promotion Study.

As part of the school health promotion study, the respondents are asked to evaluate any restrictions or limitations they experience in their life in relation to their activities. These limitations may affect their vision, hearing, mobility, memory, learning, and/or concentration. Each of these areas is covered by a single ques-

tion in which they are asked to score their experience on a four-point Likert scale; i.e. no difficulties, some difficulties, significant difficulties, I am completely unable to [carry out this activity]. For the purpose of this study, young people with severely impaired mobility were defined as those who had responded either that they had significant difficulties or were completely unable to walk 0.5 metres. It is worth noting, however, that the responses of respondents who reported experiencing severe difficulties (significant difficulties or completely unable) in all six of the activity areas were excluded from the research material. This was done in order to reduce research bias. A total of 857 responses were excluded, with the included material consisting of 138,972 responses to the school health promotion study (49% male and 51% female).

Results

The numbers of young people with impaired mobility in Finland

The numbers and percentage of young people living in Finland with impaired mobility are presented in Table 2 by birth cohort and by gender. The proportion of young people with impaired mobility is the same for both of the birth cohorts (1.3%). There is a particularly even gender split in the 1997 cohort, but the difference is slightly more pronounced in the 1987 cohort. Of the children in the 1997 birth cohort, 1.4% of the girls and 1.2% of the boys had impaired mobility.

Table 2. The numbers and percentages of young people living in Finland with impaired mobility in the national birth cohorts

Cohort	Gender	Persons with impaired mobility	Percentage (%)
1987	Boys	372	1.2
	Girls	415	1.4
	Total	787	1.3
1997	Boys	379	1.3
	Girls	385	1.3
	Total	764	1.3

A total of 0.8% of the respondents to the school health promotion study identified themselves as having severely impaired mobility, but their respective proportion varied greatly between the different school grades. Table 3 shows that the percentage of upper secondary school students that identified as having severely impaired mobility was notably smaller than among the comprehensive school pupils and students at vocational institutes. In addition, the number of boys self-identifying as having severely impaired mobility was relatively higher than for girls.

Table 3. The numbers and percentages of young people self-identifying in the school health promotion study as having severely impaired mobility by school grade.

School grade	Gender	Persons with impaired mobility	Percentage (%)
Grades 8 and 9 of basic education	Boys	400	1.2
	Girls	311	0.9
	Total	711	1.0
Upper secondary school	Boys	58	0.4
	Girls	84	0.4
	Total	142	0.4
Vocational institutes	Boys	170	1.0

	Girls	118	0.9
	Total	288	1.0
All school grades	Boys	628	1.0
	Girls	513	0.7
	Total	1,141	0.8

The numbers of young people with impaired mobility in Finland by region

Observations made using the national birth cohorts

Following the identification of the young people with impaired mobility, the researchers sought data on the place of residence of those in the 1997 birth cohort from the Finnish Population Register Centre at the end of March 2016; i.e. during the spring of the year they turned 19. The address details of two persons could not be found, leaving a total of 762 young people with impaired mobility in the 1997 cohort for inclusion in the present study. The same information was sought for those in the 1987 cohort; i.e. their place of residence in spring 2006. The address details of ten persons from the 1987 was unavailable. The numbers of young people with impaired mobility at the regional level are presented in Figure 1 and in Table 5 in the appendices. The largest numbers of young people with impaired mobility for both cohorts were found in the Uusimaa region (175 in 1987 and 158 in 1997) and the region with the fewest was the Åland Islands (fewer than 10 in each cohort). The numbers of young people with impaired mobility largely follow the regional populations as a whole.

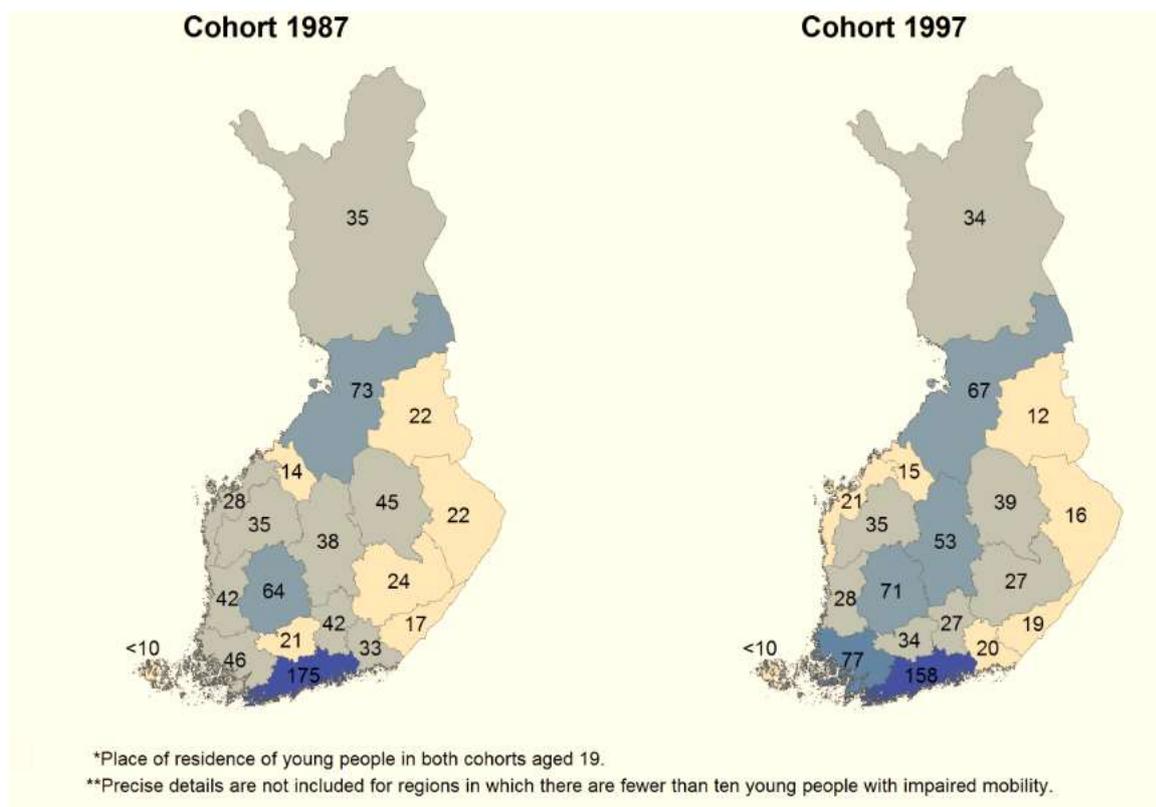


Figure 1. The numbers of young people with impaired mobility by region in the 1987 and 1997 national birth cohorts.

Nationally, 1.3% of all young people live with impaired mobility in each of the cohorts. The percentage of young people with impaired mobility in both cohorts is presented by cohort and by region in Figure 2 and

in Table 6 in the appendices. In the 1987 cohort, the region with the highest number, by a small margin, was Kainuu (2.1%) and the lowest was the Åland Islands (0.4%). In the 1997 cohort, the Åland Islands was the region with marginally the highest number of young people with impaired mobility (3.2%), whereas North Karelia had the lowest (0.9%).

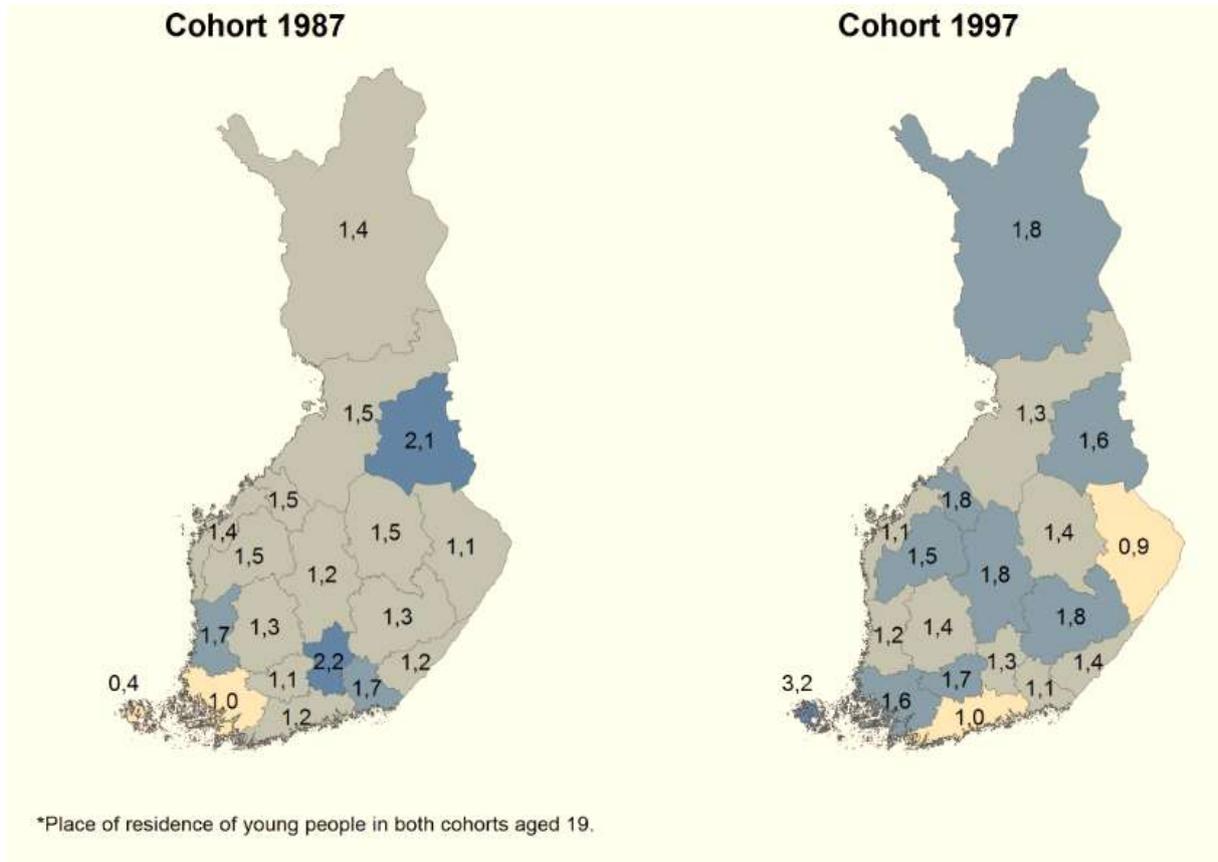


Figure 2. The proportion (%) of young people with impaired mobility in both national birth cohorts by cohort.

Observations made using the school health promotion study

The numbers of young people self-identifying as having severely impaired mobility in the school health promotion study is presented by region, including each school grade, in Figure 3 and in Table 7 in the appendices. The numbers of young people self-identifying as having severely impaired mobility ranged from less than 10 persons in the Åland Islands and Kainuu to 302 persons in Uusimaa.

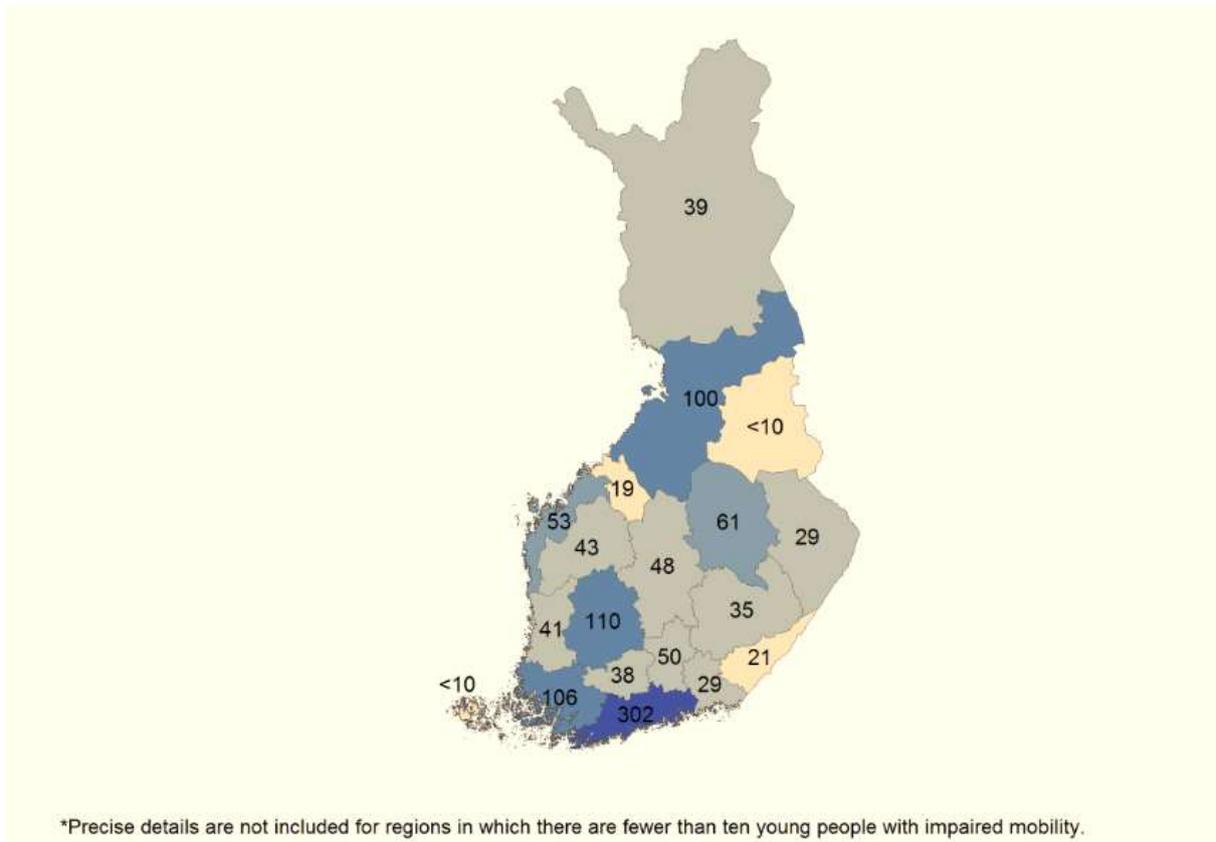


Figure 3. The numbers of young people self-identifying as having severely impaired mobility in the school health promotion study by region, including each school grade.

The percentage of young people self-identifying as having severely impaired mobility in their region is presented by school grade in Figure 4 and Table 9 in the appendices. The Figure shows that the percentage of young people with impaired mobility ranged from 0.4–1.6% in basic education, 0.2–1.2% in vocational education, and 0.1–0.5% in upper secondary school. Nationally, the percentage of young people with impaired mobility was 1.0% of 8th and 9th grade pupils in comprehensive school and students enrolled at vocational institutes and 0.4% of upper secondary school students.

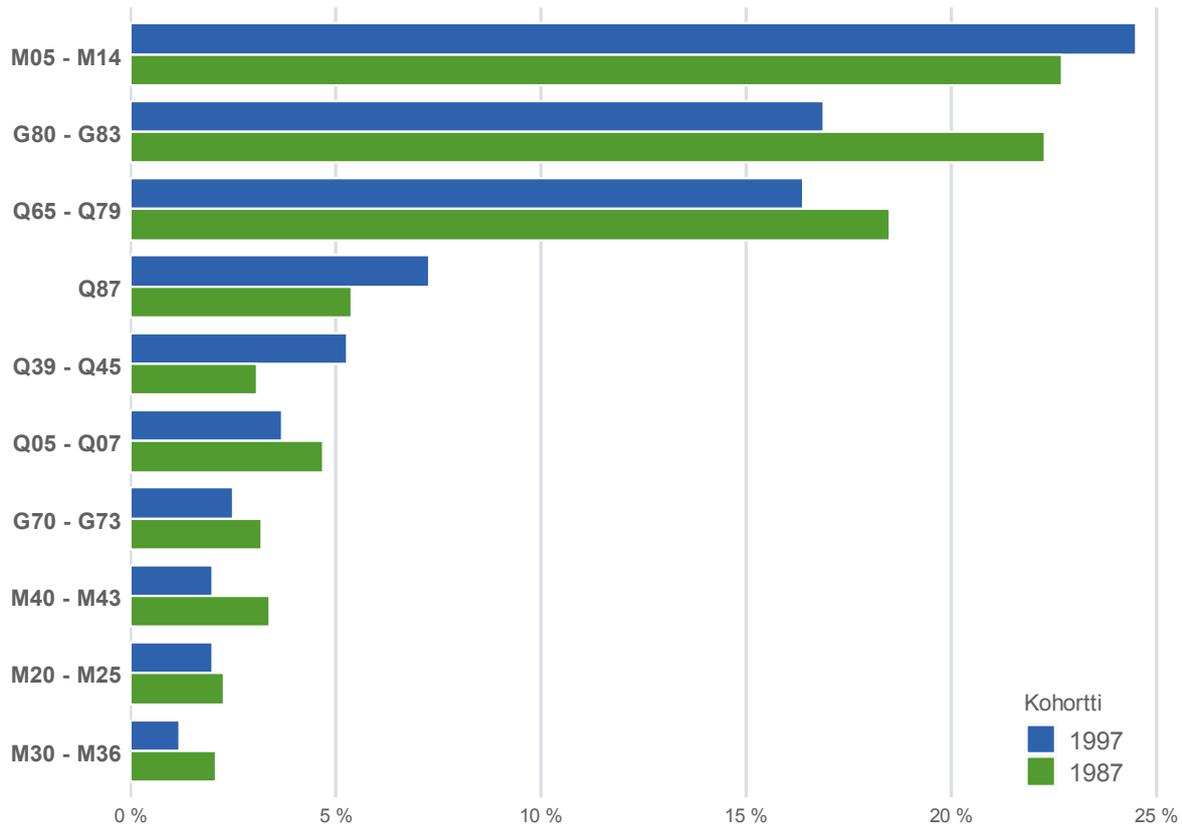


Figure 5. The most common ICD-10 diagnosis groups of the young people with impaired mobility by cohort. The Y-axis represents the diagnosis group and the X-axis the percentage (%) of all diagnoses in the cohort.

Table 1. Descriptions of the most common ICD-10 diagnostic groups.

Diagnosis group	Description
M05–M14	Inflammatory polyarthropathies
G80–G83	Cerebral palsy and other paralytic syndromes
Q65–Q79	Congenital malformations and deformations of the musculo-skeletal system
Q87	Other specified congenital malformation syndromes affecting multiple systems
Q00–Q07	Congenital malformations of the nervous system
M40–M43	Deforming dorsopathies
G70–G73	Diseases of myoneural junction and muscle
Q38–Q45	Other congenital malformations of the digestive system
M20–M25	Other joint disorders
M30–M36	Systemic connective tissue disorders

The diagnosis groups are presented by gender in the different cohorts in Figure 6, and the exact numbers are shown in Table 9 in the appendices. There seems to be a gendered difference in diagnoses: in both cohorts, the most prevalent syndromes among the boys are CP and other paralytic disorders, whereas the most common among the girls are inflammatory polyarthropathies. Of the boys born in 1987 and diagnosed with impaired mobility conditions, 27% were diagnosed with cerebral palsy and other paralytic disorders, compared with 22% in 1997. Inflammatory polyarthropathies were diagnosed in 28% of girls born in 1987 and 31% in girls born in 1997.

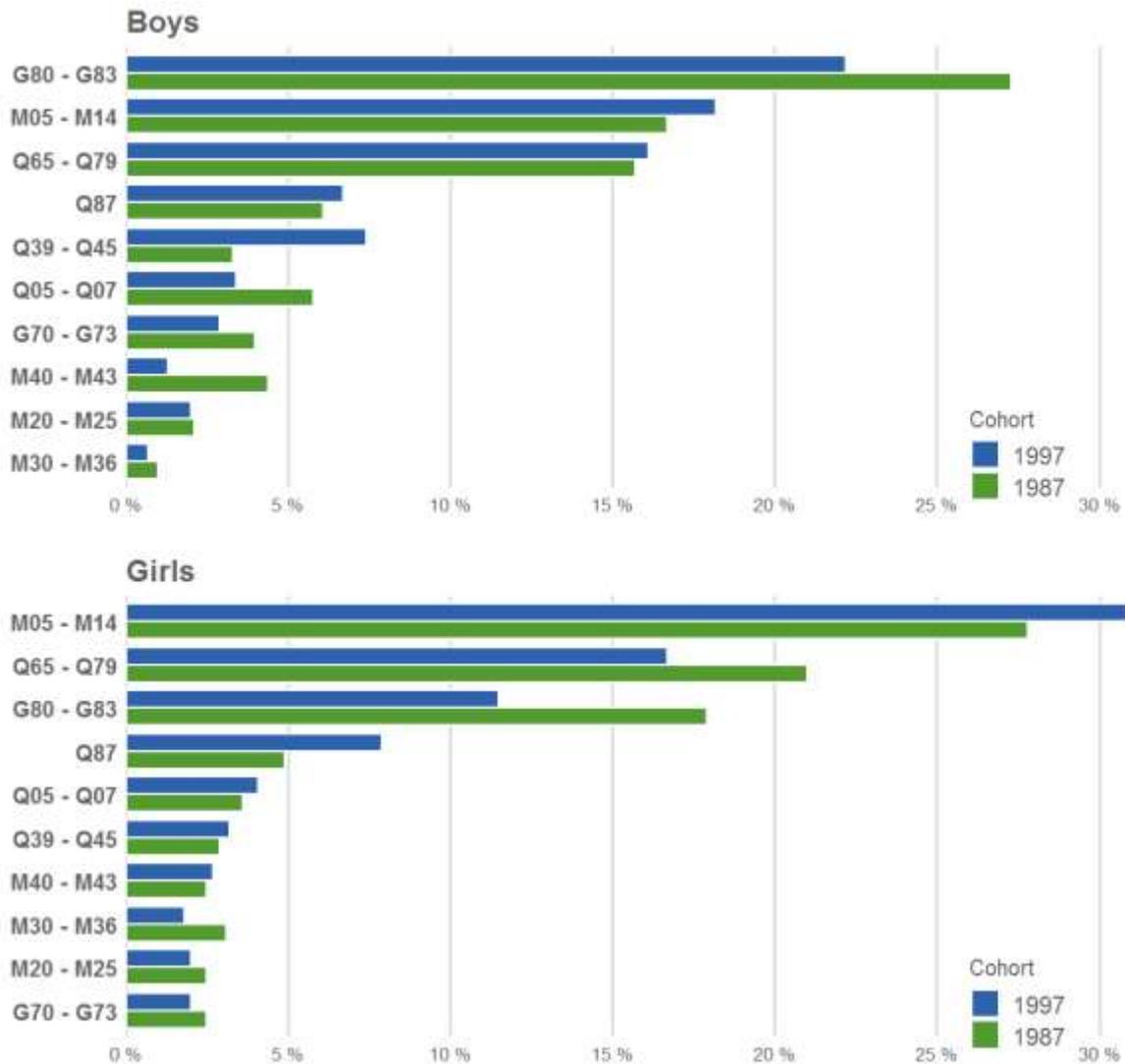


Figure 6. The most common ICD-10 diagnostic groups for young people in the birth cohorts with reduced mobility by gender. The Y-axis represents the diagnosis group and the X-axis the proportion (%) of all diagnoses pertaining to the gender in question in the cohort.

Young people in the birth cohorts with impaired mobility and at risk of exclusion

Various exclusion indicators have been developed to identify young people at risk of exclusion, which, according to research, are all associated with an increased risk of exclusion in young adulthood (Ristikari et al. 2017). The indicators of exclusion risk used in this study were: mental health issues, poor school performance, no school enrolment after basic education, dropout from secondary education, crime, long-term social assistance, teenage motherhood, and lack of record in the registries of public agencies. In addition to examining the indicators separately, we also combined them. We also calculated the prevalence of children being placed outside the family home during childhood among the individuals included in our study. The risk indicators of exclusion for those born in 1997 were defined as follows:

- **Placement outside the family home:** An entry for a placement outside the family home in the child welfare register before the age of 18.
- **Mental health issue(s):** Care record register entry for ward visit with primary diagnosis related to a mental health or behavioural disorder, or receiving disability support from Kela for children under or

over 16 years old with a psychiatric or behavioural disorder diagnosis (ICD-10 codes F10-F69 or F80-F99) (Psychiatric diagnosis).

- **Purchase of a psychiatric drug:** Kela's drug reimbursement register entry for the purchase of psychiatric drugs (ATC classification N05A-C or N06A-C) during 2004-2016.
- **Poor school performance:** Average of all subject grades taken from the joint application register of the Finnish National Agency for Education is below 7 (Average below 7.0).
- **No school enrolment after basic education:** No entries in the joint application register of the Finnish National Agency for Education for the years 2013-2017 (No enrolment).
- **Dropout from secondary education:** Three or more joint applications during the years 2013-2017 (At least 3 joint applications).
- **Crime:** At least five penal notices or criminal convictions in the registers of the Legal Register Centre of Finland (Criminal conviction or 5 penal notices).
- **Long-term social assistance:** Received social assistance for at least 6 months after reaching the age of 16 (Social assistance for at least 6 months).
- **Outside public registers:** No public record: No joint application, no entry regarding Kela's student financial aid, no entry regarding paid employment or unpaid benefits in the registers of the Finnish Centre for Pensions, not retired (No public record).
- **Teenage motherhood:** Giving birth before the age of 20.

For those born in 1987, the same indicators were applied as from the period of time 10 years earlier and, where necessary, included the corresponding ICD-9 diagnoses:

- A care record register entry for ward visit with primary diagnosis related to a mental health or behavioural disorder, or receiving disability support from Kela for children under or over 16 years old with a mental health or behavioural disorder diagnosis (ICD-9 codes 290–319, excluding 290, 293, 294, 310, 317–319).

The proportions of young persons with impaired mobility and other young persons having the indicators are presented by gender and in both cohorts in Figure 7. The precise proportions of each indicator are reported in Table 10 in the appendices. By far the most common indicators included in the data are attending a hospital ward, a Kela disability benefit due to mental health or behavioural disorders, an entry regarding the purchase of a psychiatric drug, or an average subject grade of less than seven (7.0) in the joint school application. In addition, young people with impaired mobility are less likely than other young people to have a register entry for the joint application.

Young people with impaired mobility **more frequently attend hospital wards than other young people or have received disability benefits from Kela due to mental health diagnoses:** For boys with impaired mobility, the proportions are 26.9% and 21.9% for those born in 1987 and in 1997, respectively. Correspondingly, the proportions for girls with reduced mobility are 14.0% and 19.0% in 1987 in 1997, respectively. In contrast, the proportion of other young people is 6–7% in both birth cohorts, regardless of gender.

An entry for the purchase of a psychiatric drug was recorded for 31.1% of girls with impaired mobility in the 1987 birth cohort. For boys in the same cohort, the proportion was 22.8%. For other young people in this cohort, the equivalent proportions were 12.9% for boys and 8.6% for girls. In the 1997 birth cohort, approximately 26% of both girls and boys with impaired mobility had an entry for the purchase of psychiatric drugs. The corresponding proportions for other young people were 15.3% for girls and 10.7 for boys.

An average subject grade of below 7.0 is almost the same for young people with impaired mobility and other young people by gender and cohort, but the proportion varies. People with impaired mobility and other boys born in 1987 account for approximately 28–29% and girls born in the same year 12–14%. The proportion for boys born in 1997 is approximately 22%, 10.6% for girls with impaired mobility born in the same year, and 7.1% for other girls.

Of the boys and girls with impaired mobility born in 1987, 20.7% and 17.3% did not have an entry in the joint school application register for the five-year period following their 16th birthday, respectively In

the 1997 cohort, the equivalent proportions for young people with impaired mobility were 13.5% for boys and 6.8% for girls. In contrast, other young people born in 1987 and 1997 accounted for approximately 3% and approximately 1%, respectively.

Furthermore, the proportions of young people with impaired mobility who had been **placed outside the family home** was higher than among other young people. The only exception was that of boys in the 1997 cohort, who, alongside their peers with impaired mobility, accounted for approximately 6%. The situation was different in the 1987 cohort, with 6.5% of boys with impaired mobility and 3.1% of other young boys having been placed outside the family home. Interestingly, however, the proportion of placements outside the family home of young people with impaired mobility had remained at almost the same level in both cohorts under consideration for boys, whereas the proportion of girls with reduced mobility and other girls was significantly higher, with girls with impaired mobility exceeding 8%.

Of the boys born in 1987, 7.8% of the boys with impaired mobility and as many as 14.5% of other boys had a criminal conviction or at least five penal notices. This compared with only 2–3% of girls with impaired mobility and other girls. For those born in 1997, the equivalent proportions were 3.2% for boys with impaired mobility and 4.7% for other boys. This compared with less than 1% for both girls with impaired mobility and other girls.

Of those having received **social assistance** for at least six months in the 1987 cohort, 7% were boys with impaired mobility and 5.5% were other boys. In comparison, social assistance had been received by 11.1% and 8.2% of girls with impaired mobility and other girls in the same cohort, respectively. The equivalent proportions in the 1997 cohort showed only a very slight difference between young people with impaired mobility and other young people; in actual fact, the proportion of other young people was marginally higher. For boys, the share was 6.9 for those with impaired mobility and 7.8% for those without; whereas for girls, the share was slightly higher, at 8.8% and 9.8% for those with and without impaired mobility, respectively.

Of the girls with impaired mobility born in 1987, 1.4% had made at least three **joint applications for secondary school**, compared to 6.3% of other girls. The difference between boys born in the same year was nowhere near as pronounced, with 1.1% and 2.3% of boys with impaired mobility and other boys having made at least three joint applications, respectively. The corresponding proportions of those born ten years later were reversed. The share of boys with impaired mobility was 4.2% and other boys 3.4%. In contrast, 6.5% and 4.7% of girls with impaired mobility and other girls had made at least three joint applications, respectively.

Records for 0.5% and 0.2% of boys and girls with impaired mobility in the 1987 cohort had been misplaced, respectively. This compared to 1.6% for other boys and 0.9% for other girls in the same cohort. There was a slight exception for boys with impaired mobility born in 1997, 3.2% of whom had no public record. The percentage of girls with impaired mobility was 1% and that of other young people was 0.6% for both genders.

In addition to the indicators presented in Figure 7, 2.7% of the girls with impaired mobility born in 1987 had become a mother before the age of 20, whereas the same applied to only 0.3% of other girls in the same cohort. The equivalent proportions for the 1997 cohort were 1.3% and 0.8%, respectively.

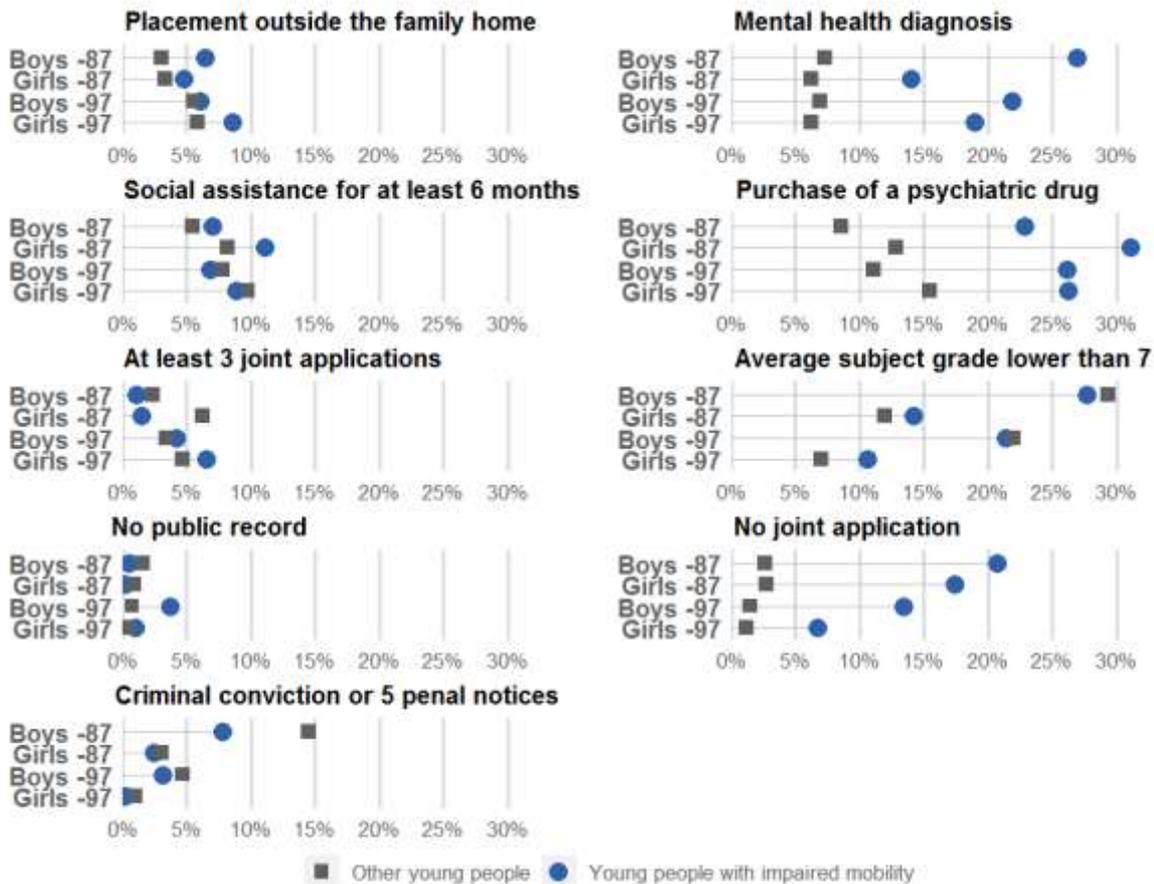


Figure 7. The distribution of exclusion indicators by gender among young people with impaired mobility and other young people across the national birth cohorts. Y-axis gender and national birth cohort and X-axis the percentage (%).

Risk aggregates (groups) were formed from the totals of the indicators. The person belonged to group:

- No.0 if none of the indicators applied.
- No.1 if one indicator was applicable.
- No.2 if two indicators were applicable.
- No.3 if three or more indicators were applicable.

The distribution of young people across the risk groups is presented in Figure 8. Young people with impaired mobility accumulated more risks overall than other young people. Of the boys with reduced mobility born in 1987 and 1997, 13% and 11% had three or more risk factors for exclusion, respectively; whereas the corresponding category for other young people was 7% in both cohorts. Of the girls with impaired mobility, 10% had three or more risk factors in the 1987 cohort and 11% in the 1997 cohort. Of the other girls, 6% had three or more risk factors in both cohorts.

Of the young people with impaired mobility in the 1987 cohort, 23% of the boys and 20% of the girls had two risk factors. The corresponding shares for other young people were 11% for boys and 7% for girls. Of the young people with impaired mobility born in 1997, 18% of boys and 13% of girls had two risk factors. This compared to 8% and 7% for the other boys and girls, respectively.

Of the boys with impaired mobility born in 1987, 34% were completely devoid of risk factors. This figure rose to 40% in the 1997 cohort. In comparison, the equivalent proportions of other boys were 54% for those born in 1987 and 63% in 1997. Of the girls with impaired mobility, 44% of the 1987 cohort and 52% of the 1997 cohort were completely devoid of risk factors. This compared to 66% and 70% of other girls in the same cohort.

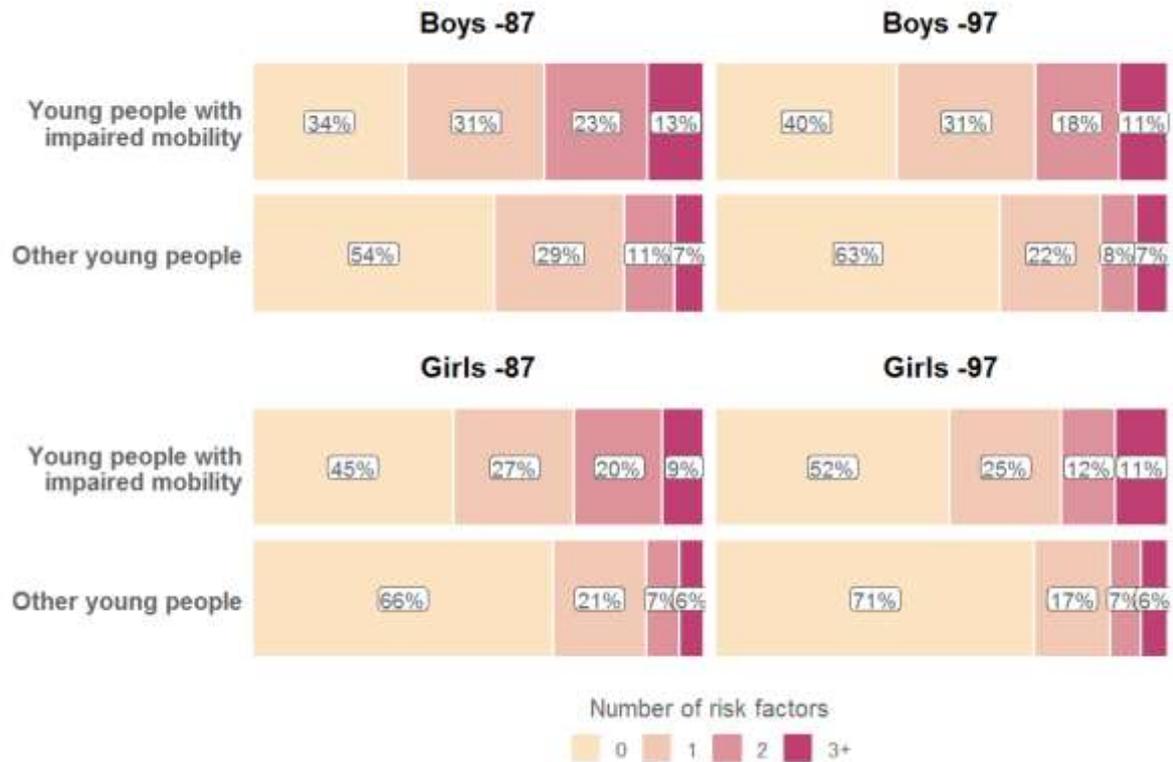


Figure 8. The distribution of exclusion factors in both national birth cohorts by gender.

The young people in the 1987 cohort at risk of exclusion in adulthood

The young people born in 1987 were monitored into adulthood, enabling us to formulate indicators describing their risk of exclusion as adults. The indicators are as follows:

- Unemployed for a total of at least 12 months in the period 2015–2016.
- The Finnish Centre for Pensions recorded an annual income of no more than EUR 1,000 in the years 2012–2015 or no entry at all.
- Only basic education completed by 2015.
- Received disability pension on the basis of a mental health condition in the period 2007–2016 (ICD-10 codes F10-F69 or F80-F99).
- No public record; i.e. no records of study, work history, pension, family leave or unemployment in the period 2005–2015, or the person is deceased or lives abroad according to the most recently available information.

The distribution of individual indicators by gender among young people with impaired mobility and other young people is presented in Figure 9. Young people with impaired mobility are at least slightly more likely to have all of the exclusion risk indicators as adults than other young people.

Of the young people with impaired mobility, 37% of boys and 28% of girls had not earned more than EUR 1,000 in the period 2012–2015. This compared to approximately 8% of other young people of both genders. Of the young people with impaired mobility, approximately 26% of boys and 22% of girls had not gone on to attend upper secondary education by 2015. This compared to slightly less than 13% for other young people of both genders. As many as 12% of young people with impaired mobility did not have a public record: or had died; whereas the same applied to only 3% of other young people.

Of the boys with impaired mobility, 10% had been unemployed for more than 12 months. This compared to 8% for other boys. The equivalent proportions for girls were 7% and 8%, respectively.

Of the boys with impaired mobility, 3% had received disability pensions for mental health reasons, whereas the same applied to only 1% of other boys. This compared with less than 3% of other girls and 2% of other boys.

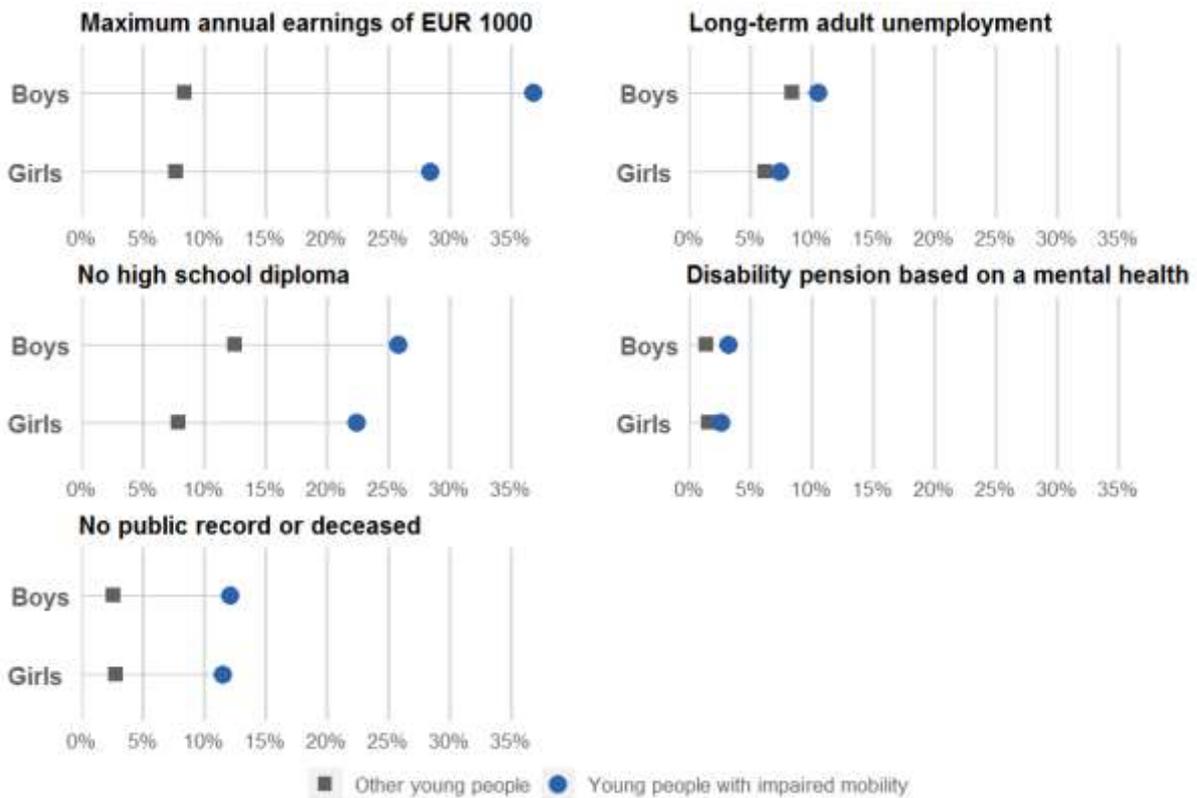


Figure 9. The distribution of exclusion risk factors in adulthood of the 1987 national birth cohort. X-axis percentage (%).

The indicators were once again combined into risk groups by aggregating the individual indicators, just as they were with the indicators of exclusion during adolescence. The distribution of the gender-specific risk groups for the young people with and without impaired mobility are presented in Figure 10. Of the young people with impaired mobility, 8% of boys and 10% of girls had three or more risk indicators as adults. For the other young people, approximately 2% of boys and 1% of girls had three or more risk indicators. Of the young people with impaired mobility, 46% of boys and 58% of girls had none of said indicators. In comparison, 75% of other boys and as many as 80% of other girls had no indicator.

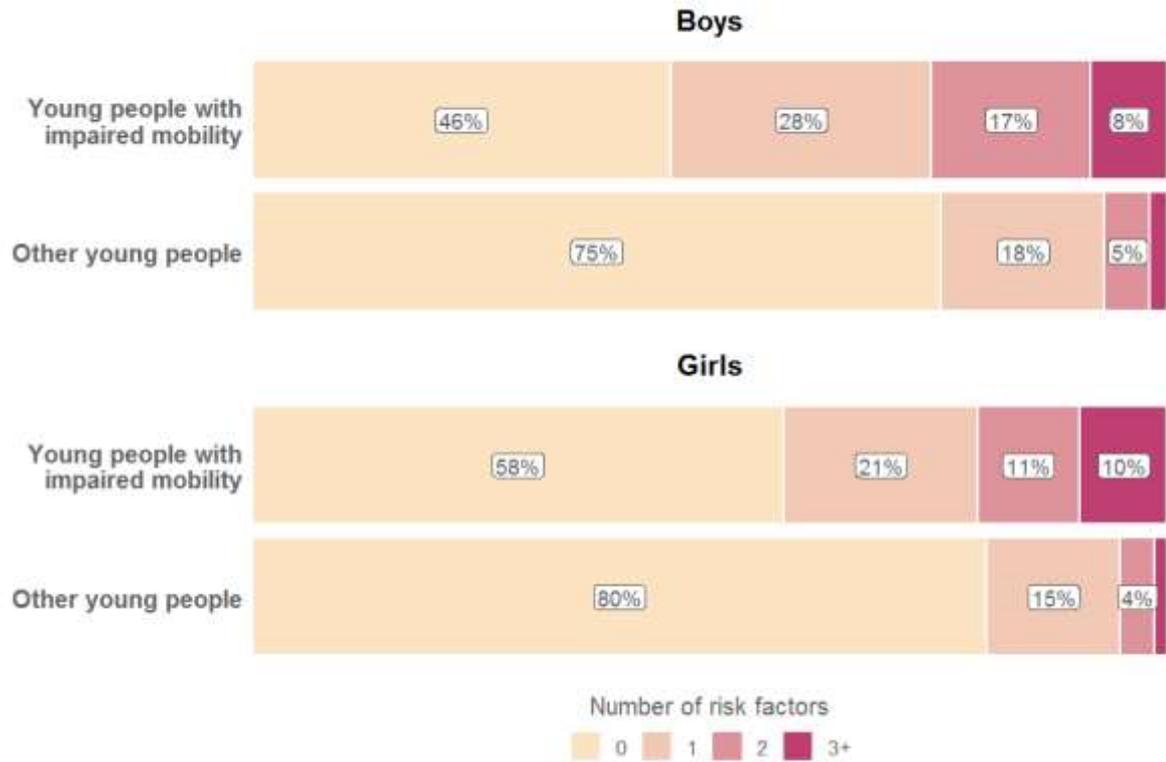


Figure 10. The adult risk of exclusion indicators of the 1987 national birth cohort.

Figure 11 shows the proportions of risk aggregates in adolescence and adulthood by gender and how young people have transitioned from their adolescent risk groups to the various adult risk groups. The findings presented in Figure 11 are also provided in Table 11 in the appendices. The majority of the young people with and without impaired mobility to whom none of the exclusion risk factors applied during adolescence, regardless of gender, did not experience any of the equivalent risk factors during adulthood. In contrast, there were differences between the young people with and without impaired mobility in regard to the other risk groups.

Only 45% of boys with impaired mobility who had one (1) risk factor during adolescence went on to have no risk factors during adulthood. The equivalent transition occurred in 75% of other boys. In regards to girls, the transition in question occurred in 50% and 76% if girls with and without impaired mobility, respectively.

In terms of the boys with impaired mobility who had two risk factors during adolescence, 26% went on to have two risk factors and 21% were in the three or more risk factor group during adulthood. In comparison, 16% of girls with impaired mobility transitioned into the two risk factor group and 30% into the three or more group during adulthood. The corresponding proportions were 10% and 4% for other boys and 11% and 5% for other girls.

Only 13–15% of the young people in the three or more risk factor group transitioned into the same group during adulthood, regardless of gender or mobility impairment. In contrast, 43% of the boys and 37% of the girls with impaired mobility who were in the three or more risk factor group during adolescence transitioned into the two risk factor group as adults. For other young people, the corresponding proportions were 24% for boys and 22% for girls.

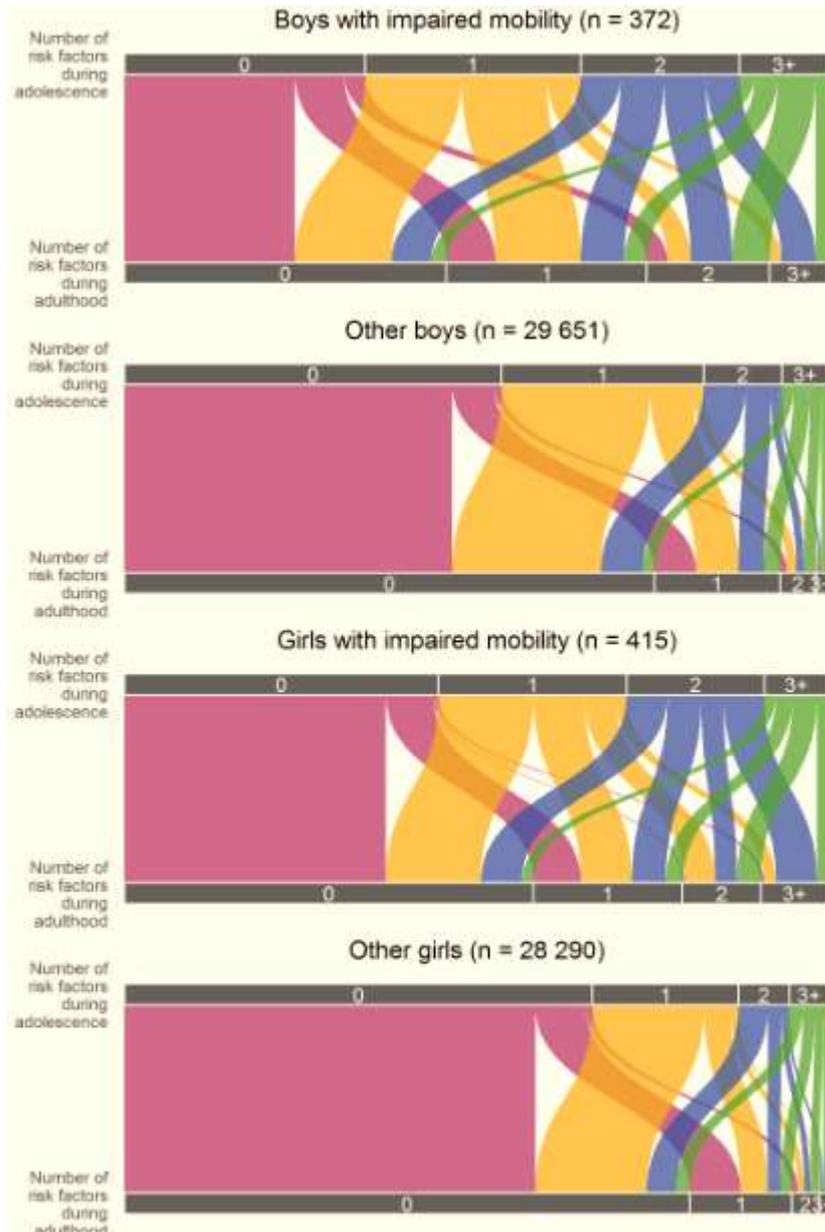


Figure 11. Transitions from adolescent at-risk groups to adult at-risk groups in the 1987 national birth cohort.

The quality of life of young people with severely impaired mobility on the basis of the school health promotion study

Bullying, violence, and distress

The school health promotion study also posed questions to the respondents regarding their quality of life. The first of these concerned bullying. The young people were asked how many times they had been bullied at school during the previous term and how often they had participated in bullying other students. The distribution of the responses of both the young people with and without impaired mobility who had experienced being bullied and participating in bullying is presented in Figure 12. Of the young people with impaired mobility, 46% had been bullied at some point during the previous school term, whereas only 18% of the other young people had comparable experiences. Furthermore, the young people with impaired mobility experienced bullying more regularly. In addition, 37% of young people with impaired mobility and only 14% of other young people had participated in bullying during the previous school term.

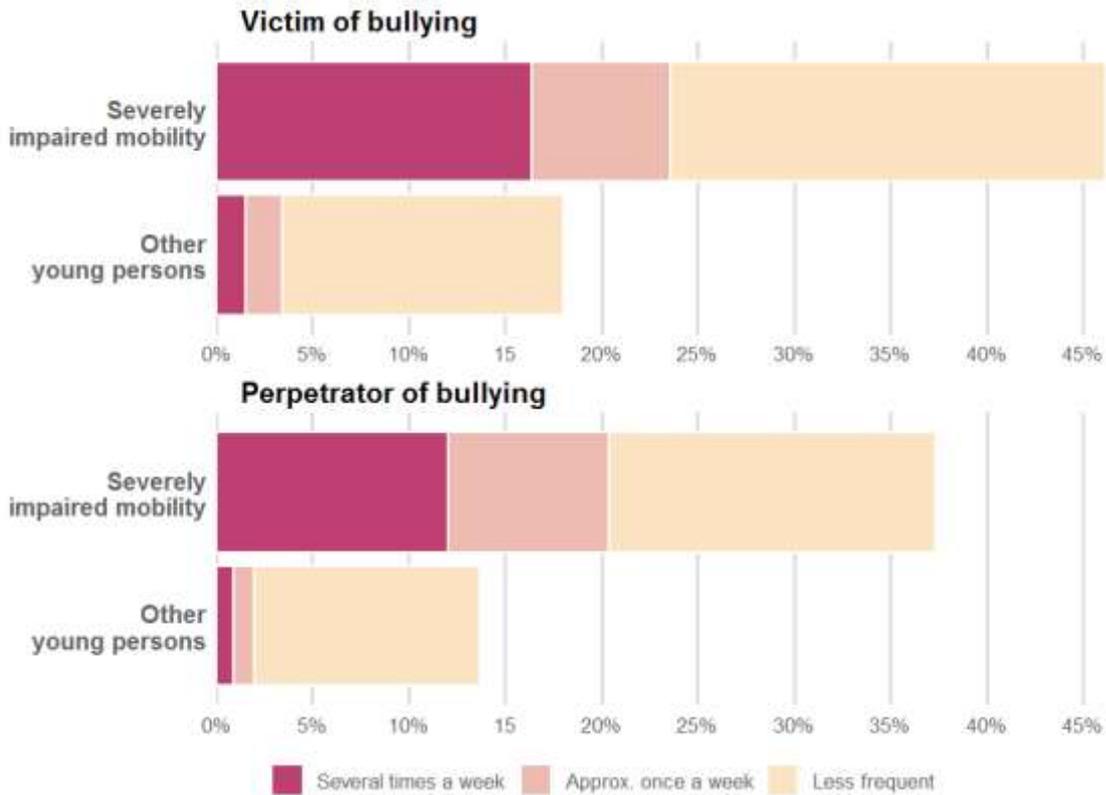


Figure 12. The distribution of responses of young people with and without impaired mobility regarding experiencing being bullied (above) and participating in bullying (below).

The experiences of violence or the threat of violence, as well as of theft or attempted theft, of the young people with and without impaired mobility is presented in Figure 13. The young people with impaired mobility had experienced significantly more acts of theft, intimidation, and physical violence. **Violence or the threat of violence was used to steal or attempt to steal** possessions from 21% and 3% of the young people with and without impaired mobility, respectively. **Other acts of theft** were perpetrated on 26% and 10% of young people with and without impaired mobility, respectively.

Of the young people with impaired mobility, 27% had been **threatened with physical violence online, on the phone, or in person**, compared to only 9% of those without impaired mobility. Of the young people with impaired mobility, 24% had experienced **being subject to physical violence**, compared to only 6% of other young people.

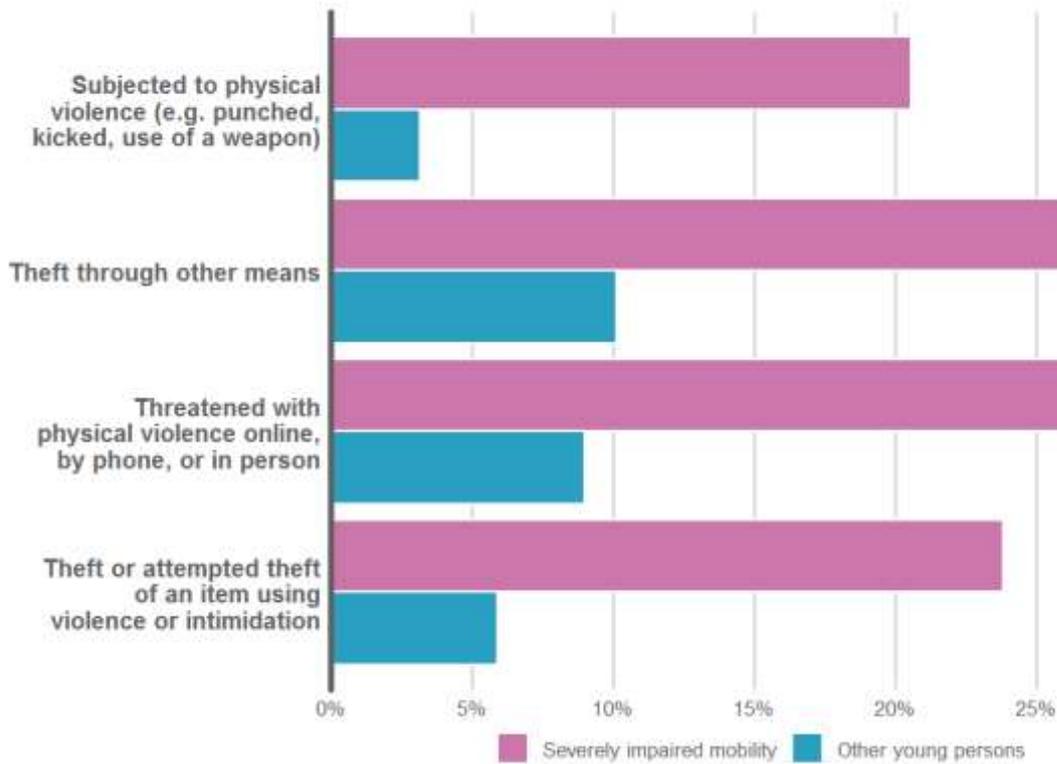


Figure 13. Have any of the following things been done to you during the last 12 months? The proportions of positive answers from young people with and without severely impaired mobility.

The proportion of young people who experienced sexual harassment or other harassment during the last 12 months are presented in Figure 14. Young people with impaired mobility had experienced much more propositioning or harassment than the other young people. A total of 36% of young people with and 12% without impaired mobility had answered yes to at least one of the statements presented in Figure 14; i.e. they had experienced unsolicited sexual advances or harassment over the phone or online at school, on the street, in shopping centres or other public spaces, in their own or someone else's home, or in another private space. The group with the fewest positive responses were the young boys without impaired mobility (6%), whereas three times as many girls in this group responded yes (18%). The equivalent figures for the young people with impaired mobility were 37% for boys and 35% for girls.

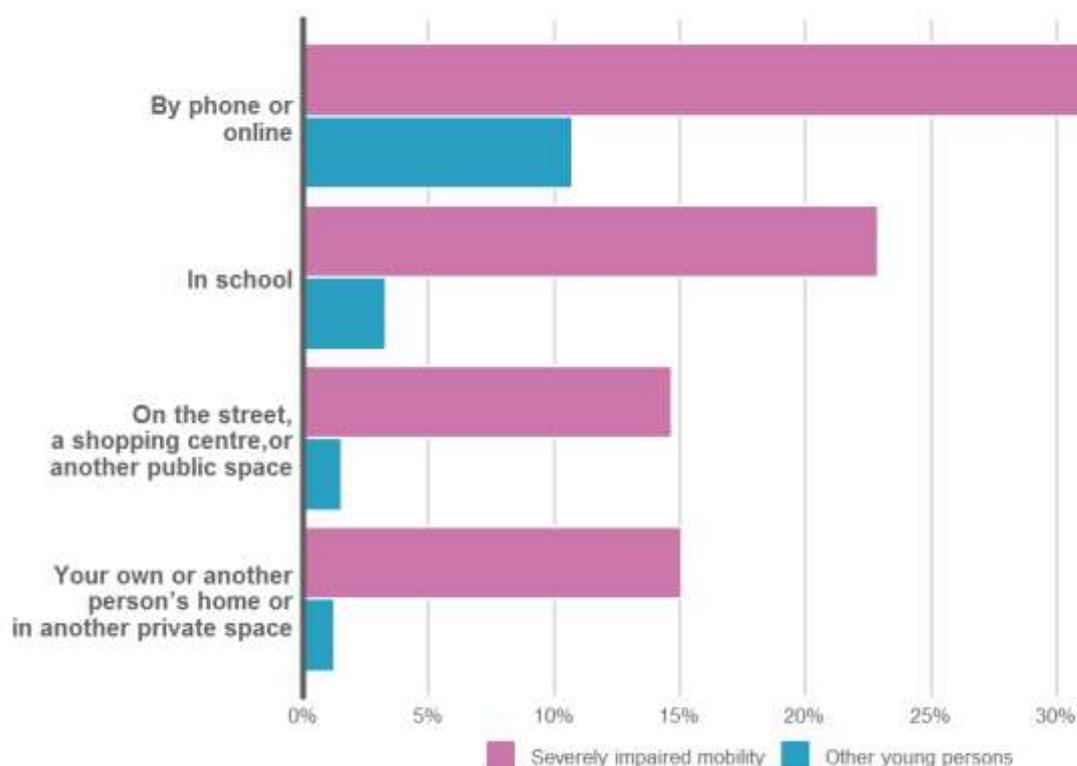


Figure 14. Have you experienced inappropriate sexual proposals or harassment during the past 12 months? The proportions of positive answers from young people with and without severely impaired mobility.

Mood

The state of mind of the young people was assessed with regard to anxiety using nine questions, seven of which were drawn from the GAD7 scale (Spitzer et al. 2006). The question was asked with regard to all of the study themes. How often have you been bothered by the following problems in the two weeks prior to completing this form? The themes were (1) **Feeling nervous, anxious or uptight**; (2) **Unable to stop or control my worries**; (3) **Excessive concern over various matters**; (4) **Difficulty relaxing**; (5) **Feeling so uneasy that it is difficult to stay still**; (6) **Tendency to become easily irritated or annoyed**; (7) **Fear that something terrible might happen**; (8) **Little interest or pleasure in doing different activities**; and (9) **Low mood, depression, hopelessness**. The distribution of responses is presented by the young people with and without impaired mobility in Figure 15. When considered as a whole, the young people with impaired mobility reported more of these themes; especially those associated with regularly feeling anxious.

Of the young people with severely impaired mobility, 22% experienced **nervousness, anxiety, or feeling uptight** almost every day. This compared to only 7% of other young people. These feelings were experienced by 67% of young people with and 49% of those without impaired mobility during the previous two weeks.

The statement “I could not stop or control my worries” was used to assess the level of **worrying** during the previous two weeks. Of the young people without impaired mobility, 31% stated that they could not stop or control their worries. The same response was given by twice as many of the young people with severely impaired mobility (63%). Of the young people with and without severely impaired mobility, 65% and 41% had experienced being **excessively concerned about various matters**, respectively. In terms of experiencing excessive concern on a daily basis, 18% of young people with severely impaired mobility responded positively. This compared to only 5% of the young people without impaired mobility.

In their own estimation, 67% of young people with severely impaired mobility experienced **difficulty relaxing**. This compared to only 39% of other young people. Of these young people with impaired mobility, 20% experienced difficulty relaxing on a daily basis, as compared to 5% of the other young people.

Of the young people with severely impaired mobility, 60% had experienced feeling so **restless** that they could not stay still during the previous two weeks. This compared to half as many among the other young people (30%). Of the young people with severely impaired mobility, 18% experienced restlessness daily, compared to 3% of the other young people.

Of the young people with severely impaired mobility, 70% had experienced a tendency to easily become irritated or annoyed in the past two weeks, as compared to 48% of the other young people. Of the young people without impaired mobility, 6% stated that they experienced worrying and irritability on a daily basis. This compared to 24% of young people with impaired mobility who experienced worrying and irritability almost every day in the previous two weeks.

Only 27% of young people without impaired mobility stated that they experienced a **fear that something terrible might happen**, in comparison to 59% of young people with severely impaired mobility. This feeling was experienced by 18% of young people with impaired mobility almost every day during the previous two weeks, in comparison to 4% of the other young people.

In the last two weeks, 63% of young people with severely impaired mobility stated they had **little to no interest or pleasure in doing various activities**. In contrast, 31% of the other young people experienced the same. Of the young people with impaired mobility, 18% experienced this feeling on a daily basis, whereas only 4% of the other young people felt the same.

Low mood, depression, and hopelessness were experienced by 66% of the young people with severely impaired mobility on at least several days in the last two weeks. Only half as many of the other young people had the same experiences (33%).

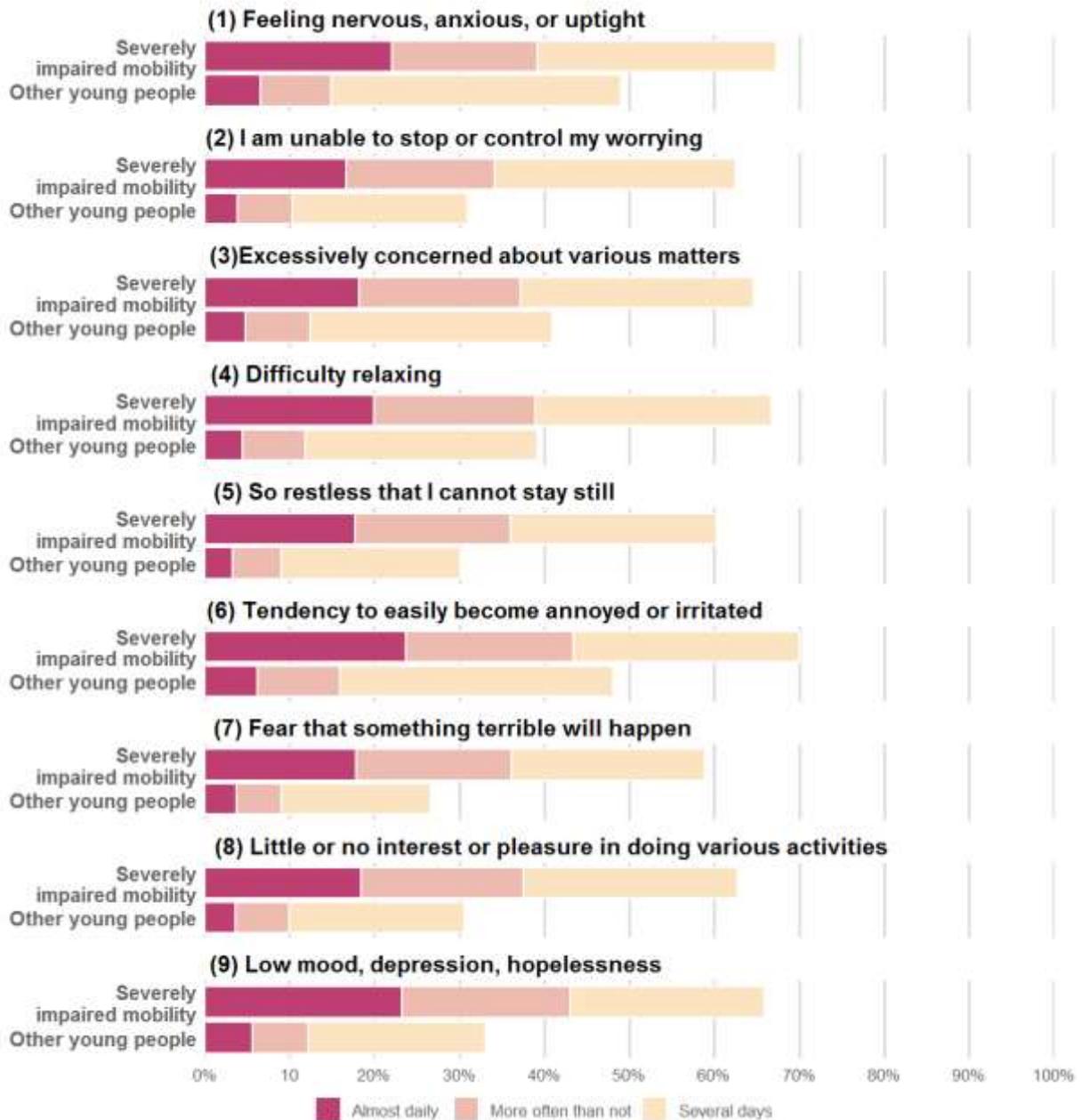


Figure 15. The numbers of young people with and without severely impaired mobility experiencing anxiety in the two weeks prior to completing the form.

The mental wellbeing of the young people was assessed using the questions on the 7-item WEMWBS scale (Warwick, 2019). The distribution of the questions and responses of the young people with and without impaired mobility are presented in Figure 16. Young people with impaired mobility have generally experienced less positive mental wellbeing than other young people.

The individual statements in Figure 16 reveal that a total of 24% of young people with severely impaired mobility expressed positive feelings about their future often or on a daily basis, in comparison to 28% who only occasionally experienced such feelings. The equivalent figures for the other young people were 43% and 37%, respectively. It would appear that young people with severely impaired mobility (48%) experienced hopelessness more than twice as much other young people (20%).

Of the young people with severely impaired mobility, 22% expressed **feeling useful** often or daily, compared to 42% of the other young people. Of the young people with impaired mobility, 46% stated that they never or seldom felt useful, in comparison to 18% of the other young people.

Of the young people with severely impaired mobility, 25% stated that they felt relaxed often or always, which compared to 42% of the other young people. Of the young people with impaired mobility, 31% experienced feeling relaxed every once in a while, compared with 38% of the other young people.

Of the young people with severely impaired mobility, 45% stated that they could never or seldom **handle problems well**. In contrast, 29% of the other young people experienced the same, of which 45% stated that they were able to handle problems well often or all the time. Correspondingly, the same was felt by 25% of the young people with impaired mobility.

Of the young people with severely impaired mobility, 32% stated that they could **think clearly** often or all the time. Almost twice as many of the other young people gave the same response. In other words, 56% stated that they could think clearly often or all the time. Only 14% stated that they could never or seldom think clearly. Of the young people with impaired mobility, a total of 38% stated that they could never (17%) or seldom (21%) think clearly.

Of the young people with severely impaired mobility, 40% stated that they felt **close to other people** often or all the time, which compared to 59% of the other young people. Of the other young people, only 14% stated that they never or seldom experienced themselves as being close to other people. Of the young people with severely impaired mobility, the corresponding figure was 34%, of which approximately half (16%) stated that they never felt close to other people..

Of the young people with severely impaired mobility, 42% stated that they felt able to make their own decisions, which compared to 72% of the other young people. Furthermore, only 8% of the other young people stated that they were only seldom or never able to make their own decisions. This compared to 28% of the young people with impaired mobility, of which 13% never felt able to make their own decisions.

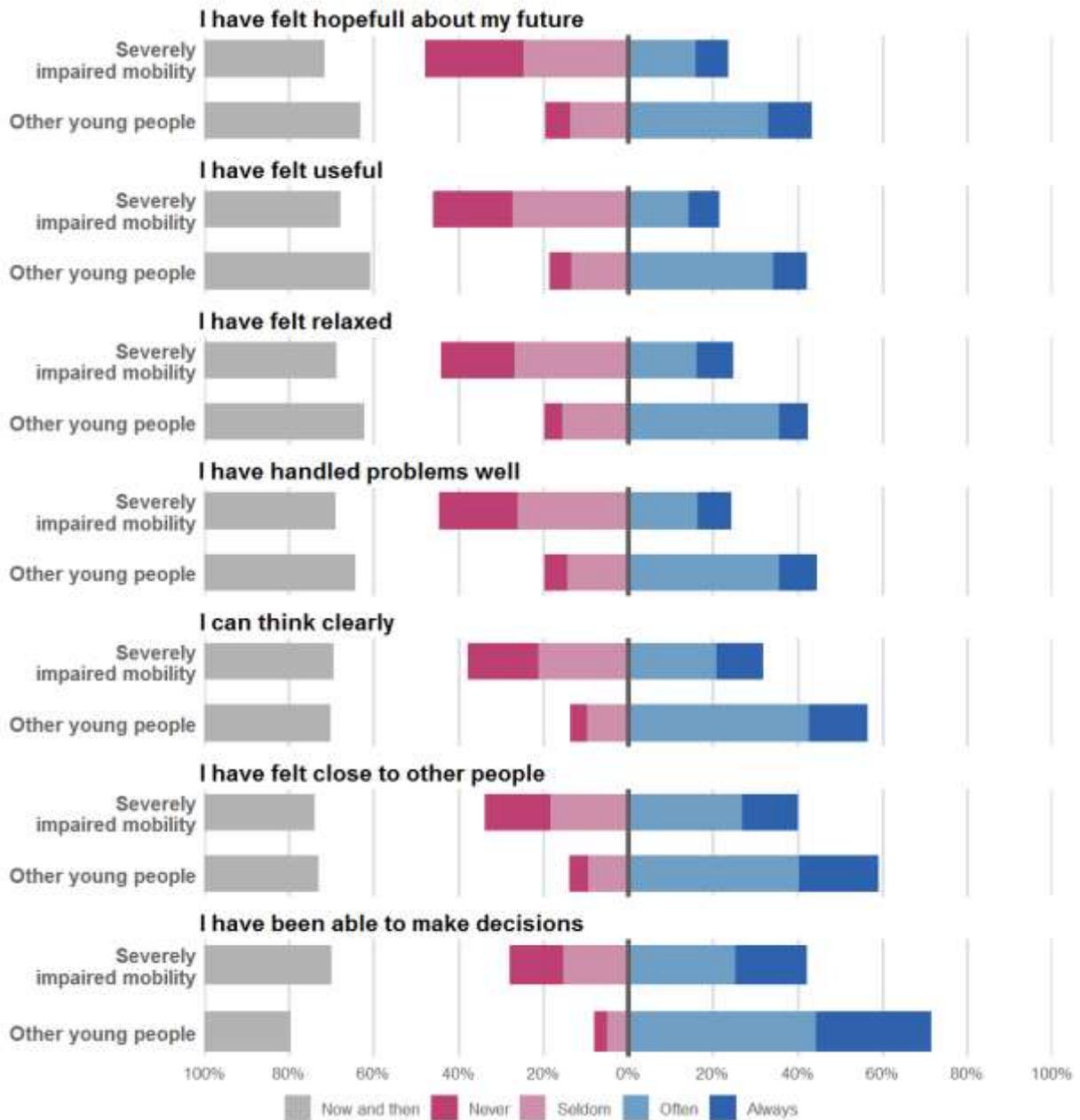


Figure 16. Distribution of the responses to the positive mental wellbeing scale questions by young people with and without severely impaired mobility.

The young people were asked **if they had been concerned about their own mental state** during the last 12 months and if they had sought and received support in these matters. Of the young people with impaired mobility, 48% stated that they had been concerned about their own mental state during the past 12 months, compared to 29% of the other young people.

The distribution of the **young people receiving support** is presented in Figure 17. Compared to other young people, the young people with impaired mobility had received somewhat more support at school and from various services, but there was no big difference in terms of the support received from parents and friends. Moreover, young people with reduced mobility had gone without support more often, despite having needed it.

Most often, the young people had received support and assistance in relation to their state of mind from **their friends and relatives**, with 57% of people with impaired mobility and 70% of other young people reporting having received at least some support. Of the young people with severely impaired mobility, 23%

stated they had not received help or support from their friends and relatives despite having needed it. This compared to 13% of the other young people.

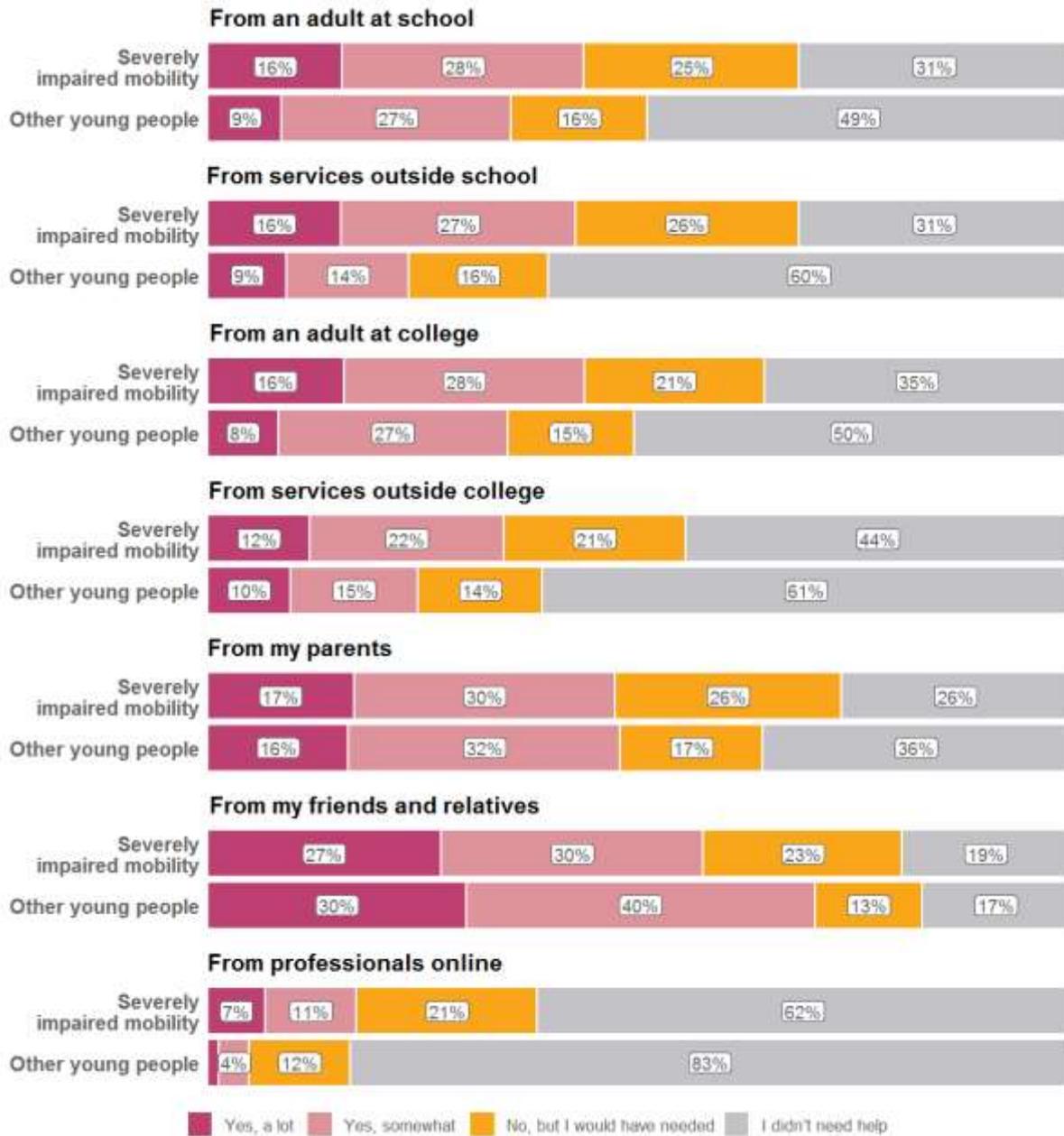


Figure 17. Have you received support and help concerning your mood during the past 12 months? The distribution of responses of young people with and without severely impaired mobility.

The young people's satisfaction with their life

The young people were asked if they were satisfied with their life. The distribution of the responses of both the young people with and without severely impaired mobility is presented in Figure 18. Of the young people with impaired mobility, 21% were **very satisfied** and 30% were **quite satisfied** with their life. This compared to 27% and 49% of the other young people, respectively. In contrast, 12% of the young people with impaired mobility were **very dissatisfied** with their life, as compared with only 2% of the other young people.

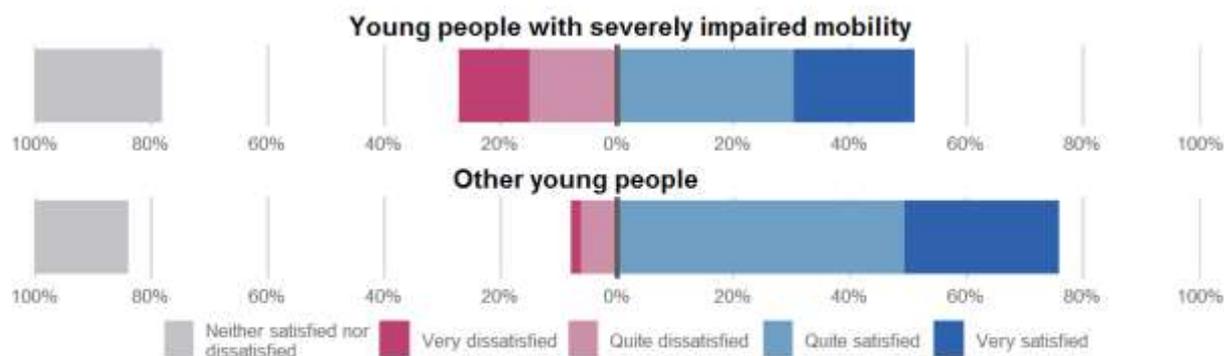


Figure 18. Are you satisfied with your life at the moment? The distribution of responses of young people with and without severely impaired mobility.

The feelings of the young people were also surveyed via individual questions, the distribution of the responses to which are presented in Figure 19. Young people with impaired mobility have more negative and less positive feelings than other young people. In examining the responses, the answers “often” and “always” have been combined into one category. The same has been done for the answers “never” and “seldom”. The answers of “now and then” have been excluded from the report.

Of the young people with impaired mobility, 52% experienced always or often having a goal and a purpose, compared with 74% of the other young people. Of the young people with impaired mobility, 24% responded with never or seldom, compared with 8% of the other young people.

Of the young people with severely impaired mobility, 47% stated they had a feeling of self-worth always or often, compared with 71% of the other young people. In terms of never or seldom having these feelings, 24% of the young people with impaired mobility provided this response, compared to 9% of the other young people.

Of the young people with impaired mobility, 60% stated they were able to **make decisions regarding their own life**, which compared to 83% of the other young people. Of the young people with impaired mobility, 17% stated they were never or seldom able to make such decisions, in comparison to 4% of the other young people.

In regard to the question “**are you able to behave appropriately?**”, 61% of young people with severely impaired mobility responded often or always. This compared to 85% of the other young people. Of the young people with impaired mobility, 16% gave the response of never or seldom, in comparison with 3% of the other young people.

Only 47% of the young people with severely impaired mobility stated that they could manage their life well often or always, which compared to 71% of the other young people. As many as 26% of the young people with impaired mobility stated that they could never or seldom effectively manage their life. This compared to 9% of the other young people.

Of the young people with severely impaired mobility, 49% felt they coped with their life, in comparison with 76% of the other young people. Of the young people with impaired mobility, 26% felt they never or seldom coped with their life, in comparison to 8% of the other young people.

Of the young people with severely impaired mobility, 55% stated that they could often or always **find a solution to problems I encounter**, which compared with 80% of the other young people. Of the young people with impaired mobility, 18% responded to this statement with never or seldom. This compared with 4% for the other young people.

Of the young people with impaired mobility, 64% stated they **knew a person to whom they could turn to seek help with a problem**. This compared to 84% of the other young people. Of the young people with impaired mobility, 16% stated they seldom or never knew such a person, compared with 4% of the other young people.

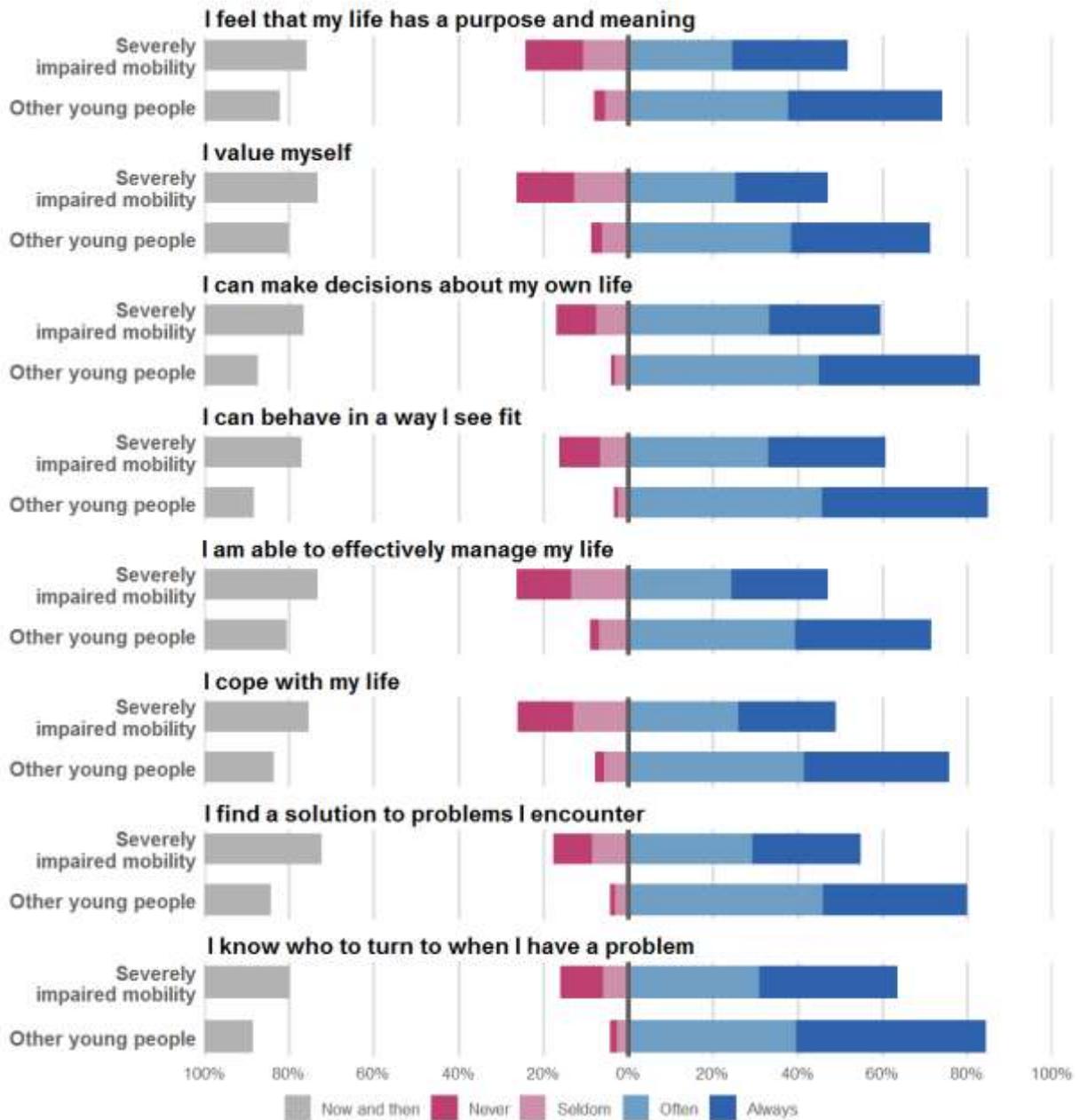


Figure 19. How well do the following statements describe your feelings at the moment? The distribution of responses of young people with and without severely impaired mobility.

Reflection

In this report, we use the terms persons with impaired or severely impaired mobility to refer to people with a physical disability. The study identified that 1.3 % of the young people in the national birth cohorts (1987 and 1997) as having impaired mobility. Based on this, one would expect the proportion to be the same for other birth cohorts at the same age. Consequently, there would be a total of approximately 10,000 young people with impaired mobility in the 14-29 age group. A slightly larger proportion of girls than boys had impaired mobility in the 1987 cohort, but there was no difference in the 1997 cohort. As such, the genders can be expected to be evenly represented.

In the 2017 school health promotion study, the proportion of young people with impaired mobility varied by school grade. In grades 8 and 9 of basic education, the proportion of students with impaired mobility was 1.0%, which is probably a reasonable estimate of the proportion of young people with impaired mobility in the wider population, because almost all children attend comprehensive school in Finland. There were slightly more boys than girls among the grade 8 and 9 respondents to the school health promotion study.

Taking into account the response rate at the time of the 2017 school health promotion study, there were 1,129 young people with impaired mobility in grades 8 and 9 of basic education. On the other hand, assuming that comprehensive school covers all children living in Finland and that one school grade/class represents one year of birth, there are approximately 550 persons with reduced mobility per year of birth. This is somewhat less than the over 700 people per year of birth identified from the national birth cohorts. This would suggest a total of 8,800 persons with impaired mobility in the 14-29 age group.

There are many reasons for the differences between the numbers of person with impaired mobility elicited from the school health promotion study and the national birth cohorts (0.3 percentage points or the estimated 150 persons). A mobility impairment may be so mild that the person does not describe him or herself as being impaired. It may also be the case that the diagnoses selected from the cohorts include too broad a definition of impaired mobility, which results in some of the young people with the selected diagnoses not actually having any mobility restrictions. On the other hand, and despite its broad coverage, the school health promotion study may not reach all young people with impaired mobility, or they may not respond to it.

The most common diagnoses for people with impaired mobility were the same in the 1987 and 1997 national birth cohorts. The three most common diagnostic groups were inflammatory polyarthropathies, cerebral palsy and other paralytic disorders, and musculoskeletal disorders.

In the national birth cohort data, approximately 10% of young people with impaired mobility had not submitted a joint school application. This compared to only a few percent of the other young people. Drop-out from the school system was also indicated in the findings of the school health promotion study. In basic education, 1.0% of the respondents perceived themselves as having severely impaired mobility, whereas the same applied to only 0.7% of those in upper secondary education. Young people with impaired mobility are at a greater risk of not transitioning into upper secondary education than other young people. Further research would be needed in order to establish whether this stems from a permanent situation or from, for example, not submitting applications on time, and the factors contributing to this situation.

The school health promotion study indicates that young people with impaired mobility are bullied significantly more frequently than other young people and that they participate in bullying more often than other young people. It is possible that young people who experience being bullied define bullying differently to other people. Another alternative explanation is that bullying other people is used as a defence mechanism by those experiencing bullying themselves, either reciprocally or preventatively. In summary, the material examined suggests that young people with impaired mobility face more situations of bullying than other young people.

Furthermore, the findings of the school health promotion study suggest that young people with impaired mobility experience more anxiety and less positive mental wellbeing than other young people. It is nevertheless worth noting that the numbers for both groups are high: with regard to nine of the thematic questions on the anxiety scale, 59-70% of young people with impaired mobility experienced some form of anxiety.

ety, compared to 31-49% of other young people. Moreover, fewer young people with impaired mobility responded as often or always experiencing aspects of positive mental wellbeing, such as hopefulness or a feeling close to other people. They also reported going without the support they needed with issues relating to their state of mind more often than other young people.

The young people with impaired mobility had experienced significantly more acts of theft, intimidation, and physical violence than other young people. They had also experienced more sexual propositions and harassment than other young people. This could affect their satisfaction with life. The proportion of young people with impaired mobility who were not satisfied with their life was over three times higher compared to other young people. Correspondingly, a little more than half of young people with impaired mobility and three quarters of other young people were satisfied with their life. Young people with impaired mobility have more negative and fewer positive feelings than other young people.

Based on the experiences described above, we can surmise that young people with impaired mobility have less positive perceptions of themselves, other people, and their influence on their own life than other young people. Looking at the risk of exclusion and actual marginalisation, the young people with impaired mobility in both birth cohorts were shown to have a higher risk of exclusion than other young people. The presence of risks in young people with impaired mobility predicted more potential marginalisation than for other young people. In particular, the accumulation of risk factors in childhood strongly predicts the risk of exclusion in adulthood. While less than one fifth of the young people with impaired mobility born in 1987 were at risk of exclusion as adults, this compared to only 2% of the other young people.

Conclusions and recommendations

Above all else, young people with impaired mobility are young people. On the basis of our data, however, we can conclude that the barrier to mobility exposes them to different risk factors more than other young people. Various multi-faceted measures are required to negate these risks. In addition to providing individual and active support for families and young people, there is a need for systematic development of both the service system and school and study environments. This development requires both organisational change within the relevant services and a change of attitude.

Indeed, a barrier-free and accessible environment goes a long way in enabling people with impaired mobility to function in society in different ways. When accessibility and availability is realised correctly, it is a sure sign that society does not wish to exclude anybody. In fact, functional environments and accessible services do not engender negative stigma; instead, they consolidate positivity.

Children and young people with impaired mobility should be able to participate equally in their communities, alongside other children and young people. For this to succeed, timely and proactive action is needed throughout the service system. Moreover, in addition to functional environments, we also need tools, sufficient mobility-enhancing services, and individualised assistance. In addition to school, rehabilitation services play an important role in the development of children and young people.

Indeed, studying and graduating are important milestones in young people's lives. Like everyone else, young people with impaired mobility should be provided with adequate support and supportive guidance. The role of work placements, internships, and summer jobs is also important to all young people. Strengthening self-esteem requires positive encounters and experiencing being able to cope in different situations. The possibility of studying and/or gaining work experience both at home and abroad should also be self-evident for young people with disabilities. How can this be supported and facilitated?

Our study showed that young people with impaired mobility felt they received less support from adults than other young people. They also experienced bullying more often than other young people. Should student support services also be developed in this regard? Accessibility and equality issues should also be promoted in educational institutions, as well as in society at large. Changing negative attitudes towards difference is the responsibility of society as a whole. When people and society express a positive attitude,

this strengthens the self-esteem of all young people and gives them the courage to participate and act in society.

Moreover, while experiencing equality alongside other young people is important, it can also be important for young people to find adults who are in a similar situation as themselves with regard to functional capacity. The effective implementation of peer support requires a conscious decision by organisations working with people with impaired mobility to place young people at the centre of their activities and provide them space in which to work in the same organisations.

Appendices

Table 4. The numbers of young people with impaired mobility by region in the 1987 and 1997 national birth cohorts.

Region	Cohort 87 (n)	Cohort 97 (n)
Åland	less than 10	less than 10
South Karelia	17	19
Southern Ostrobothnia	35	35
South Savo	24	27
Kainuu	22	12
Tavastia Proper	21	34
Central Ostrobothnia	14	15
Central Finland	38	53
Kymenlaakso	33	20
Lapland	35	34
Päijänne Tavastia	42	27
Pirkanmaa	64	71
Ostrobothnia	28	21
North Karelia	22	16
North Ostrobothnia	73	67
North Savo	45	39
Satakunta	42	28
Uusimaa	175	158
Southwest Finland	46	77

Table 5. The percentage (%) of young people with impaired mobility in each region by cohort.

Region	Cohort 87 (%)	Cohort 97 (%)
Åland	0.4	3.2
South Karelia	1.2	1.4
Southern Ostrobothnia	1.5	1.5
South Savo	1.3	1.8
Kainuu	2.1	1.6
Tavastia Proper	1.1	1.7
Central Ostrobothnia	1.5	1.8
Central Finland	1.2	1.8
Kymenlaakso	1.7	1.1
Lapland	1.4	1.8
Päijänne Tavastia	2.2	1.3
Pirkanmaa	1.3	1.4
Ostrobothnia	1.4	1.1
North Karelia	1.1	0.9
North Ostrobothnia	1.5	1.3
North Savo	1.5	1.4

Satakunta	1.7	1.2
Uusimaa	1.2	1.0
Southwest Finland	1.0	1.6

Tabel 6. The numbers of young people self-identifying as having severely impaired mobility in the school health promotion study by region, including each school grade.

Region	Number (n)
Åland	less than 10
South Karelia	21
Southern Ostrobothnia	43
South Savo	35
Kainuu	less than 10
Tavastia Proper	38
Central Ostrobothnia	19
Central Finland	48
Kymenlaakso	29
Lapland	39
Päijänne Tavastia	50
Pirkanmaa	110
Ostrobothnia	53
North Karelia	29
North Ostrobothnia	100
North Savo	61
Satakunta	41
Uusimaa	302
Southwest Finland	106

Tabel 7. The proportion (%) of young people self-identifying as having severely impaired mobility by region, including each school grade.

Region	Comprehensive school (%)	Vocational institute (%)	Upper secondary school (%)
Åland	0.4	2.0	0.4
South Karelia	0.8	1.1	0.1
Southern Ostrobothnia	1.0	0.4	0.5
South Savo	1.2	0.7	0.4
Kainuu	0.4	0.9	0.3
Tavastia Proper	1.0	0.8	0.3
Central Ostrobothnia	0.7	1.3	0.2
Central Finland	0.8	0.7	0.4
Kymenlaakso	0.8	1.1	0.4
Lapland	1.0	0.8	0.5
Päijänne Tavastia	1.2	1.2	0.5
Pirkanmaa	1.0	1.2	0.4
Ostrobothnia	1.6	0.9	0.2

North Karelia	1.0	0.5	0.5
North Ostrobothnia	1.0	0.7	0.3
North Savo	1.2	1.0	0.4
Satakunta	0.9	0.9	0.2
Uusimaa	1.0	1.2	0.5
Southwest Finland	1.0	1.1	0.4

Tabel 9. Proportion (%) of the most common ICD-10 diagnoses by gender in the national birth cohorts.

Diagnosis group	Cohort 87			Cohort 97		
	Boys	Girls	Total	Boys	Girls	Total
M05–M14	17	28	23	18	31	24
G80–G83	27	8	22	22	11	17
Q65–Q79	16	21	19	16	17	16
Q87	6	5	5	7	8	7
Q00–Q07	6	4	5	3	4	4
M40–M43	4	3	3	1	3	2
G70–G73	4	3	3	3	2	2
Q38–Q45	3	3	3	7	3	5
M20–M25	2	3	2	2	2	2
M30–M36	1	3	2	1	2	1
Other	14	11	12	19	17	18
Total	100	100	100	100	100	100

Tabel 10. The distribution of exclusion indicators by gender among young people with impaired mobility and other young people across the national birth cohorts. Proportions as a percentage.

Indicator	Gender	National birth cohort	Persons with im-paired mobility:	Other adolescents
Placement outside the family home	Boys	1987	6.5	3.1
	Girls	1987	4.8	3.3
	Boys	1997	6.1	5.5
	Girls	1997	8.6	5.8
Psychiatric diagnosis	Boys	1987	26.9	7.3
	Girls	1987	14.0	6.2
	Boys	1997	21.9	6.6
	Girls	1997	19.0	6.0
Received social assistance for at least 6 months	Boys	1987	7.0	5.5
	Girls	1987	11.1	8.2
	Boys	1997	6.9	7.8
	Girls	1997	8.8	9.8
Purchase of a psychiatric drug:	Boys	1987	22.8	8.6
	Girls	1987	31.1	12.9
	Boys	1997	26.1	10.7
	Girls	1997	26.2	15.3
At least 3 joint applications	Boys	1987	1.1	2.3
	Girls	1987	1.4	6.3
	Boys	1997	4.2	3.4
	Girls	1997	6.5	4.7
Average grade less than 7.0	Boys	1987	27.7	29.3
	Girls	1987	14.2	12.0
	Boys	1997	21.4	22.1

	Girls	1997	10.6	7.1
No joint application	Boys	1987	20.7	2.7
	Girls	1987	17.3	2.7
	Boys	1997	13.5	1.5
	Girls	1997	6.8	1.2
No public record:	Boys	1987	0.5	1.6
	Girls	1987	0.2	0.9
	Boys	1997	3.7	0.6
	Girls	1997	1.0	0.6
Criminal conviction or 5 penal notices	Boys	1987	7.8	14.5
	Girls	1987	2.4	3.1
	Boys	1997	3.2	4.7
	Girls	1997	0.3	1.0
Teenage mother	Girls	1987	2.7	3.0
	Girls	1997	1.3	0.8

Table 11. Transitions from adolescent at-risk groups to adult at-risk groups in the 1987 national birth cohort.

		0 risk factors during adolescence			
		Boys with impaired mobility	Other boys	Girls with impaired mobility	Other girls
Number of risk factors during adult- hood	0	71	87	83	88
	1	20	11	15	11
	2	9	2	1	1
	3+	0	0	1	0
	Total	100	100	100	100
		1 (one) risk factor during adolescence			
		Boys with impaired mobility	Other boys	Girls with impaired mobility	Other girls
Number of risk factors during adult- hood	0	45	74	50	76
	1	39	21	27	18
	2	11	4	16	4
	3+	5	1	6	1
	Total	100	100	100	100
		2 risk factors during adolescence			
		Boys with impaired mobility	Other boys	Girls with impaired mobility	Other girls
Number of risk factors during adult- hood	0	25	53	30	58
	1	27	33	25	26
	2	26	10	16	11
	3+	21	4	30	5
	Total	100	100	100	100
		3 risk factors during adolescence			
		Boys with impaired mobility	Other boys	Girls with impaired mobility	Other girls
Number of risk factors during adult- hood	0	17	25	18	35
	1	26	34	26	30
	2	43	24	37	22
	3+	15	18	18	13
	Total	100	100	100	100

References

- Nurmi-Koikkalainen, P., Ahola, S., Gissler, M., Halme, N., Koskinen, S., Luoma, M., Malmivaara, A., Muuri, A., Sainio, A., Sääksjärvi, K., Väyrynen, R. (2017). Tietoa ja tietotarpeita vammaisuudesta: Analyysia THL:n tietotuotannosta. Available at: <http://urn.fi/URN:ISBN:978-952-302-946-0>
- Ristikari, T., Törmäkangas, L., Lappi, A., Haapakorva, P., Kiilakoski, T., Merikukka, M., Pekkarinen, E., Hautakoski, A., & Gissler, M. (2016). [Suomi nuorten kasvuypäristönä – 25 vuoden seuranta vuonna 1987 Suomessa syntyneistä nuorista aikuisista.](#)
- Spitzer R.L., Kroenke K., Williams J.B., Löwe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. Arch Intern Med. (2006) 166:1092–7.
- Finnish Institute for Health and Welfare (2019). Available at: <https://thl.fi/fi/tutkimus-ja-kehittaminen/tutkimukset-ja-hankkeet/kouluterveyskysely> [retrieved 4.4.2019].
- UNICEF (2019). Available at: <https://www.unicef.fi/lapsen-oikeudet/sopimus-kokonaisuudessaan/> [Viitattu 26.4.2019].
- Yhdistyneiden kansakuntien Yleissopimus vammaisten henkilöiden oikeuksista, UNCPRD. Available at: https://www.finlex.fi/fi/sopimukset/sopsteksti/2016/20160027/20160027_2 [Viitattu 7.5.2019].