

Uptake of Mental Health Benefits in Women Before and During the Perinatal Period



An Analysis of Austrian Health Insurance Data



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List of abbreviations

Bgld	Burgenland
GP	General practitioner
IQR	Interquartile range
KH	Krankenhaus
NÖ	Niederösterreich
ÖGK.....	Österreichische Gesundheitskasse
OÖ	Oberösterreich
PMI.....	Perinatal mental illness
Stmk	Steiermark
Szb	Salzburg
Vbg.....	Vorarlberg

Executive Summary

Background

report examines uptake of mental health services in Austria during perinatal period

One in five mothers and one in ten fathers experience mental health problems during pregnancy and the first year of their child's life. However, despite the prevalence of problems during this so-called perinatal period, gaps between care needs and actual support-seeking seem to remain. A previous Austrian report demonstrated that although some services are available, the capacity for specialist services is low, with significant regional variations and complete absence of offers in some regions. Furthermore, the actual uptake of available options in Austria is currently unknown. Therefore, the aim of this report was to provide an overview of the use of different mental health services and additional benefits before and during the perinatal period in Austria.

Methods

five benefits observed: hospital services, community-based psychiatrist, psychotherapy, psychotropic medication, sick leave

In this report, mental illness includes all diagnoses listed in Chapter F (mental and behavioural disorders) of the International Classification of Diseases (ICD-10-F). The study population was women insured with the ÖGK who gave birth in 2017 or 2018. There was no data on fathers. We examined claims for a total of five different ÖGK-funded mental health benefits: hospital, community-based psychiatric and psychotherapy services, as well as prescribed psychotropic medication, and sick leaves with an ICD-10-F diagnosis. The observation period ranged from one year before pregnancy to the perinatal period. The total period as well as differences between one year before pregnancy, during pregnancy and one year after giving birth were examined.

Results

one in four women claimed benefits, psychotherapy services most often

A total of 131,025 ÖGK-insured women gave birth in 2017 or 2018, representing around 80% of all births in Austria during that time. One in four women during the entire observation period and one in five women during the perinatal period claimed benefits. For most benefits, claim rates were highest before pregnancy, decreased during pregnancy and rose again after birth, although not to the same level as before pregnancy. Most women claimed only one benefit and only during one of the three periods. Benefits were claimed more frequently by the youngest (≤ 20 years) and the oldest (≥ 41 years) women.

hospital: 2%, psychiatrists: 9%, psychotherapy: 17%, medication: 7%, sick leave: 5%

Hospital services were used by 2%, with the most common diagnoses being for stress related (F4) and affective (F3) disorders. Nine percent of the observed population used community-based psychiatrist benefits, with a median of seven visits per woman. Psychotherapy benefits were the most used service (17%), with a median of (only) two visits per woman. Psychotropic medication was prescribed to 7%, most frequently antidepressants. Finally, 5% of women were on sick leave, with the most common diagnoses again being stress related (F4) and affective (F3) disorders.

35% of women claimed benefits in Tyrol

In Tyrol, 35% of women claimed some kind of benefit, with more claims observed in Schwaz and Landeck. In particular, psychotherapy and community-based psychiatrist claims were higher than in Austria as a whole.

Discussion

Despite gaps in the availability of perinatal mental health specialist services in Austria, we observed a substantial utilisation of various mental health services and benefits, which roughly corresponds to the international prevalence figures. The highest proportion of claims were observed in Tyrol. Due to gaps in perinatal specialists, it is not known whether the support received follows international perinatal mental health care standards and evidence-based guidelines. Further, it is unclear whether the number of lower claims during pregnancy was due to its shorter time period or because of other reasons, or why there was a higher number of claims from older women. In addition, since most women only claimed benefits during one of the observed periods, continuity of care should be examined.

Some limitations are that our data are incomplete, and we do not have data from other insurance providers nor from all available mental health services in Austria. It is therefore likely that the actual number of claims is higher than reported. Further, since the data presented in this report was primarily collected for administrative purposes, its' clinical validity is limited.

Conclusion

This report examined the use of various mental health benefits of women one year before and during the perinatal period. Despite gaps in care, as well as psychological barriers to seek help during this time, and although many services are not included in this report, service uptake rates correspond to international prevalence figures. Uptake can therefore be rated as high. Since there is currently only little specialist perinatal mental health care available, this report highlights the need for training of professionals and the expansion of an integrated perinatal mental health infrastructure. Furthermore, the current capacity of services may not be sufficient when the planned measure to screen women for mental health problems during pregnancy and after childbirth (“Eltern-Kind-Pass”) is introduced.

substantial utilisation of services despite gaps in specialist care; quality of treatment unclear

**limitations:
data incomplete,
not all available
services included**

**need for specialist
training & expansion
of infrastructure**

Zusammenfassung

Hintergrund

psychische Belastung der Eltern während Peripartalperiode besonders häufig	Während der Schwangerschaft bis zum ersten Jahr nach der Geburt treten im Schnitt bei jeder 5. Mutter und jedem 10. Vater psychische Erkrankungen auf. Depressionen und Angststörungen sind die häufigsten Diagnosen. Eine schnelle und effektive Gesundheitsversorgung in dieser so genannten Peripartalperiode ist besonders wichtig, da psychische Belastungen hier nicht nur die Gesundheit von Mutter und Vater, sondern auch die Gesundheit und Entwicklung des Neugeborenen langfristig beeinträchtigen können. Zusätzlich haben wissenschaftliche Kostenberechnungen gezeigt, dass die langfristigen Folgen mit hohen volkswirtschaftlichen Kosten einhergehen.
Lücke zwischen Bedarf & Inanspruchnahme	Laut internationalen Studien gibt es jedoch eine Lücke zwischen Bedarf und tatsächlicher Inanspruchnahme verschiedener von Leistungen: ein Drittel bis zur Hälfte aller Mütter, die während der Peripartalperiode mit einer psychischen Erkrankung diagnostiziert werden, nehmen keine Behandlung in Anspruch.
Versorgungslücken in Österreich in der Peripartalversorgung	In einem vorherigen Bericht wurde die Peripartalversorgung in Österreich untersucht. Das Ergebnis: Es gibt zwar einige Behandlungs- und Unterstützungsangebote für diese Zeit, ihre Verfügbarkeit variiert jedoch stark zwischen Bundesländern. Das führt vor allem in der Spezialversorgung (z.B. ambulante peripartal-psychiatrische Angebote) zu regionalen Versorgungslücken. Zudem mangelt es an spezifisch ausgebildeten Fachkräften, bzw. Ausbildungsmöglichkeiten für Fachkräfte, die mit psychischen Erkrankungen in der Peripartalphase zu tun haben. Die derzeitige Inanspruchnahme von Leistungen, die psychische Gesundheit betreffend, ist für Österreich noch unbekannt.
tatsächliche Inanspruchnahme unbekannt	
Ziel des Berichts: Inanspruchnahmen von Leistungen in Österreich aufzeigen	Dieser Bericht ist Teil des Projektes „Psychische Gesundheit rund um die Geburt“, das die Verbesserung der Versorgungssituation in Tirol (z.B. Früherkennung, Behandlung) unter Einbindung von Stakeholdern zum Ziel hat. Wir geben in diesem Bericht eine Übersicht zur Inanspruchnahme von Kassen-Leistungen der Österreichischen Gesundheitskasse (ÖGK). Diese beziehen sich auf psychische Erkrankungen der Mütter für die Zeit ein Jahr vor und während der Peripartalperiode. Zu Vätern gibt es diese Daten nicht. Das Ziel ist ein besseres Verständnis der Ist-Situation.
Methoden	
Begriff psychische Erkrankungen → ICD-10-F Diagnosen	Der Begriff psychische Erkrankungen umfasst in diesem Bericht alle im internationalen System zur Klassifikation von medizinischen Diagnosen im Kapitel F (psychische und Verhaltensstörungen) erfassten Diagnosen (ICD-10-F).
Studienpopulation: ÖGK-versicherte Frauen mit Geburt 2017/2018	Die Datenbasis bildeten pseudonymisierte Daten der ÖGK, die im Zuge dieses Berichts statistisch beschreibend (deskriptiv) analysiert wurden. Betrachtet wurden Frauen, die 2017 oder 2018 ein Kind geboren haben und mit dem „Versicherungsfall Mutterschaft“ bei der ÖGK gemeldet waren.

Die Inanspruchnahme von fünf von der ÖGK (mit-)finanzierten Leistungen wurden anhand der folgenden Daten untersucht:

- Stationäre und tagesklinische Krankenhausaufenthalte mit einer psychiatrischen Entlassungsdiagnose (Haupt- oder Nebendiagnose) laut ICD-10-F
- Konsultationen bei niedergelassenen Psychiater*innen (Vertrags- oder Wahlärzt*innen, sofern eine partielle Refundierung erfolgte)
- Psychotherapie, die patient*innenbezogen abgerechnet wurde
- Verschreibung von Psychopharmaka (Medikamente mit ATC-codes N05 und N06)
- Krankenstände, die mit einer ICD-10-F Diagnose dokumentiert wurden

Wenn eine Frau in 2017 oder 2018 mehrere Kinder geboren hat, wurde die erste Geburt als das Referenzdatum genommen.

Betrachtet wurde der Zeitraum von einem Jahr vor der Schwangerschaft und die Peripartalperiode (Schwangerschaft und bis zu einem Jahr nach der Geburt). Von Interesse waren einerseits Art und Anzahl an Inanspruchnahmen in der gesamt betrachteten Zeit, wie auch in den einzelnen Perioden (ab einem Jahr vor der Schwangerschaft, während der Schwangerschaft, bis zu einem Jahr nach der Schwangerschaft). Zusätzlich wurden die Inanspruchnahmen in den verschiedenen Bundesländern, sowie in den politischen Bezirken Tirols auf regionale Unterschiede hin untersucht.

Ergebnisse

Dieser Bericht zeigt auf, dass 131.025 ÖGK-versicherte Frauen zwischen 2017 und 2018 mindestens ein Kind geboren haben, was ca. 80 % aller Frauen, die in Österreich in dieser Zeit ein Kind geboren haben, entspricht. Zwei Drittel waren zwischen 26 und 35 Jahre alt. Davon nahm in etwa jede vierte Frau im gesamten Beobachtungszeitraum mindestens eine der fünf Leistungen in Anspruch, was jeder fünften Frau, während der Peripartalperiode entspricht. Der Anteil an Inanspruchnahmen war in Wien und Tirol am höchsten. Mehr als die Hälfte nahm nur eine Leistung in Anspruch, am häufigsten Psychotherapie, gefolgt von Psychopharmaka.

Inanspruchnahmen waren vor der Schwangerschaft am höchsten, sanken währenddessen ab und waren nach der Geburt nicht mehr so hoch wie in der ersten Periode. Das gilt für alle Leistungen, außer für Krankenhausaufenthalte. Um die 70 % nahmen nur in einem der drei Zeiträume eine Leistung in Anspruch. Über alle Leistungen hinweg war der Anteil an Inanspruchnahmen bei den jüngsten (≤ 20 Jahre alt) und ältesten (≥ 41 Jahre alt) Frauen am höchsten.

Krankenhaus

3.200 Frauen (2%) waren mit einer Haupt-, oder Neben-Diagnose nach ICD-10-F im Krankenhaus aufgenommen. Während der Peripartalperiode waren es ebenso zwei Prozent. Die meisten Aufnahmen waren stationär. Bei rund 40% bzw. 1.300 Frauen war eine psychische Erkrankung der primäre Aufnahmegrund, es lag also eine ICD-10-F Hauptdiagnose vor. 13% dieser Frauen nahmen keine weitere Leistung in Anspruch. Bezogen auf die Geburtenverteilung hatten Oberösterreich und Steiermark einen vergleichsweise höheren Anteil an Inanspruchnahmen. Demgegenüber war sie in Wien niedriger als die Geburtenverteilung erwarten ließe.

Betrachtung von 5 ÖGK-Leistungen:

ICD-10-F Krankenhausaufenthalte

**niedergelassene Psychiater*innen
Psychotherapie
Psychopharmaka**

ICD-10-F Krankenstände

erste Geburt 2017/2018 als Referenz

1 Jahr vor und Peripartalperiode betrachtet

jede 4. Frau nahm mind. eine Leistung in Anspruch, jede 5. Frau in der Peripartalperiode

meist nur eine Leistung, v.a. von jüngsten & ältesten Frauen beansprucht

~3.200 (2%) mit ICD-10-F im Krankenhaus aufgenommen, mehr Inanspruchnahmen in OÖ & Stmk.

F4 & F3 am häufigsten diagnostiziert	Die am häufigsten erteilten Hauptdiagnosen waren Neurotische, Belastungs- und Somatoforme Störungen (F4), gefolgt von Affektiven Störungen (F3). Der Großteil der Frauen wurde nur einmal aufgenommen, wobei die Hälfte nach spätestens fünf Tagen entlassen wurde. Am häufigsten war die Aufnahme in psychiatrische oder gynäkologische Abteilungen.
~11.800 (9%) konsultierten Psychiater*innen im Mittel 7-mal	<p><i>Niedergelassene Psychiater*innen</i></p> <p>Rund 11.800 Frauen konsultierten mindestens einmal eine(n) Psychiater*in im gesamt betrachteten Zeitraum, was ca. 9% unserer Population entspricht. In der Peripartalperiode waren es 6%. Oberösterreich hatte einen niedrigeren Anteil an Leistungsansprüchen in Vergleich zu ihrem Geburtenanteil. Frauen besuchten eine/n Psychiater*in im Mittel sieben Mal, wobei der Großteil ausschließlich eine/n ÖGK-Vertragsärzt*in konsultierte. Wahlärzt*innen wurden etwas häufiger von Frauen über 30 aufgesucht.</p>
22.775 (17%) beanspruchten Psychotherapie, große Unterschiede zw. Bundesländern	<p><i>Psychotherapie</i></p> <p>Psychotherapie wurde mit insgesamt 22.775 Frauen (17%) am häufigsten in Anspruch genommen. In der Peripartalperiode waren es 12%. Der Anteil differierte stark zwischen den Bundesländern. Tirol und Wien hatten den höchsten Anteil an Leistungsansprüchen im Vergleich zum Geburtenanteil, während in Oberösterreich, Salzburg, wie auch in Vorarlberg der Anteil niedriger war. Frauen besuchten eine/n Psychotherapeut*in im Mittel nur zweimal, vor allem kassenfinanzierte Therapeut*innen.</p>
~9.200 (7%) wurden Psychopharmaka verschrieben, meist Antidepressiva	<p><i>Medikation</i></p> <p>Ungefähr 9.200 Frauen wurden Psychopharmaka verschrieben, was 7% unserer Population ausmacht und in der Peripartalperiode 5% betrug. Der Anteil war in allen Bundesländern ähnlich. Antidepressiva wurden am häufigsten verschrieben. Im Mittel wurden die Medikamente drei Mal verschrieben, allerdings mit großen Unterschieden zwischen verschiedenen Psychopharmaka.</p>
~6.000 (5%) im Krankenstand mit ICD-10-F Diagnose; meist F4 oder F3	<p><i>Krankenstand</i></p> <p>Bei knapp 6.000 Frauen, 5% der betrachteten Population und 2% in der Peripartalperiode, wurde ein Krankenstand mit einer ICD-10-F Diagnose dokumentiert. Verglichen zur Geburtenverteilung wurden proportional weniger Leistungen in Wien beansprucht, während es in Oberösterreich proportional mehr waren. Der Großteil nahm nur einen Krankenstand für im Mittel 11 Tage in Anspruch. Die häufigsten Diagnosen waren wie bei den Krankenhausleistungen Neurotische, Belastungs- und Somatoforme Störungen (F4; 56%), gefolgt von Affektiven Störungen (F3; 37%).</p>
in Tirol: 35% Inanspruchnahmen; mehr in Schwaz & Landeck	<p><i>Tirol</i></p> <p>In Tirol nahmen etwa 35% der Frauen mindestens eine Leistung in Anspruch, wobei es 25% während der Peripartalperiode waren. Regionale Unterschiede waren vor allem durch Inanspruchnahmen von Psychotherapieleistungen bedingt. Schwaz und Landeck hatten einen proportional zu ihrem Geburtenanteil höheren Anteil an Leistungsansprüchen.</p>
v.a. Psychotherapie & Psychiater*innenkon- sultationen höher als in Gesamtösterreich	Die Inanspruchnahme von Krankenhausleistungen, Psychopharmaka und Krankenständen in Tirol war vergleichbar mit Gesamtösterreich. Die Konsultation von Psychiater*innen, sowie die Nutzung von Psychotherapieleistungen war dagegen höher. Diese variierten jedoch stark zwischen den Bezirken: 8-18% bei Psychiater*innen und 23-45% bei der Psychotherapie.

Diskussion

Trotz Versorgungslücken in Österreich und Analyse nur eines Teils der vorhandenen Angebote entsprachen die Zahlen zur Inanspruchnahme von Leistungen während der Peripartalperiode internationalen Daten zur Häufigkeit (Prävalenzahlen) von peripartal psychischen Erkrankungen. Jedoch ist fraglich, ob die erhaltene Versorgung internationalen Leitlinien bzw. Standards für peripartale psychiatrische Versorgung entspricht. Das zeigt sich besonders für Spitalaufnahmen: Obwohl Frauen in allen Bundesländern aufgenommen wurden, gibt es derzeit nur in Wien, Steiermark und Oberösterreich speziell ausgestattete Mutter-Kind-Betten. Das bedeutet, dass viele Frauen ohne ihr Baby aufgenommen werden. Wesentliche Elemente einer peripartal-psychiatrischen Spezialbehandlung, wie etwa der Fokus auf Bindungsqualität und elterliche Kompetenzen, können daher nicht stattfinden.

**trotz Versorgungslücken
hohe Inanspruchnahmen;
Qualität der Versorgung
jedoch unbekannt**

Unklar ist, ob die österreichweit geringere Inanspruchnahme an Leistungen während der Schwangerschaft durch die kürzere betrachtete Periode im Vergleich zu den beiden anderen Perioden bedingt ist (9 Monate während Schwangerschaft vs. jeweils 1 Jahr vor und nach der Schwangerschaft). Auch ist nicht eindeutig, weshalb die Inanspruchnahme für manche Leistungen nach der Geburt nicht den gleichen Wert wie vor der Geburt erreicht. Zusätzlich haben die meisten Frauen nur eine Leistung in nur einer Periode in Anspruch genommen, weshalb die Versorgungskontinuität geprüft werden sollte.

**unklar, weshalb
Inanspruchnahmen in
Perioden verschieden**

Warum die ältesten und jüngsten Frauen diverse Leistungen häufiger beanspruchen, ist bei jüngeren ansatzweise durch deren in der Literatur beschriebenes höheres Erkrankungsrisiko erklärbar. Für die Gruppe der älteren gibt es jedoch noch keine abschließende Erklärungen.

**hohe Inanspruchnahmen
bei älteren Frauen
überraschend**

Ebenfalls überraschend ist, dass trotz berichteter Barrieren, psychiatrische Dienste in Anspruch zu nehmen, im Schnitt jede zehnte Frau unserer Population eine/n Psychiater*in kontaktierte, oder dass viele Frauen Psychopharmaka, ohne jegliche andere Leistung, verschrieben bekommen haben.

**Inanspruchnahmen von
Psychiater*innen trotz
Barrieren hoch**

Einige Limitationen dieses Berichts sind, dass regionale Unterschiede auf Länder- und Bezirksebene in der Inanspruchnahme der Psychotherapie teilweise durch eine unvollständige Datenerfassung bedingt sind, und dass die Unterschiede in den Krankenhausdaten sich eventuell auf Codierungsunterschiede zurückführen lassen. Auch können nachfrage- oder angebotsseitige Faktoren (z.B. Anzahl vorhandener Kassen-Psychiater*innen oder Wissen über vorhandene Angebote bei den betroffenen Frauen) möglicherweise regionale Unterschiede bedingen. Die höheren Inanspruchnahmen von Leistungen in Tirol waren vor allem durch die Psychotherapiedaten bedingt, wobei es sich hier wahrscheinlich ebenfalls um einen Datenartefakt aufgrund von unvollständiger Datenerfassung handelt.

**Limitationen:
unvollständige Daten &
Kodierungsunterschiede**

Außerdem ist zu beachten, dass viele Leistungen, die bei psychischen Belastungen in Österreich zur Verfügung stehen, in unseren Daten nicht enthalten waren. Zusätzlich waren Daten zu Psychotherapieleistungen, zu Verschreibung von Psychopharmaka, sowie zu Krankenständen unvollständig und wir hatten keine Daten von anderen Sozialversicherungsträgern. Es ist also davon auszugehen, dass unsere Ergebnisse die tatsächlichen Inanspruchnahmen unterschätzen. Zudem ist die Inanspruchnahme von Leistungen nicht mit der tatsächlichen Häufigkeit psychischer Erkrankungen in der Population gleichzusetzen. Die hier untersuchten Daten sind außerdem für administrative und nicht für Forschungszwecke erhoben wurden, sodass die klinische Validität limitiert ist.

**viele Leistungen in
unseren Daten nicht
enthalten → tatsächliche
Inanspruchnahme
wahrscheinlich
unterschätzt**

Schlussfolgerung

hohe Inanspruchnahmen zeigen Notwendigkeit in Ausbildung von Fachkräften & Ausbau der Infrastruktur und Beachtung einer integrierten Versorgung

Dieser Bericht befasste sich mit der Inanspruchnahme von fünf verschiedenen ÖGK-Leistungen, die auf psychische Erkrankungen ein Jahr vor und während der Peripartalperiode hinweisen. Trotz Barrieren (z.B. Angebotslücken, psychologische Hürden, Hilfe in Anspruch zu nehmen), wurden Leistungen in der Größenordnung internationaler Prävalenzen beansprucht. Insbesondere in Tirol war die Inanspruchnahme von Psychotherapieleistungen hoch. Da es zurzeit nur sehr wenig Spezialversorgung für die Peripartalperiode gibt, ist Investition in fachspezifische Qualifikation (z.B. Ausbildung in Peripartalpsychiatrie für Psychiater*innen oder Hebammen), sowie der Ausbau der Infrastruktur (z.B. Mutter-Kind Betten oder Spezialambulanzen) nötig. Da Inanspruchnahmen über verschiedene Settings hinweg erfolgten, sollte beim Ausbau von Leistungen eine integrierte Versorgung, d.h. eine kontinuierliche und strukturierte Zusammenarbeit verschiedener Berufsgruppen über den ganzen Behandlungs- und Betreuungsprozess, ein wichtiges Thema sein.

derzeitige Kapazitäten werden bei Einführung des Eltern-Kind-Passes nicht mehr genügen

Ebenfalls ist zu erwarten, dass die voraussichtliche Einführung eines Screenings auf psychische Erkrankungen von Schwangeren und Müttern im geplanten nationalen "Eltern-Kind-Pass" mit mehr Bedarf an Angeboten einhergehen wird. Da die Inanspruchnahmen bereits hoch sind, ist davon auszugehen, dass die derzeitig vorhandenen Kapazitäten nicht genügen werden. Internationale Evidenz, sowie die Ergebnisse in diesem Bericht, bestätigen die Notwendigkeit der politischen Priorisierung dieses Themas.

1 Introduction

Mental health problems of parents are among the most common morbidities during the perinatal period (pregnancy and the first year of a child's life), with perinatal mental illness (PMI) affecting approximately 1 in 5 mothers [1-9] and more than 1 in 10 fathers [10-12]. It can also concern both parents concurrently, with, for example, up to 3 % of couples being affected by perinatal depression [13]. The most common types of PMI are depression and anxiety disorders, with a prevalence of approximately 15 % among mothers. Serious mental health problems requiring hospital admission are less common, with around 2 to 3 women per 1,000 deliveries being admitted to mother-baby units based on British and Australian data [14].

Maternal mental health problems that occur in the perinatal period are likely to be similar in nature, course, and relapse risk to those at other times in a woman's life. An exception is postpartum psychosis (i.e., the sudden onset of psychotic symptoms after the birth of the child), which is unique to the postnatal period. However, a main difference is a more urgent need for rapid and effective care provision, considering the impact of perinatal mental health problems on the mother and her newborn [14]. There is strong evidence that PMI contributes significantly to maternal mortality and adverse neonatal outcomes. It impacts infant development and health and can also affect the wider family. The risk for adverse child outcomes can persist into late adolescence [15-18]. Besides the impact on the individuals' health and quality of life, PMI also has considerable economic consequences. A cost of illness study from the U.K. showed that perinatal depression, anxiety, and psychosis carry a total long-term cost to society of about £8.1 billion for each one-year cohort of births, which equals almost 90,000€ per affected mother. Nearly three-quarters (72 %) of these costs relate to adverse impacts on the child [19].

Considerable efforts have been made in some countries to tackle PMI by developing policies, implementing prevention and screening approaches, and improving and/or expanding evidence-informed support structures and pathways of care [20]. However, gaps between care needs and support-seeking or using services seem to remain. Some studies indicate that only approximately a third of women diagnosed with a mental disorder during pregnancy also seek treatment during pregnancy or postpartum [21, 22]. In another, U.S.A.-based study, women were screened for mental disorders during pregnancy. While 14 % of the screened women did not receive any diagnosis, 36 % received a diagnosis and attended at least one mental health treatment and 50 % got diagnosed but did not attend any treatment [23].

A recent Austrian report demonstrated that although treatment and support services are available, the capacity for specialist services is low, with significant regional variations when considering international recommendations, especially regarding hospital-based treatment facilities such as mother-baby units in case of severe mental health problems [24]. In addition, there are no appropriate specialised training opportunities available for psychiatrists in Austria. Moreover, specialised health care professionals, as they exist in other countries (e.g., perinatal mental health midwives, maternal and child health nurses), are lacking. In Austria, little is known about the overall uptake of mental health care services and additional benefits (e.g., drugs) amongst parents during pregnancy and their child's first year of life.

psychische Erkrankungen während Schwangerschaft und 1 Jahr nach Geburt (Peripartalperiode) betreffen jede 5. Mutter und jeden 10. Vater

negative Auswirkungen auf Entwicklung und Gesundheit der Kinder und hohe volkswirtschaftliche Kosten

in anderen Ländern nehmen viele Eltern mit manifester Diagnose keine Behandlung in Anspruch

österreichischer Bericht zeigt Versorgungslücken in Peripartalpsychiatrie

tatsächliche Inanspruchnahme von Leistungen unbekannt

**Bericht ist Teil des Projekts
„Psychische Gesundheit
rund um die Geburt“**

**Projektziel: Verbesserung
der Versorgungssituation
in Tirol unter Einbindung
von Stakeholdern**

This report addresses this knowledge gap as part of a broader research project entitled ‘Healthy Minds – supporting new parents and infants’. This 5-year project is funded by the Austrian Science Fund (“Fonds zur Förderung der wissenschaftlichen Forschung”/FWF; grant number: CM600 Paul). It is hosted by the Medical University Innsbruck, with research partners at the Leopold Frances University Innsbruck, the Austrian Institute of Health Technology Assessment, and the Ludwig Boltzmann Institute for Rehabilitation Research. The broader objectives of this research project are to co-develop, implement, and evaluate an intervention or prevention approach to reduce PMI in Tyrol. The project works with stakeholders and community partners to co-develop evidence-informed practice approaches and determine the most appropriate study design to evaluate these, including implementation processes. Central to this work is the involvement of people with lived experience. This report is part of the scoping activities that we undertake in the project’s first phase to inform the subsequent steps of co-designing practice approaches to improve the situation in Tyrol.

2 Aim and research questions

This report aims to gain an overview of the uptake of mental health benefits among mothers shortly before and during pregnancy and up until their children's first birthday in Austria. We focus on benefits funded by the Austrian health insurance (ÖGK), which covers about 80% of the total Austrian insured population [25].

We address the following research questions:

- Which and how many health insurance (co)-funded mental health benefits were used by ÖGK-insured mothers who gave birth in 2017 and 2018, in the perinatal period (pregnancy and 12 months after birth) and 12 months before?
- What are the demographic characteristics of benefit uptake and the characteristics of uptake in the period 'before pregnancy', 'during pregnancy' and '12 months after birth'?
- What are the regional patterns in service use across the nine Austrian states and within Tyrol specifically?

Berichtsziel: Übersicht zu Inanspruchnahme von Kassen-Leistungen (ÖGK) mit Bezug zu psychischer Erkrankung vor und während der Peripartalperiode

3 Forschungsfragen

3 Materials and methods

3.1 Definition of terms

Mental illness

Begriff psychische Erkrankung in diesem Bericht umfasst alle ICD-10-F Diagnosen

The term ‘mental illness’ in this report refers to all mental, behavioural, and neurodevelopmental disorders listed in the ICD-10 classification in the category ‘F’, which are:

- F00-F09: mental disorders due to known physiological conditions;
- F10-F19: mental and behavioural disorders due to psychoactive substance use;
- F20-F29: schizophrenia, schizotypal, delusional, and other non-mood psychotic disorders;
- F30-F39: mood [affective] disorders;
- F40-F49: anxiety, dissociative, stress-related, somatoform, and other nonpsychotic mental disorders;
- F50-F59: behavioural syndromes associated with physiological disturbances and physical factors;
- F60-F69: disorders of adult personality and behaviour;
- F70-F79: intellectual disabilities;
- F80-F89: pervasive and specific developmental disorders;
- F90-F98: behavioural and emotional disorders with onset usually occurring in childhood and adolescence;
- F99: unspecified mental disorder.

Types of insurance-funded mental health benefits

Definition der Leistungen:

The data from the ÖGK cover a range of benefits that may be utilised in case of a mental health problem. We define the different types of benefits in the following way:

Gesundheitsdienstleistungen für psychische Erkrankungen (Sachleistungen)

- **Mental health service:** this is used as a summary term to describe all mental health *services* (in-kind services) that a person insured by the ÖGK can use. Services included are: (1) hospital services (inpatient and day-care¹), (2) services provided by a community-based psychiatrist and (3) psychotherapy services. The term ‘mental health service’ does not include products such as medication or cash benefits.

stationäre und tagesklinische Krankenhausaufenthalte mit ICD-10-F Entlassungsdiagnose (Haupt- oder Nebendiagnose)

- **Hospital services:** this includes hospital inpatient and day-care services (excluding hospital outpatient services) that have been documented with an ICD-10-F diagnosis (mental, behavioural, and neurodevelopmental disorders) at discharge, regardless of hospital ward (psychiatric and non-psychiatric), either as a main or a secondary diagnosis.

A main diagnosis indicates the primary reason for the inpatient stay but could also denote the most severe symptom or health problem. Secondary diagnoses describe all relevant

¹ Treatment in hospital setting without overnight-stay for a defined time period;

comorbidities that were either present together with the main diagnosis throughout the stay or developed during the stay and influenced the patient's treatment. While a patient can only receive one main diagnosis, there is no limit to the number of possible secondary diagnoses [26].

- Community-based psychiatrist services: these include services provided by an independently practising psychiatrist (including different professional subgroups such as 'neurology and psychiatry' and 'child and adolescent psychiatrist'). Services that are fully covered by the ÖGK (provided by doctors who have a contract with the ÖGK ['Vertragsärzt*in] or by an ÖGK service) and those for which the ÖGK paid a partial refund ('Wahlärzt*in') are included.
- Psychotherapy services: this includes psychotherapy provided by professionals who can claim a patient-based fee for a psychotherapy service from the ÖGK² (fully ÖGK-funded therapies and those for which the ÖGK paid a partial refund are included). All types of therapies accepted by the ÖGK are included, regardless of the type of psychotherapy-school. Psychotherapy services that were utilised via other – non-patient-based – funding schemes (e.g., lump sums) are not covered by the data. The proportion of psychotherapies funded via such schemes differs between regions. For example, Salzburg has a specific funding scheme resulting in a higher underrepresentation of psychotherapy in our data than in other states.

Psychological diagnostic, another health insurance-funded mental health service, was excluded because a previous analysis of claims data demonstrated that this is mainly used by children [27].

- Medication: this includes all types of drugs for treating mental illness within the ATC-codes N05 and N06, funded by the ÖGK. Specifically, the following classes of drugs are included:
 - N05A: antipsychotic drugs,
 - N05B: anxiolytics,
 - N05C: hypnotics and sedatives,
 - N06A: antidepressants,
 - N06B: psychostimulants, agents used for ADHD and nootropics,
 - N06DA: anti-cholinesterase drugs,
 - N06DX: other anti-dementia drugs.

Drugs besides ATC-codes N05 and N06 (several mood stabilizers such as antikonvulsants³), those which have been entirely privately funded

**Kontakte bei
niedergelassenen
Psychiater*innen
(Vertrags- oder
Wahlärzt*innen,
sofern eine partielle
Refundierung erfolgte)**

**Psychotherapie, die
patient*innenbezogen
abgerechnet wurde**

**psychologische
Diagnostik nicht
inkludiert**

**Psychopharmaka mit
ATC-codes N05 und N06**

² Original German definition: Es handelt sich um positionsbezogene Auswertungen, das heißt alle psychotherapeutischen Leistungen, die in den Systemen patient*innenbezogen zur Abrechnung vorliegen, wurden ausgewertet.

Leistungen, die nicht patient*innenbezogen erbracht werden (z.B. solche, die über Pauschalzahlungen abgegolten werden), sind in den Daten nicht enthalten;

³ These drugs are also used for treating other types of illnesses such as epileptic seizures. The drug prescription data do not allow to separate persons with a mental illness from persons with other types of illness receiving those drugs. Therefore, these drugs are not included in our data.

**Arbeitsunfähigkeit
mit dokumentierter
ICD-10-F Diagnose**

(with prices below the prescription fee), or drugs provided/dispensed directly by the hospital (from the hospital pharmacy) to the patient are not included.

- Sick leave: this includes absence from work with legally regulated financial support based on a documented ICD-10-F diagnosis (see ‘mental illness’). Documentation of sick leave is linked to a woman’s active employment. Illnesses during maternity protection (‘Mutterschutz’) or during maternity leave are not registered in the sick leave database.
- Benefits: summary term used to describe all above-mentioned cash or in-kind benefits.

Study population

**Studienpopulation:
ÖGK-versicherte Frauen mit
Geburten 2017 oder 2018**

Mentions of ‘the overall population’, ‘ÖGK-insured women’, ‘observed population’, etc., always refer to our study population of ÖGK-insured women who gave birth in 2017 and 2018. Mentions do not refer to:

- the total Austrian population,
- the entire ÖGK-insured population (men and women), nor to
- all ÖGK-insured women, including those who did not give birth in 2017 and 2018,

unless otherwise stated.

3.2 Data source

**retrospektive Analyse
pseudonymisierter
ÖGK-Daten**

We used a pseudonymised dataset of pre-existing data provided by the ÖGK (Versorgungsmanagement 3/Gesundheitssystem & Qualität), which we retrospectively analysed.

**Frauen mit
„Versicherungsfall
Mutterschaft“
2017 – 2018 und deren
Leistungsanspruchnahme
1 J. vor und während
Peripartalperiode**

Data cover ÖGK-insured women who gave birth in 2017 and 2018 and have been documented as a maternity insurance case within the ÖGK (‘Versicherungsfall Mutterschaft’). The years 2017 and 2018 were selected for birth cohorts because, in later cohorts, service use would likely be confounded by the Covid-19 pandemic, where access to services was temporarily severely limited. Furthermore, data cover the use of benefits 12 months before and during pregnancy and up to one year after childbirth. The reason for selecting a 1-year pre-pregnancy period is to have a standardized timespan as a comparator to the perinatal period.

**Abrechnungs-
und Arbeitsunfähig-
keitsdaten**

The dataset was constructed from population-wide hospital, community-based (niedergelassener Bereich) and drug prescription administrative claims data and sick leave data covering the following range of insurance benefits:

- mental health services:
 - hospital inpatient and day-care admissions with either a main or secondary ICD-10-F diagnosis (mental, behavioural, and neurodevelopmental disorders) registered at discharge;
 - contacts with community-based medical specialists in the mental health field (psychiatrists);
 - (parts of available) psychotherapy services;
- prescribed medication (ATC codes N05 and N06);
- sick leave because of an ICD-10-F diagnosis.

In 2017 and 2018, the ÖGK still consisted of nine regional health insurance funds that have since then been merged into a single body. People were insured based on where the employer was located. Our data, therefore, show the state where women were insured, which in some cases is different from their state of residence and may also differ from the state where they used the benefit. This information is relevant for the interpretation of data in states with a high net-commuter rate, such as Vienna. In this case, benefit uptake data concern not only women who live in Vienna but also, to some extent, those who live in states next to Vienna (Lower Austria or Burgenland), which were insured with the Viennese health insurance fund.

**Zuordnung zu
Versicherungsträger
basierte 2017 und 2018
auf Bundesland des
Arbeitgebers**

**kann sich vom
Wohnort der Frauen
unterscheiden**

3.3 Analysis

In the two years of 2017 and 2018, we extracted the first birth during that time as the reference birth for the current analysis. The information available for every woman reached back 1 year and 9 months before the birth date of the reference child till up to one year afterwards, so the period of the data ranged from 2015 to 2019.

**Referenzgeburt war
die erste Geburt einer
Frau 2017-18; gesamte
Periode: 2015 bis 2019**

For hospital admissions and sick leave periods, we chose the date of entry as the reference date, which translates to the admission date and the start date of the sick leave, respectively.

**Referenzdatum bei Spitals-
aufnahmen und Arbeitsun-
fähigkeit war Eintrittsdatum**

Since multiple diagnoses per woman could pertain to hospital admission or sick leave, just like more than one hospital ward or medication type were possible, we extracted the most frequent diagnosis, ward or medication type per woman when appropriate. We selected the most recent one if two or more of such most frequent categories existed. This is a major reduction in the complexity of some mothers' situations, but it is necessary to produce objective, comparable, presentable, and focused results.

**bei mehreren Diagnosen
wurde die häufigste
gewählt**

For frequencies of certain variables, we used the median as the measure of central tendency and the interquartile range for the variation to reduce the effects of possible outliers and to increase comparability. The median represents the value separating a data sample's higher half from the lower half. For example, in the data sample in brackets (1,2,2,3,3,4,6,8,10,12,15), '4' would be the median. The interquartile range (IQR) is the range in the middle of a set of scores after dividing the scores into four equal parts. In our example, the values '2' to '10' represent the IQR.

**Median für Darstellung
von Mittelwerten
verwendet**

Regarding age, we pre-defined the following six age groups: ≤ 20 , 21-25, 26-30, 31-40, and ≥ 40 . The age refers to the age of women at the time of birth of their first child born in the period 2017 to 2018.

5 Altersgruppen

The data checking, preparation, and analyses were performed with SPSS version 27.

Programm: SPSS

3.4 Quality control

**ÖKG-Regionalstelle
Oberösterreich:
Datenbeschaffung und
Validitätsprüfung**

**Analyse:
Statistikabteilung Med.
Univ. Innsbruck (MUI)**

**Bericht: AIHTA und
Statistikabteilung MUI**

Data have been retrieved, cleaned, and quality controlled by the Upper Austrian regional office of the ÖGK in coordination with the Tyrolean regional office of the ÖGK; the latter has been involved in previous research projects in which similar administrative data were used [27]. An epidemiologist from the Institute of Medical Statistics and Informatics at the Medical University Innsbruck processed and analysed the data. Researchers at the Austrian Institute for Health Technology Assessment processed and wrote up the results in cooperation with the Institute of Medical Statistics and Informatics of the Medical University Innsbruck. Before publication, results were reviewed for validity and plausibility by a representative of the ÖGK, who is familiar with the administrative health insurance data.

4 Results

4.1 Births by ÖGK-insured women

A total of 131,025 ÖGK-insured women gave at least one birth in 2017 and 2018. Almost two-thirds of these women were between the ages of 26 and 35. Only 5% of women were either under the age of 21 or over 40. The Austrian state with the largest number of ÖGK-insured births was Vienna, with 32,147 births in the observed time frame, representing a quarter of all deliveries in the observed population. In contrast, Burgenland had the lowest number of births, with 3,258 births, comprising 2% of the observed population (see Table 4-1).

The number of ÖGK-insured women who gave birth in 2017 covers 77% of all women who gave birth in Austria that year, with comparable distributions between the total Austrian and observed population over the Austrian states as well as over the different age groups (see comparison in Appendix, Figure 8-1). Since data hardly differed between 2017 and 2018, all results were reported as a total for both years.

ca. 130.000 Frauen hatten mind. 1 Geburt, die meisten in Wien, 2/3 zwischen 26 und 35 Jahre alt

entspricht ca. 80% aller Geburten

Table 4-1. Overview of birth numbers in the study population in the years 2017 and 2018

All Births		Total study population n = 131,025	% of total population
Birth year	2017	67,663	52
	2018	63,362	48
Age group	≤ 20 years	3,973	3
	21 – 25 years	22,150	17
	26 – 30 years	43,198	33
	31 – 35 years	40,571	31
	36 – 40 years	18,095	14
	≥ 41 years	3,038	2
State of living	Burgenland	3,258	2
	Carinthia	6,989	5
	Lower Austria	22,160	17
	Upper Austria	23,679	18
	Salzburg	8,365	6
	Styria	16,771	13
	Tyrol	11,192	9
	Vorarlberg	6,464	5
	Vienna	32,147	25

4.2 Uptake of ÖGK-funded mental health benefits: Overview

jede 4. Frau nahm
zumindest 1 der 5
Leistungen in Anspruch
größter Anteil in
Wien und Tirol

A quarter, or 25 % of the ÖGK-insured women who gave birth used at least one type of benefit in the selected period (one year before and during the perinatal period) comprising 32,341 women.

Anteil am höchsten
bei jüngsten und
ältesten Frauen

Tyrol and Vienna had the highest proportion of women claiming at least one benefit (around one-third of the regional population) compared to only 16 % in Salzburg. (Table 4-2). The high uptake of benefits was mainly driven by psychotherapy services, as presented below.

Gesundheitsdienst-
leistungen in Summe von
1/5 genutzt, am häufigsten
Psychotherapie

The age groups with the highest proportion of claims were mothers under 21 and mothers above 40. In both groups one third claimed at least one type of benefit. Mothers aged 26 to 30 had the lowest proportion of claims (23 %), while claims rose in both, older and younger age groups (Table 4-2).

mehr als 50 % nahmen
nur eine Leistungsart
in Anspruch

Specifically, mental health care services as a group (psychotherapy, community-based psychiatrists, or hospital services) were used by a total of 21 % of the observed population (n = 27,032). More detailed, psychotherapy services were used by almost one in five women (17 %), which made psychotherapy the biggest claimed benefit group. The second highest group were claims of community-based psychiatrist services (9 %), followed by medication use (7 %) and sick leave benefits (5 %). Only 2 % (n = 3,230) of the observed population received hospital services. The exact numbers are presented in Table 4-2.

Furthermore, more than half of all service recipients (58 %) used only one type of benefit, followed by 27 % who used two and 11 % who used three. Very few of the observed population used four or all five types of benefits together during the observed period (Table 4-2).

Table 4-2. Overview of benefit recipient data

	Number of service recipients	% of total population (n = 131,025)
All benefit recipients	32,341	25
Mental health care services recipients	27,032	21
■ Hospital services	3,230	2
■ Community-based psychiatrist services	11,794	9
■ Community-based psychotherapy services	22,775	17
Sick leave	5,960	5
Medication use	9,204	7
Number of benefit types claimed		% of all benefit recipients (n = 32,341)
Only one type of benefit	18,606	58
Two types of benefits	8,625	27
Three types of benefits	3,593	11
Four types of benefits	1,257	4
Five types of benefits	260	1

Number of benefit recipients per age group		% of age group
≤ 20 years	1,223	31
21 – 25 years	5,631	25
26 – 30 years	9,973	23
31 – 35 years	9,653	24
36 – 40 years	4,916	27
≥ 41 years	945	31
Number of benefit recipients per state of residence		% of births in state
Vienna	9,992	31
Upper Austria	4,855	21
Lower Austria	4,452	20
Styria	4,350	26
Tyrol	3,870	35
Salzburg	1,336	16
Carinthia	1,514	22
Vorarlberg	1,203	19
Burgenland	769	24

Of all the benefits, psychotherapy was claimed most often, with 32% of service recipients who had claimed only psychotherapy services, followed by 16% that combined it with community-based psychiatrist services and 7% that used it in combination with community-based psychiatric services and medication. Medication only was the next most claimed benefit, with 8% of all service recipients who had claimed it at least once during the observed period. Sick leave only, as well as community-based psychiatrist services only, were each claimed by 7% of service recipients, and a further 4% made use of only hospital services. A complete overview of benefit claim combinations in descending order of use can be viewed in the Appendix Table 8-1.

Figure 4-1 shows the comparison of the distribution of ÖGK-insured births to the distribution of benefit claims across the Austrian states. Theoretically, if there were no differences between the two distributions, one could infer that the uptake of benefits did not differ between states. In contrast, a higher percentage of benefit claims compared to births in a state could indicate, among other things, more availability or accessibility of services and/or higher acceptability of the benefit in that particular state compared to other states. The distributions in Figure 4-1 are more or less similar, although Vienna and Tyrol had a higher proportion of benefit claims, whereas Upper Austria, Lower Austria, Salzburg and Vorarlberg had a lower proportion of benefit claims compared to their proportion of births.

Psychotherapie am häufigsten genutzt, davon 1/3 ohne weitere Leistung

am zweithäufigsten: Psychopharmaka ohne weitere Leistung

Wien und Tirol hatten höheren Prozentsatz an Inanspruchnahme als Anteil an Geburten, in OÖ, NÖ, Sbg., Vbg. umgekehrt

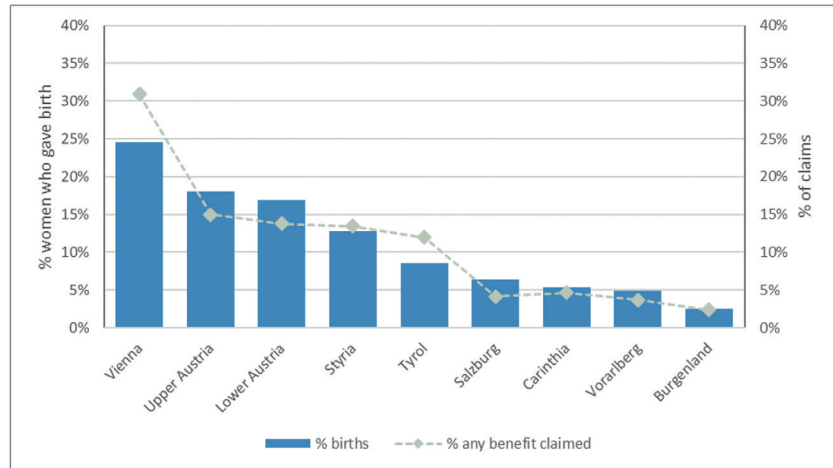


Figure 4-1. Comparison of the distribution of births (n = 131,025) to the distribution of benefit claims across Austrian states in 2017 and 2018.

4.3 Hospital services

Daten enthalten stationäre Aufnahmen u. Tagesklinik, nicht Ambulanzbesuche

gut 3.200 Frauen (2%) in KH, 41% ohne weitere Leistung

Anteil am höchsten in der Stmk., am niedrigsten in NÖ und Sbg.

höchster Anteil in jüngster Altersgruppe

nur Hauptdiagnose: ~1.300, davon 13% ohne weitere Leistung

Data on hospital services included inpatient and day-care services of women who received either a main or a secondary ICD-10-F diagnosis (mental, behavioural, and neurodevelopmental disorders) at discharge. There was no information available in the data on hospital outpatient treatments.

Overall, 3,230 women received hospital inpatient or day-care services with a primary or secondary ICD-10-F diagnosis at discharge, constituting 2% of the observed population and 10% of the population that claimed at least one benefit. 41% of hospital service recipients did not claim any other benefit (n = 1,329).

The relative proportion of claims was highest in Styria, where 1,160 or 7% of the regional population claimed hospital services and lowest in Lower Austria and Salzburg, where only 1% of the regional population received inpatient or day-care services (Table 4-3).

Mothers under 21 years were treated most often, with 8% who had received either inpatient or day-care services, followed by 4% in benefit claims among women between the ages of 21 and 25. In comparison, there were only around 2% of service recipients within the older age groups (Table 4-3).

When only primary ICD-10-F diagnoses were analysed, the number of women receiving hospital treatment decreased to 1,285 (1% of the study population; 40% of women who claimed a hospital benefit). Upper Austria had by far the highest absolute number women with primary diagnosis admissions. The percentage of women who received hospital care but did not claim other benefits decreased to 13% (n=155).

Table 4-3. Overview of hospital benefit data.

	Number of hospital service recipients		% of total population (n = 131,025)	
	Primary or secondary ICD-10-F diagnosis	Primary ICD-10-F diagnosis	Primary or secondary ICD-10-F diagnosis	Primary ICD-10-F diagnosis
Number of claims	3,230	1,285	2	1
2017	1,744	711	3	1
2018	1,486	574	2	1
Number of benefit recipients per age group			% of age group	
≤ 20 years	337	164	8	4
21 – 25 years	792	300	4	1
26 – 30 years	915	342	2	1
31 – 35 years	734	308	2	1
36 – 40 years	376	144	2	1
≥ 41 years	76	27	3	1
Number of benefit recipients per state where insured			% of births in state	
Vienna	576	199	2	1
Upper Austria	476	311	2	1
Lower Austria	285	207	1	1
Styria	1,160	196	7	1
Tyrol	176	118	2	1
Salzburg	117	86	1	1
Carinthia	147	87	2	1
Vorarlberg	236	60	4	1
Burgenland	57	21	2	1

The percentages provided for the age groups and Austrian states, always refer to the total number of the specifically observed group (e.g.: 4% of ≤ 20 year old women, received a primary ICD-10-F diagnosis; n = 164)

When the distribution of births and the distribution of hospital claims was compared across states, Styria and to a lesser extent Vorarlberg, had an exceptionally high percentage of claims, while all other states had lower benefit claims compared to their birth numbers. When only primary ICD-10-F diagnoses admissions were analysed (Figure 4-2), distributions of admissions roughly followed distributions of birth, except for Upper Austria and to a smaller extent Styria, where we observed higher than expected proportions of claims, and Vienna, where the ratio was considerably lower than would be expected from the proportion of births.

im Vergleich zu Anteil Geburten, Anteil KH-Leistungen hoch in OÖ und Stmk., niedrig in Wien.

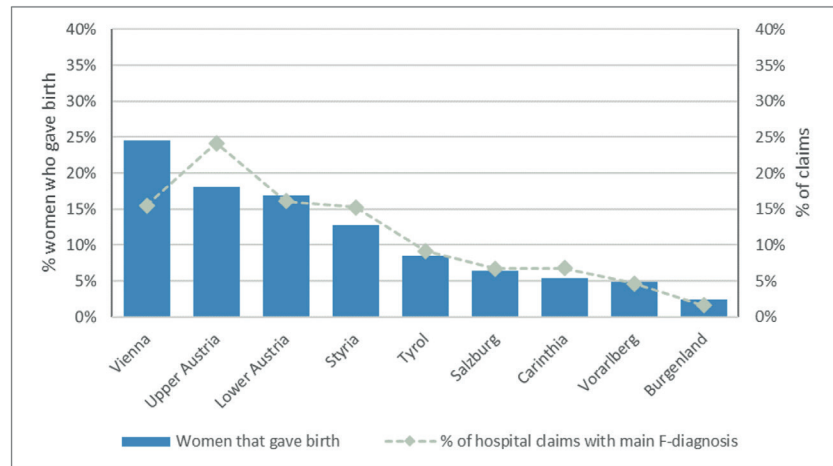


Figure 4-2. Comparison of the distribution of births (n = 131,025) to the distribution of hospital benefit claims across Austrian states in 2017 and 2018.

90% stationäre Aufnahmen
häufigste Diagnosen F4, F3; bei 50% der Aufnahmen war psychiatrische Diagnose Nebendiagnose

90%, or 4,298 hospital admissions, were into inpatient care as opposed to day-care. In contrast, this type of care was only 81% when the group was restricted to only women with a primary ICD-10-F diagnosis.

Tagesklinik: F4 und F6 etwas häufiger, F1 und F2 seltener

Half of all admissions (n=2,385) received a non-F primary diagnosis with one or more secondary ICD-10-F diagnoses at discharge. Of inpatient admissions with a primary ICD-10-F diagnosis (n = 1,939), almost a third (32%) received an F4 diagnosis (anxiety, dissociative, stress-related, somatoform, and other non-psychotic mental disorders), 22% an F3 diagnosis (mood [affective] disorders), followed by 20% who received an F1 diagnosis (mental and behavioural disorders due to psychoactive substance use). The remaining diagnoses were all below 10% each. (Figure 4-3).

Notably, admission to day-hospital care (n = 463) received more anxiety (F4) and personality (F6) related diagnoses (resp. 44% and 15%) while there were less psychoactive substance use (F1) and schizophrenia (F2) related diagnoses (resp. 7% and 2%) (Figure 4-3).

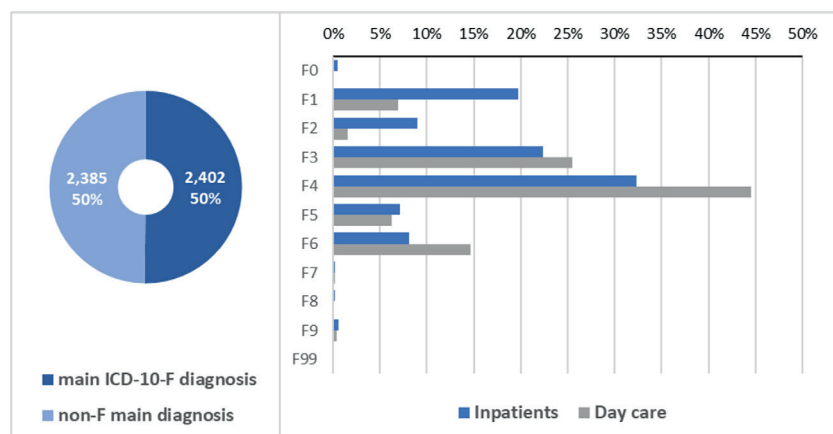


Figure 4-3. Left: Percentages of admissions with a primary or secondary ICD-10-F diagnosis (n = 4,787). Right: Comparisons between inpatient care and day-care main ICD-10-F diagnoses in 2017 and 2018.

Most patients (80%) were admitted only once with a primary or secondary ICD-10-F diagnosis at discharge, which was especially the case during pregnancy for 92% of service recipients. In the other two observed periods, slightly more patients were admitted twice, with 12% of patients before pregnancy and 14% after giving birth, compared to only 4% during pregnancy. Only 4% of service recipients were admitted three times, and 5% were admitted four or more times.

The median duration of stay for patients who received an inpatient hospital benefit was five days (IQR: 3 to 9 days). When the main diagnosis was an ICD-10-F one, the median stay was slightly longer (7 days; IQR: 2 to 17 days).

About 37% (n = 1,780) of admissions were into a psychiatry unit, while another 41% (n = 1,947) were into gynaecology and obstetrics. Admissions to paediatrics, neurology and child and adolescent psychiatric departments were below 5% each. The other 13% (n = 625) of admissions were into other wards. With a main ICD-F-10 diagnosis, the number of admissions into a psychiatric ward increased to 72% (Figure 4-4).

zumeist nur eine Aufnahme, insbesondere während Schwangerschaft

Aufenthalts-Median: 5 Tage, bei Hauptdiagnose 7 Tage

Aufnahmen am häufigsten in psychiatrischen und gynäkologischen Abteilungen

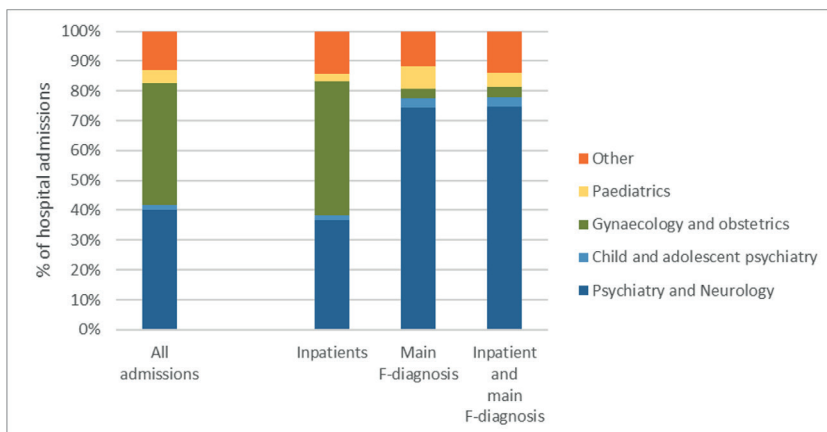


Figure 4-4. Unit of admissions for all admissions (n = 4,774), only inpatient admissions, only admissions with a main ICD-10-F diagnosis, and for only inpatient admissions with a main ICD-10-F diagnosis in 2017 and 2018.

4.4 Community-based services

4.4.1 Services provided by community-based psychiatrists

~11.800 (9%) Frauen
konsultierten
Psychiater*in

ähnlicher Anteil in allen
Bundesländern und...

...Altersgruppen

In 2017 and 2018, 11,794 women had at least one contact with a community-based psychiatrist, which represented 9 % of the insured study population and 36 % of all benefit recipients.

There was little regional difference concerning the proportion of women in the study population who sought a specialist, with the lowest proportion in Upper Austria (6 % of the insured population) and the highest in Burgenland, Styria and Tyrol (each 11 %) (Table 4-4).

The proportion of claims did not vary much between the different age groups (9 % to 11 %). However, a slightly higher percentage of mothers under 21 and above 36 claimed community-based psychiatric services (Table 4-4).

Table 4-4. Overview of community-based psychiatrist claims.

	Number of community-based psychiatrist service recipients	% of total population (n = 131,025)
Number of claims	11,794	9
2017	6,059	9
2018	5,735	9
Number of benefit recipients per age group		% of age group
≤ 20 years	381	10
21 – 25 years	1,961	9
26 – 30 years	3,760	9
31 – 35 years	3,559	9
36 – 40 years	1,806	10
≥ 41 years	327	11
Number of benefit recipients per state of residence		% of births in state
Vienna	3,084	10
Upper Austria	1,509	6
Lower Austria	2,108	10
Styria	1,766	11
Tyrol	1,186	11
Salzburg	583	7
Carinthia	569	8
Vorarlberg	633	10
Burgenland	356	11

Verteilung zwischen
Bundesländern ähnlich
den Geburten, ausg. OÖ

The distribution of community-based psychiatrist claims largely followed the birth distribution, with the most striking difference in Upper Austria, where there was a lower number of claims compared to the proportion of births (Figure 4-5).

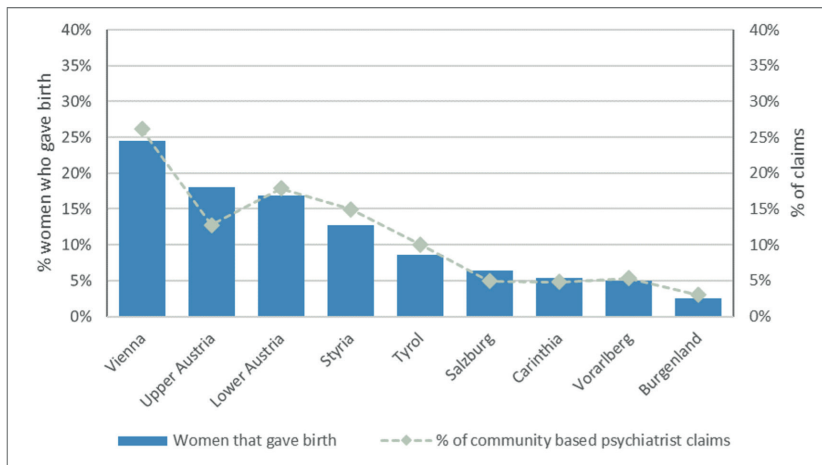


Figure 4-5. Comparison of the distribution of births (n = 131,025) to the distribution of community-based psychiatrist benefit claims across Austrian states in 2017 and 2018.

The median number of contacts was seven (IQR: 4 to 12). All states had similar numbers, except for Tyrol, where the median number of visits was higher (11; IQR: 7 to 22).

Median: 7 Kontakte

Three-quarters (n = 9,013) of the community-based psychiatric service users visited a publicly funded psychiatrist ('Vertragsärzt*in') only, while 20% (n = 2,302) solely consulted a private psychiatrist with a partial insurance refund ('Wahlärzt*in'). The remaining 4% (n = 479) of the service recipients used both types at some time. There were no major differences between the states. The proportion of women who sought a privately funded psychiatrist did tend to be larger in older age groups, although the majority still claimed publicly funded psychiatrists.

¾ konsultierten ausschließlich Vertragsärzt*in, Wahlärzt*in etwas häufiger von älteren Frauen aufgesucht

4.4.2 Psychotherapy services

22,775 ÖGK-insured women had contacts with a professional providing psychotherapy services. This represented one in six women of the observed population and concerned 70% of women who claimed any benefit. Almost half of the service recipients (45%; n = 10,248) used only the psychotherapy benefit, without any other benefits, which comprised 8% of the total insured population.

22.775 Frauen (17%) nutzten Psychotherapie, davon 45% keine weitere Leistung

Psychotherapy benefits had the highest variation between region claims. Claims were highest in Tyrol with 30% and slightly lower in Vienna, where 27% of ÖGK-insured women in our study population sought a psychotherapy service. In comparison, only around one in ten women claimed the benefit in Upper Austria, Salzburg, and Vorarlberg (Table 4-5).

Anteil differiert zwischen Ländern, am höchsten in Tirol und Wien

As for the age groups, the lowest amount of psychotherapy benefits was claimed by women between the ages of 26 and 30 (16%). On the other hand, 20% of mothers under 21 years and 23% over 40 claimed the psychotherapy benefit (Table 4-5).

höherer Anteil bei jüngsten und ältesten Frauen

Table 4-5. Overview of psychotherapy claims.

	Number of psychotherapy service recipients	% of total population (n = 131,025)
Number of claims	22,775	17
2017	11,616	17
2018	11,159	18
Number of benefit recipients per age group		% of age group
≤ 20 years	783	20
21 – 25 years	3,817	17
26 – 30 years	7,008	16
31 – 35 years	6,926	17
36 – 40 years	3,536	20
≥ 41 years	705	23
Number of benefit recipients per state of residence		% of births in state
Vienna	8,744	27
Upper Austria	2,093	9
Lower Austria	3,381	15
Styria	2,174	13
Tyrol	3,386	30
Salzburg	641	8
Carinthia	1,230	18
Vorarlberg	574	9
Burgenland	552	17

**im Vergleich zu
Geburtenanteil, hoher
Psychotherapieanteil
Tirol u. Wien,
niedrig in OÖ, Sbg., Vbg.**

As shown in Figure 4-6, although Vienna had a quarter of the total number of births, it had more than a third of all benefit claims. Furthermore, Lower Austria and Tyrol had the same proportion of claims, although Tyrol had a substantially lower proportion of births. In addition, Upper Austria and Salzburg had much lower proportions of claims compared to their proportion of births.

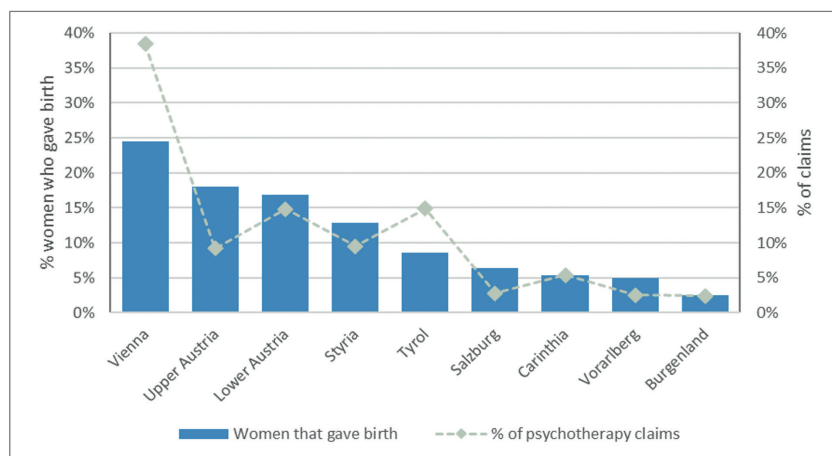


Figure 4-6. Comparison of the distribution of births (n = 131,025) to the distribution of psychotherapy benefit claims across Austrian states in 2017 and 2018.

The median number of visits was two (IQR: 1 to 5). The number was roughly the same in all Austrian states, with the highest ranges in Styria and Vorarlberg (IQR: 2 to 8 visits). There were hardly any differences between the age groups.

Most women (85 %) received fully publicly funded psychotherapy, while 10 % received a psychotherapy service from a private psychotherapist, with a partial refund from the health insurance. The remaining 5 % visited both types at some point in time. Women in Vorarlberg only saw fully publicly funded psychotherapists, closely followed by Tyrol and Vienna, where this was the case for almost 90 % of the service recipients. In comparison, 17 % of women in Styria and Burgenland only visited a privately funded psychotherapist.

The proportion of women who claimed a fully publicly funded psychotherapist was 94 % for mothers under the age of 21 and lower in the following age groups. Only in the highest age group the proportion was slightly higher again, with 84 % of mothers above 40 who contacted a fully publicly funded psychotherapist.

Median: 2 Kontakte

**größtenteils
kassenfinanzierte
Therapie**

**mehr kassenfinanzierte
Therapien bei jungen
und älteren Frauen**

4.5 Prescription of medication

In both years, 7 % of the observed population (28 % of benefit recipients) were prescribed publicly funded medication for treating mental disorders with the ATC-codes N05 or N06. This amounted to 9,204 women, whereby 2,594 or 2 % of the insured population and around 30 % of benefit recipients used medication only, without any other benefits.

Compared to other benefits, the proportion of women who claimed drugs was very similar across Austrian states, with 6 % of the regional population in Upper Austria and 9 % in Burgenland who claimed the benefit (Table 4-6). Salzburg had the highest proportion of service recipients who used medication alone without other benefits (50 %).

Women between the ages 26 to 30 used medication the least, only 6 % of that insured age group received at least one prescription, while the proportion was highest with 11 % for the mothers above 40 years of age (Table 4-6).

**~9.200 Frauen (7 %)
wurden Psychopharmaka
verschrieben**

**Anteil an Frauen ähnlich
in allen Ländern**

**höchster Anteil bei
älteren Frauen**

Table 4-6. Overview of medication claims

	Number of medication recipients	% of total population (n = 131,025)
Number of claims	9,204	7
2017	4,756	7
2018	4,448	7
Number of benefit recipients per age group		% of age group
≤ 20 years	358	9
21 – 25 years	1,458	7
26 – 30 years	2,612	6
31 – 35 years	2,849	7
36 – 40 years	1,597	9
≥ 41 years	330	11

Number of benefit recipients per state of residence	% of births in state	
Vienna	2,401	7
Upper Austria	1,479	6
Lower Austria	1,445	7
Styria	1,248	7
Tyrol	783	7
Salzburg	599	7
Carinthia	482	7
Vorarlberg	481	7
Burgenland	286	9

The distribution of medication claims was similar to that of births in the different states (Figure 4-7).

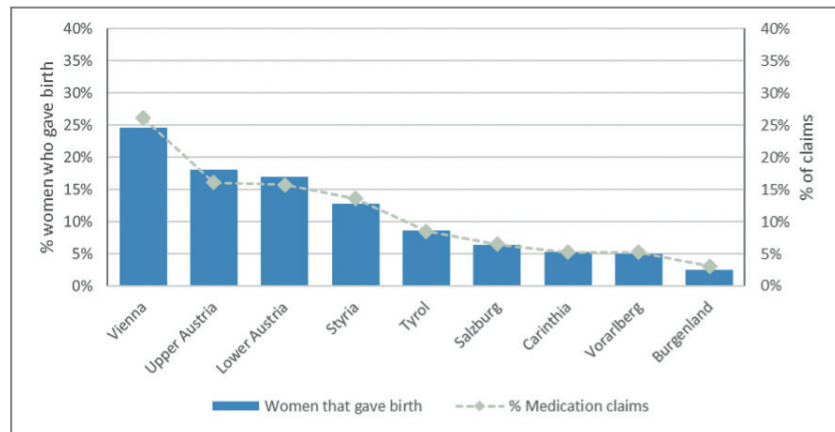


Figure 4-7. Comparison of the distribution of births (n = 131,025) to the distribution of medication benefit claims across Austrian states in 2017 and 2018.

**Antidepressiva
machen ¾ der
Verschreibungen aus**

Three-quarters (76 %) of prescriptions were for antidepressants (ATC-code N06A), followed by 13 % of prescriptions for antipsychotics (ATC-code N05A) and 7 % for anxiolytics (ATC-code N05B). The remaining medication types were rarely prescribed (Figure 4-8). All states, except Vienna, had the same distribution of prescriptions. Vienna had a higher proportion of prescriptions for anxiolytics (12 %) and a lower proportion for antidepressants (68 %).

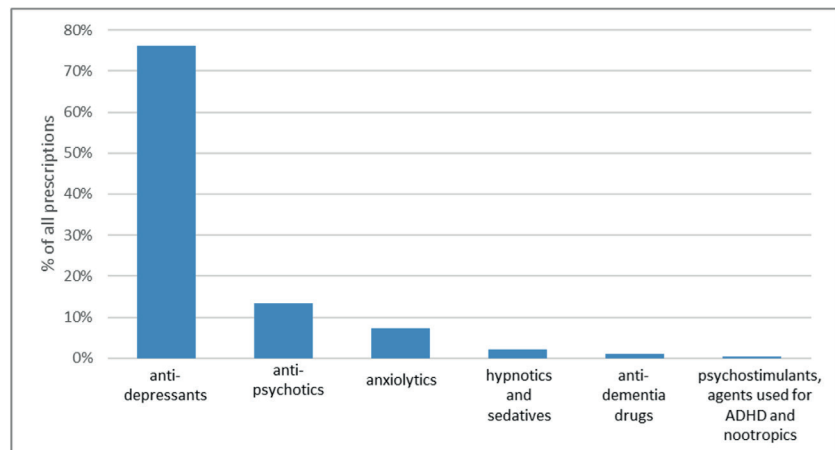


Figure 4-8. Proportion of prescriptions (n = 80,251) by drug type in 2017 and 2018.

The median number of prescriptions was three (IQR: 1 to 11). The highest median was for anxiolytics (N05B), with half of all medication users getting 56 prescriptions (IQR: 27 to 127), followed by prescriptions for hypnotics and sedatives (N05C) with a median number of 42 prescriptions (IQR: 13 to 160). Antipsychotics (N05A) had a medium number of 29 prescriptions (IQR: 15 to 52). Antidepressants (N06A) and psychostimulants (N06B) had a similar median number of prescriptions of 20 (IQR: 9 to 31) and 19 (IQR: 12 to 29). We found the lowest median number of prescriptions for anti-dementia drugs (N06D), with half of the users getting only one prescription (IQR: 1 to 4).

**im Mittel
3 Verschreibungen**

**Unterschiede bei Median
zwischen Arzneimittel**

4.6 Sick leave

A total of 5,960 ÖGK-insured study-group women were on at least one sick leave with an ICD-10-F diagnosis, which constituted 5 % of the observed population and 18 % of all women who claimed benefits. Forty four percent of women who claimed sick leave did not use any other benefit. Proportions of sick leave claims were comparable between all Austrian states and ranged between 4 % to a maximum uptake of 6 % in Upper Austria (Table 4-7).

**fast 6.000 Frauen (5%)
in Krankenstand, kaum
Länderunterschiede**

**fast die Hälfte ohne
weitere Leistung**

Regarding the different age groups, the proportion of claims was highest for mothers under 20, with 8 % of insured mothers who claimed at least one sick leave, while the lowest share was observed between the ages of 26 to 30 and 31 to 35 years, with 4 % (Table 4-7).

**höchster Anteil in
jüngster Altersgruppe**

Table 4-7. Overview of sick leave claims

	Number of sick leave claims	% of total population (n = 131,025)
Number of claims	5,960	5
2017	2,973	4
2018	2,987	5
Number of benefit recipients per age group		% of age group
≤ 20 years	310	8
21 – 25 years	1,228	6
26 – 30 years	1,814	4
31 – 35 years	1,599	4
36 – 40 years	847	5
≥ 41 years	162	5
Number of benefit recipients per state of residence		% of births in state
Vienna	1,217	4
Upper Austria	1,361	6
Lower Austria	924	4
Styria	762	5
Tyrol	460	4
Salzburg	440	5
Carinthia	308	4
Vorarlberg	317	5
Burgenland	171	5

Wien proportional niedrigerer Anteil als Geburten, OÖ umgekehrt

Compared to the distribution of births, there was a lower-than-expected uptake of sick leave claims in Vienna and a higher proportion of uptake in Upper Austria (Figure 4-9).

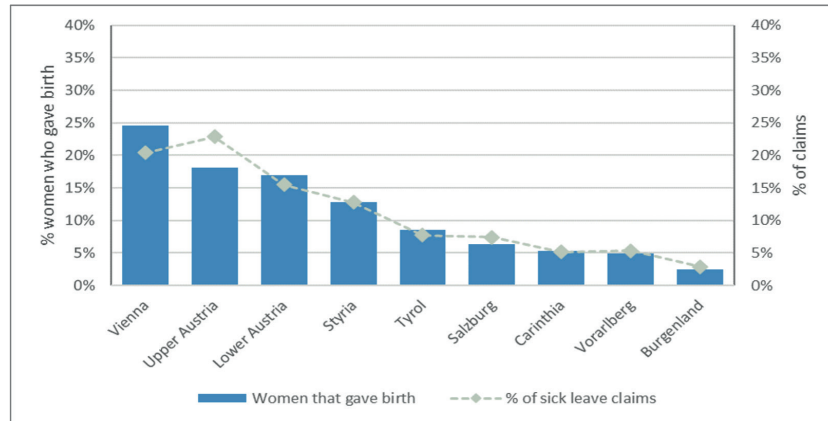


Figure 4-9. Comparison of the distribution of births (n = 131,025) to the distribution of sick leave benefit claims across Austrian states in 2017 and 2018.

mehr als ¾ der Frauen nur 1 Krankenstand

Most benefit recipients (79%; n = 4,708) claimed only one sick leave, followed by 15% who claimed two sick leaves. Only 4% and 2% of benefit receivers claimed sick leaves three and four or more times, respectively (with slightly higher proportions in mothers under 21 compared to the other age groups). The median duration of sick leave was 11 days (IQR: 5 to 28 days).

am häufigsten F4 (>50%) und F3 (37%)

The most common ICD-10-F diagnosis during sick leave was for anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders (F4), which comprised 56% of all diagnoses, followed by 37% of diagnoses for mood [affective] disorders (F3). Only 7% of benefit recipients had another diagnosis (Figure 4-10).

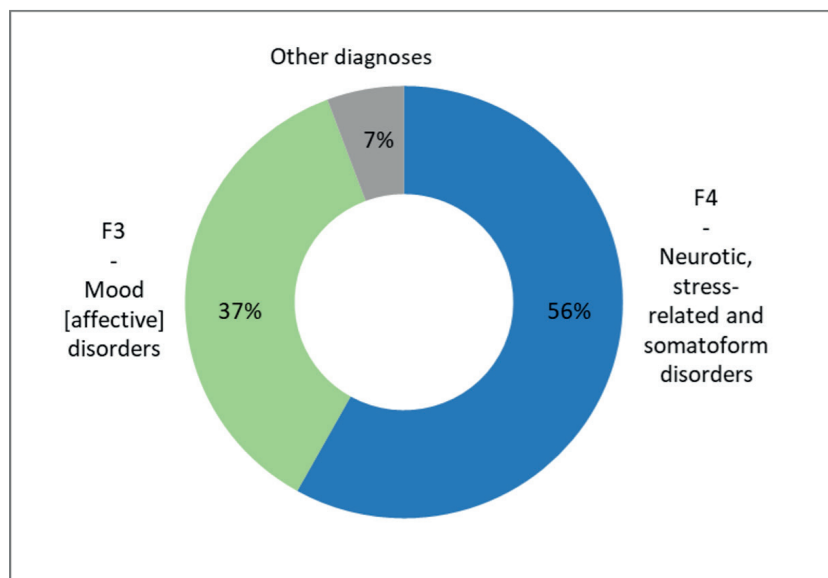


Figure 4-10. Most common sick leave diagnoses (n = 7,790) in 2017 and 2018.

4.7 Comparison between age groups

Additionally, we were interested in the demographic characteristics of the benefit uptake. Therefore, we examined the benefit uptake in the different age groups. Generally, the proportion of claims was higher in younger and older age groups and lowest between the ages of 26 and 35. Psychotherapy benefits, as well as hospital service claims, showed the most prominent variation between age groups, with a difference of seven percentage points between the group with the lowest and the highest proportion of claims. The community-based psychiatrist service claims showed the least variation, about 10%, in all age groups. Notably, hospital service and sick leave claims were relatively frequent in the two lowest age groups but were at the same level among the older women (Figure 4-11).

Anteil Leistungen bei jüngsten und ältesten Frauen am höchsten, v.a. bei Psychotherapie u. Krankenhausbehandlung

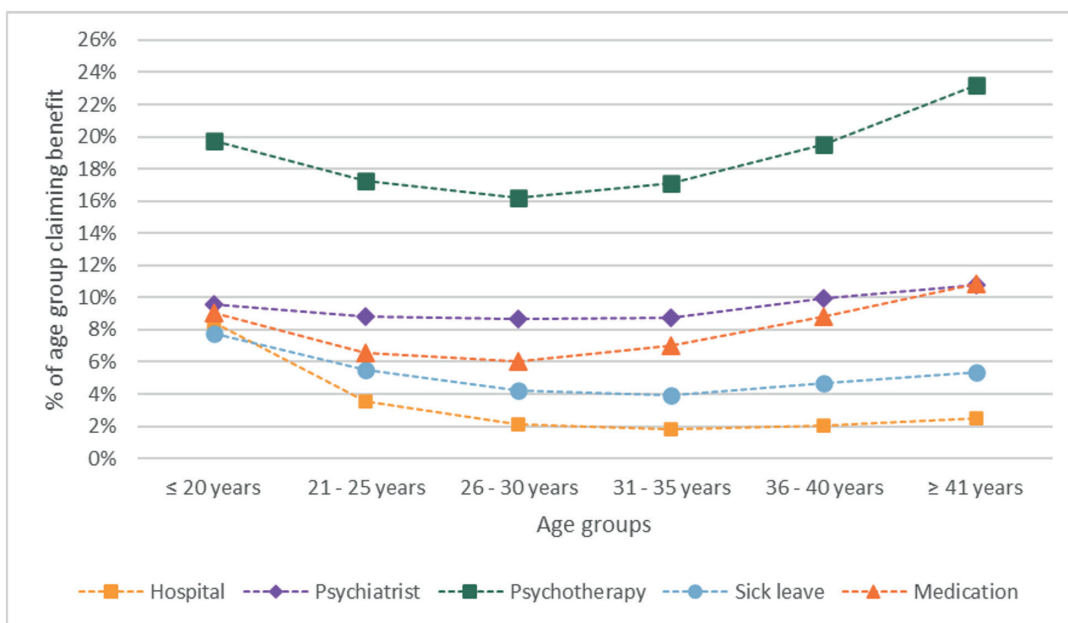


Figure 4-11. Percentage of mothers claiming the various benefits in each age group.

4.8 Comparison between the different periods

Figure 4-12 compares the frequency of claims for each benefit in each life event period (up to one year before pregnancy, during pregnancy, and up to one year after giving birth).

A total of 956 women (0.7% of the total study population) received hospital benefits with a main or secondary ICD-10-F diagnosis before pregnancy, 1,962 (1%) were treated in hospital during pregnancy, and 686 were so after birth (1%). When considering main diagnoses only, the respective numbers were 677 (1%), 284 (0.2%) and 501 (0.4%) women.

Community-based psychiatrist services were claimed by a total of 5,929 women (5%) before pregnancy, by 5,054 women (4%) during pregnancy, and by 4,591 women (4%) after pregnancy.

Psychotherapy was the most claimed benefit. It was utilised by 11,899 women (9% of our total observed population) in the year before pregnancy, by 9,631 women (7%) during pregnancy, and by 9,782 women (7%) in the year after birth.

Vergleich zwischen 3 Zeitperioden

KH: ~1.000 vs. ~1.900 vs. ~700

Psychiater*in: ~6.000 vs. ~5.000 vs. ~4.600

Psychotherapie: ~11.900 vs. ~9.600 vs. ~9.800

Psychopharmaka: ~6.200 vs. ~3.350 vs. ~5.000

Women were prescribed medication for mental disorders mostly before pregnancy (n = 6,221; 5%), with a decrease of claims to almost half during pregnancy (n = 3,349; 3%). This pattern was similar for all medicine subtypes, with the highest reductions in prescriptions during pregnancy for psychostimulants (N06B) and anti-dementia drugs (N06D). After birth, the number of women who claimed the medication benefit increased again to 4,952 (4% of the study population).

Krankenstand: ~3.500 vs. ~2.600 vs. ~350

Sick leave benefits were claimed by 3,510 women before pregnancy, which comprised 3% of the total population. There was a decrease in claims during pregnancy to 2,597 (2%), and only 344 women claimed the benefit after giving birth (0.3%).

zumeist höhere Inanspruchnahme vor Schwangerschaft

Generally, every benefit was used by the greatest number of women before pregnancy, with only the hospital benefit being claimed by benefit service recipients the most during pregnancy (Figure 4-12).

hoher Anteil an Frauen nahm nur in einer Periode Leistung in Anspruch

Further, a large proportion of women used each benefit during only one out of the three periods. For example, if women claimed one of the five types of mental health benefits before pregnancy, at least half and up to 87% of them (depending on the type of benefit) used those benefits only during the pre-pregnancy period, indicating that benefit uptake stopped with the onset of pregnancy and no claims being made during the perinatal period. The use during only one of the three periods was most pronounced for hospital treatment and sick leave, while it was somewhat less noticeable for psychiatrist contacts, psychotherapy and medication (Figure 4-12).

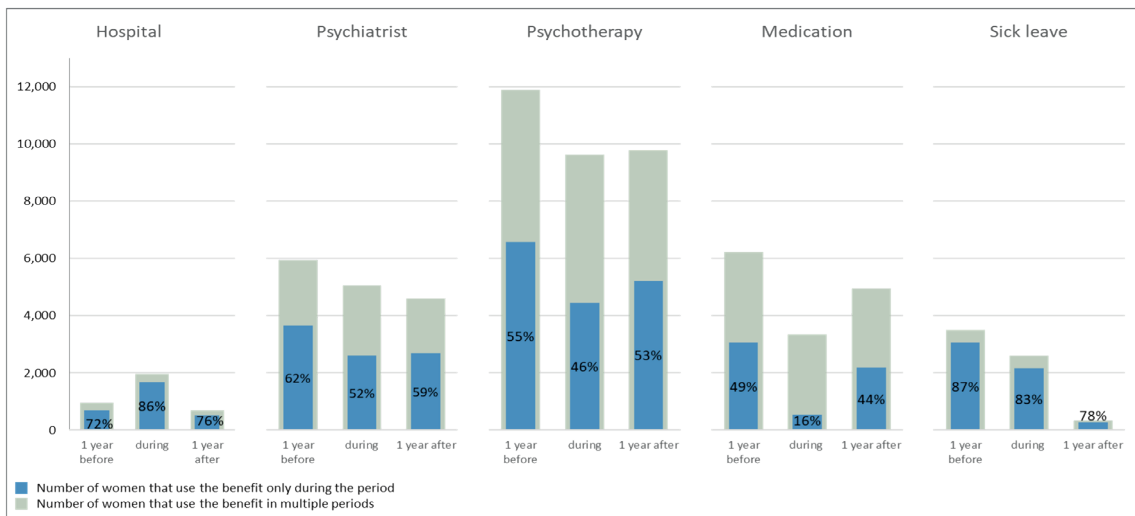


Figure 4-12. Number of women claiming each benefit in each observed period. Grey bars represent total number of claims, while blue bars show the frequency and percentage of women who claim each benefit only during the particular period.

KH-Aufnahmen während Schwangerschaft häufig in Gynäkologie, ansonsten mehr in Psychiatrie

Regarding hospital treatment in detail, more than half of all inpatients were admitted into a gynaecology and obstetrics unit; Figure 4-13 shows that this was mostly during pregnancy, with 88% of women (n = 1,690) having been admitted there during the nine months of pregnancy. Before pregnancy and after giving birth, most patients were admitted to a psychiatric unit. Still, a considerable number of women were admitted to other wards before and after pregnancy.

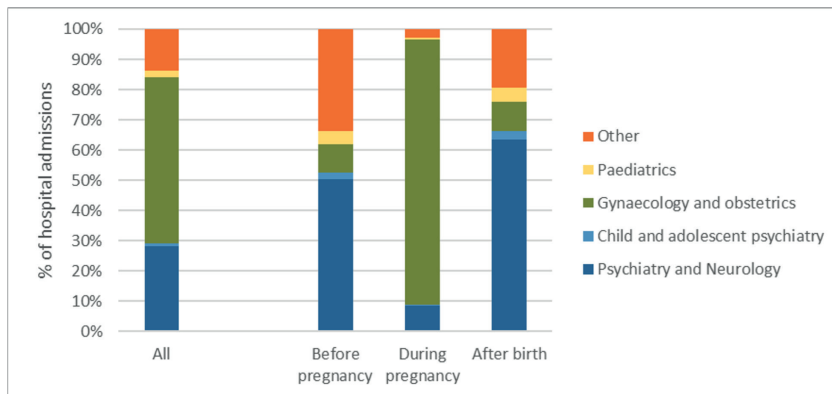


Figure 4-13. Distribution of the type of hospital ward during the three life event periods (before pregnancy; during pregnancy; after giving birth) and overall (n = 3,145).

Whereas before and after pregnancy, only around a third of women who received hospital inpatient services were diagnosed with F4 (neurotic, stress-related and somatoform disorders), this was the case for half of all women who used this benefit during pregnancy. Other diagnoses did not differ in their prevalence between the three periods.

Anteil F4 Diagnose je nach Periode unterschiedlich, bei anderen Diagnosen keine Unterschiede

4.9 Benefit claims in the perinatal period

Since we were especially interested in benefit claims during the perinatal period, following are results restricted to that period with a description of the usage behaviour throughout.

Details für Peripartalphase

During the perinatal period, the time during pregnancy up until one year after birth, a total of 23,314 women claimed benefits, which amounted to 18 % of the total study population, with 15,215 of women who claimed benefits during pregnancy (12 %) and 13,556 after giving birth (10 %).

insgesamt ~23.300 Frauen mit Inanspruchnahme = fast jede 5. Frau

Hospital services

A total of 2,541 women claimed hospital benefits during the perinatal period, which corresponded to 2 % of the study population, with 1,962 (1 %) women who claimed hospital benefits during pregnancy and 686 (0.5 %) after giving birth. Furthermore, 70 % (n = 1,338) of women who claimed a hospital benefit during pregnancy and 20 % (n = 160) who claimed it after giving birth did not use any other benefits.

2% waren im Krankenhaus; wenn während Schwangerschaft, häufig keine weitere Leistung

Roughly one third (n=785) of those women were admitted with a primary ICD-10-F diagnosis (1 % of the study population), 284 (0.2 %) during pregnancy and 501 (0.4 %) after birth. Eighteen percent (n=52) of women who were admitted with a main ICD-10-F diagnosis during pregnancy and 16 % (n=78) who were admitted after birth did not use any other benefits.

1% Krankenhausaufnahmen mit Hauptdiagnose, ca. 17% davon ohne weitere Leistung

Community-based services

Services provided by community-based psychiatrists

A total of 8,136 women (6 % of the study population) visited a community-based psychiatrist at least once during the perinatal period, of whom 5,054 (4 %) women did so during pregnancy and 4,591 (4 %) after birth. Twenty two percent of women (n = 1,122) who were in contact with a community-based psychiatrist during pregnancy and 22 % of women (n = 995) who had a contact after giving birth did not claim any other type of benefit.

6% konsultierten Psychiater*in, ein Fünftel davon nahm sonst keine Leistung in Anspruch

12% hatten Psychotherapie, die Hälfte davon nahm sonst keine Leistung in Anspruch

Psychotherapy services

During the perinatal period, in total 16,205 women (12% of the study population) claimed psychotherapy services, of whom 9,631 (7%) claimed the benefit during pregnancy and 9,782 (7%) after giving birth. About half of the women (n = 4,762) who received psychotherapy services during pregnancy and half who received them after giving birth (n = 5,208) did not claim any other type of benefit.

Use of medication

5% wurden Psychopharmaka verschrieben, rund 40% ohne weitere Leistung

Medication for mental illnesses was claimed by 6,150 or 5% of the total study population during the perinatal period. The absolute claims during pregnancy and after birth were 3,349 (3%) and 4,952 (4%) respectively. Thirty nine percent of women (n = 1,293) who used medication for mental illnesses during pregnancy and 46% (n = 2,261) who used it after giving birth did not claim any other benefits.

Sick leave

2% waren in Krankenstand

The sick leave benefit was claimed by 2,893 women during the perinatal period (2,597 during pregnancy and 344 after birth), which corresponded to 2% of our study population.

Characteristics within the perinatal period

insg. nahmen 30% nur Leistungen in Schwangerschaft und ¼ nur nach der Geburt in Anspruch

Generally, almost 30% of all women who claimed benefits in the perinatal period did so only during pregnancy and around a quarter claimed benefits only after giving birth. Seventeen percent of women who claimed benefits during the perinatal period claimed benefits during every one of the three life event periods (before, during, and after pregnancy) (Figure 4-14).

Spitalsleistungen und Krankenstand eher in Schwangerschaft, Psychiater*in und Psychotherapie auch nach der Geburt

Most women in hospital care or on sick leave during the perinatal period claimed those benefits only during pregnancy. On the contrary, if women had contacts with psychiatrists and psychotherapists during the perinatal period, a similar proportion (around one-third) used those services either only during pregnancy or only after birth. Medication was used only after birth or during all three periods (Figure 4-14).

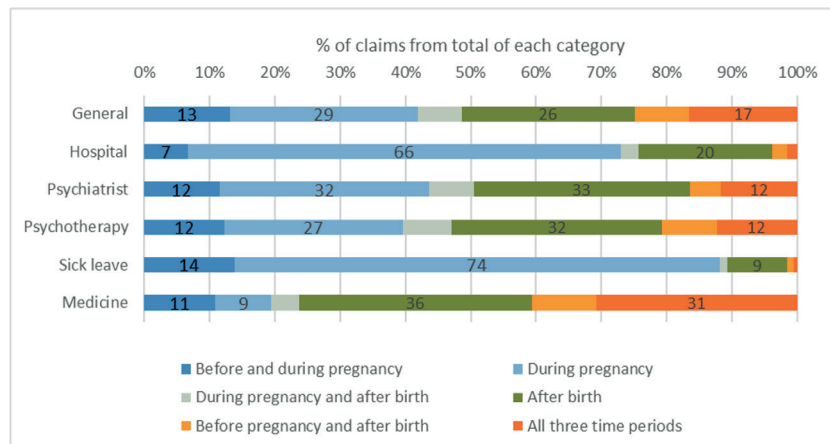


Figure 4-14. Overview of benefit claim patterns during the perinatal period in 2017 and 2018 (n = 23,314). For a better readability, lower percentages are not included.

4.10 Tyrolean details

Uptake of ÖGK-funded mental health benefits

A total of 3,870 women in Tyrol used at least one type of benefit during the observed periods, which represented 35 % of the regional study population. The proportion varied between around one-fourth in Kitzbühel and almost half of all women in Schwaz (Table 4-8). Notably, the high variation of claims was almost exclusively driven by psychotherapy service claims. At the same time, the uptake of the other benefits did not vary much between the districts, staying for the most part within 1 % to 15 %.

Figure 4-1 shows the distribution of births compared to the distribution of benefit claims in the Tyrolean districts. Notably, Schwaz had the highest difference between the two distributions, with a higher proportion of claims than their proportion of births, the situation was similar in Landeck. Most other districts had a slightly lower proportion of claims compared to their share of births.

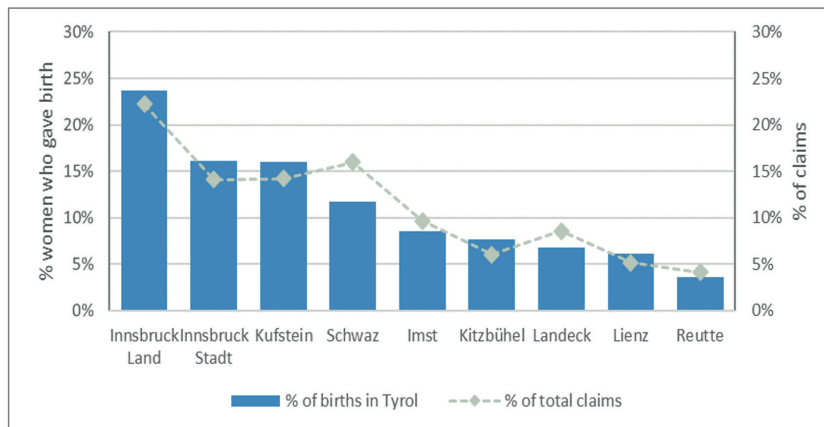


Figure 4-15. Comparison of the distribution of births (n = 11,192) to the distribution of benefit claims across Tyrolean districts in 2017 and 2018.

In Tyrol, the distribution of age groups was very similar to that of the total ÖGK-insured Austrian population. The proportion of women who used at least one benefit was somewhat higher in the younger age groups, while it was about a third for women in the other age groups (Table 4-8).

Concerning the different life event periods, there was a decrease in benefit claims from 19 % before to 14 % during pregnancy, followed by an increase in the uptake of claims after giving birth to almost the same amount as before pregnancy (17 %). A total number of 2,847 women (25 % of the Tyrolean observed population) claimed benefits during the perinatal period.

Hospital services

The proportion of women who claimed hospital services in Tyrol did not differ from the nationwide figure, with 2 %, or 176 women who claimed the benefit. From those, two thirds (n=118) had a main ICD-10-F diagnosis. 75 women claimed hospital benefits before pregnancy (0.7 % of the Tyrolean study population), 64 during pregnancy (0.6 %) and another 64 after giving birth (0.6 %). During the entire perinatal period, a total of 120 women

~3.800 Frauen (35 %) in Tirol nahmen mind. 1 Leistung in Anspruch, regionale Unterschiede, primär bedingt durch Psychotherapie

im Vergleich zu Anteil Geburten, höherer Leistungsanteil in Schwaz u. Landeck

wie in ganz Österreich höherer Anteil bei jüngsten und ältesten Frauen

jede 4. Frau nahm in Peripartalphase Leistung in Anspruch

gleicher Anteil wie in Gesamtösterreich nahm Spitalsleistung in Anspruch (2%)

60% in Peripartalzeit mit Hauptdiagnose

im Vergleich zu Geburten, in Innsbruck-Stadt geringer Anteil, in mehreren Bezirken höherer Anteil

claimed at least one hospital benefit (1%). More than half of them (n=73) were discharged with a main ICD-10-F diagnoses.

The proportion of claims varied minimally between districts, with 1 to 3% of women who claimed benefits in each district (Table 4-8). Notably, when comparing the distribution of claims with a main ICD-10-F diagnosis across districts, to the proportion of births, the highest proportion (23%) of hospital benefit claims in Tyrol was in Kufstein, which was third when it came to birth numbers. Further, Innsbruck Stadt as well as Kitzbühel also had a higher proportion of claims than their proportion of births, while Innsbruck Land, Imst, Landeck, Lienz and Reutte all had a lower proportion of hospital claims compared to their proportion of births (Figure 4-16).

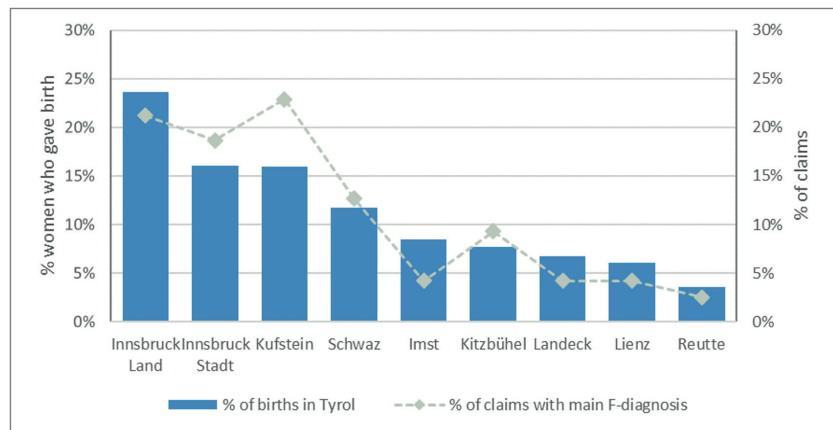


Figure 4-16. Comparison of the distribution of births (n = 11,192) to the distribution of hospital benefit claims across Tyrolean districts in 2017 and 2018.

Inanspruchnahmestruktur bei Altersgruppen ähnlich wie Gesamtösterreich

Concerning the different age groups, the situation in Tyrol was similar to that of the total Austrian population: Seven percent of mothers below the age of 21 years received a hospital service compared to about only 1% or 2% in the other age groups. The number of hospital patients was the same for all three life event periods, with around 0.6% of Tyrolean mothers who claimed a hospital benefit at any time (Table 4-8).

ca. 80% stationäre Aufnahmen, mehr Aufnahmen mit Hauptdiagnose als in Gesamtösterreich

Admissions to inpatient care compared to day-care in Tyrol were 83% versus 17% for all admissions and 78% versus 22% with a main ICD-10-F diagnosis. In contrast to Austria overall, a considerably higher proportion (more than three quarters) of admissions received a main ICD-10-F diagnosis, while only slightly above a fifth of admissions were documented with a secondary ICD-10-F diagnosis.

Häufigkeiten bei Diagnosen ähnlich wie Gesamtösterreich

In line with national figures, the most common diagnoses in inpatient and day-care admissions were neurotic, stress-related and somatoform disorders (F4), accounting for almost half of all admissions, and mood [affective] disorders (F3), representing around another quarter of admissions. Inpatient and day-care admissions differed mostly in their F1, F2 and F6 diagnoses. F1 (mental and behavioural disorders due to psychoactive substance) and F2 diagnoses (schizophrenia, schizotypal and delusional disorders) were hardly present in day-care patients, while one out of ten inpatient admissions received those diagnoses. On the contrary, disorders of adult personality and behaviour diagnoses (F6) were almost non-existent for inpatient admissions but documented in around 17% of day-care admissions (Figure 4-17).

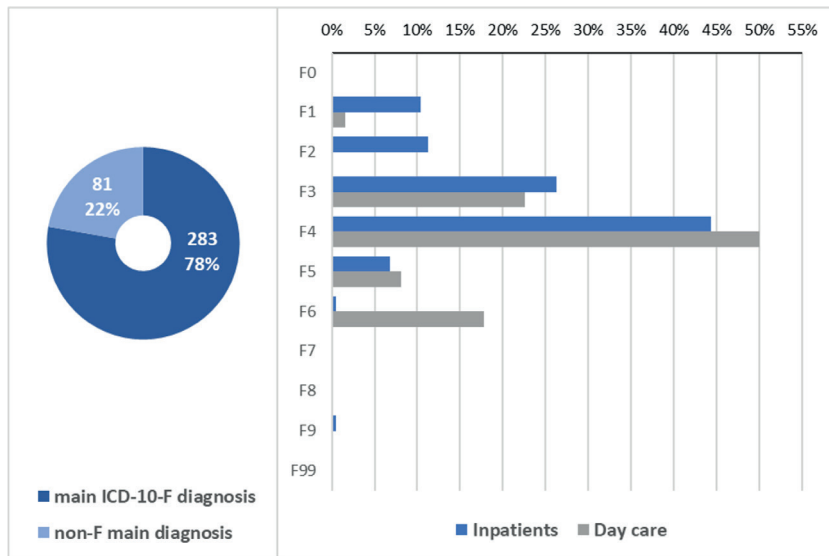


Figure 4-17. Left: Percentages of admissions getting a primary or secondary ICD-10-F diagnosis (n = 364). Right: Comparison between inpatient care and day-care diagnoses.

As in the rest of Austria, most women (around 70 % [n = 121]) were admitted once, followed by 14 % (n = 24) who were admitted twice. Notably, the percentage of patients admitted four or more times was higher in Tyrol, with 13 % compared to the total Austrian study population (only 5 %). The median duration of stay was five days (IQR: 2 to 10 days) like it was in Austria overall. With a main ICD-10-F diagnosis, the IQR increased slightly to two to 13 days while the median duration of stay was the same. 60 % of patients were admitted to a psychiatry unit, and another 19 % to a gynaecology and obstetrics unit.

etwas mehr Frauen in Tirol, die mehr als 4x aufgenommen wurden

zumeist aber nur eine Aufnahme

Community-based services

Community-based psychiatrists

Overall, 11 %, or 1,186 Tyrolean ÖGK-insured women, contacted a community-based psychiatrist. Of those, 620 women (6 % of the Tyrolean study population) did so before pregnancy, 467 (4 %) during pregnancy and 485 (4 %) after birth. In total, 799 women (7 %) visited a community-based psychiatrist during the perinatal period.

etwas höherer Anteil (11 %) konsultierte Psychiater*in

The lowest proportion was observed in Innsbruck Stadt (8 %), compared to the highest in Reutte, where 18 % of women sought a community-based psychiatrist (Table 4-8). In Innsbruck Land, Kitzbühel, Kufstein and Landeck each, 10 % of their population claimed a psychiatrist benefit at least once. The distribution of these benefit claims followed more or less the distribution of births in Tyrol, although the proportion of claims was lower in Innsbruck Stadt compared to their proportion of childbirth, while Imst, Lienz and Reutte had a higher proportion of claims compared to their proportion of births (Figure 4-18)

unterschiedlicher Frauenanteil zwischen Bezirken (8-18 %);

Vh. zu Geburtsanteil: weniger Uptake in Innsbruck-Stadt, mehr in Imst, Lienz, Reutte

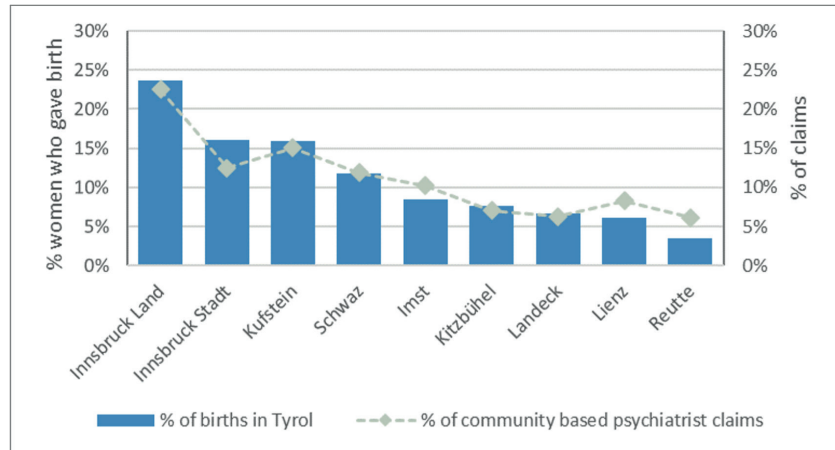


Figure 4-18. Comparison of the distribution of births (n = 11,192) to the distribution of community-based psychiatrist benefit claims across Tyrolean districts in 2017 and 2018.

mediane Anzahl an Kontakten in Tirol etwas höher als Österreich

The number of visits was higher in Tyrol compared to the total Austrian population, with a median of 11 visits (IQR: 7 to 22). The proportion of service recipients contacting a fully publicly funded psychiatrist was overall high but differed to some extent between the districts.

Table 4-8. Overview of benefit claims in Tyrol. Percentages relate to the number of births in each line.

		Number of women who gave birth	All benefit claims	Hospital	Psychiatrist	Psychotherapy	Sick leave	Medication
Total		11,192	3,870 35%	176 2%	1,186 11%	3,386 30%	460 4%	783 7%
District of living	Innsbruck Land	2,645	861 33%	28 1%	267 10%	738 28%	120 5%	188 7%
	Innsbruck Stadt	1,800	546 30%	26 1%	148 8%	456 25%	89 5%	139 8%
	Kufstein	1,788	551 31%	33 2%	179 10%	447 25%	92 5%	140 8%
	Schwaz	1,316	617 47%	18 1%	141 11%	588 45%	38 3%	91 7%
	Imst	949	373 39%	20 2%	121 13%	327 34%	48 5%	70 7%
	Kitzbühel	862	233 27%	16 2%	84 10%	201 23%	29 3%	52 6%
	Landeck	754	331 44%	20 3%	75 10%	306 41%	16 2%	38 5%
	Lienz	681	199 29%	10 1%	98 14%	177 26%	14 2%	37 5%
	Reutte	397	159 40%	5 1%	73 18%	146 37%	14 4%	28 7%
Age-group	≤ 20 years	283	112 40%	20 7%	32 11%	93 33%	29 10%	29 10%
	21 – 25 years	1,754	645 37%	36 2%	193 11%	571 33%	92 5%	117 7%
	26 – 30 years	3,743	1,292 35%	52 1%	410 11%	1,139 30%	151 4%	241 6%
	31 – 35 years	3,616	1,194 33%	43 1%	357 10%	1,038 29%	121 3%	246 7%
	36 – 40 years	1,547	543 35%	21 1%	165 11%	469 30%	60 4%	130 8%
	≥ 41 years	249	84 34%	4 2%	29 12%	76 31%	7 3%	20 8%

Psychotherapy services

Psychotherapy services were the most claimed benefit in Tyrol, just like nationwide, with a large variation between districts (Table 4-8). A total of 3,386 women claimed a psychotherapy benefit in Tyrol, which comprised 30 % of the Tyrolean study population. 1,746 women did so before getting pregnant, which comprised 16 % of the Tyrolean study population, 1,323 during pregnancy (12 %) and 1,665 women (15 %) after giving birth. A total of 2,495 women (22 %) claimed psychotherapy benefits during the perinatal period.

As seen from the data on the regional proportions of claims, Schwaz had the second highest proportion of psychotherapy claims, behind Innsbruck Land. Further, Landeck had a higher proportion of claims than births (Figure 4-19).

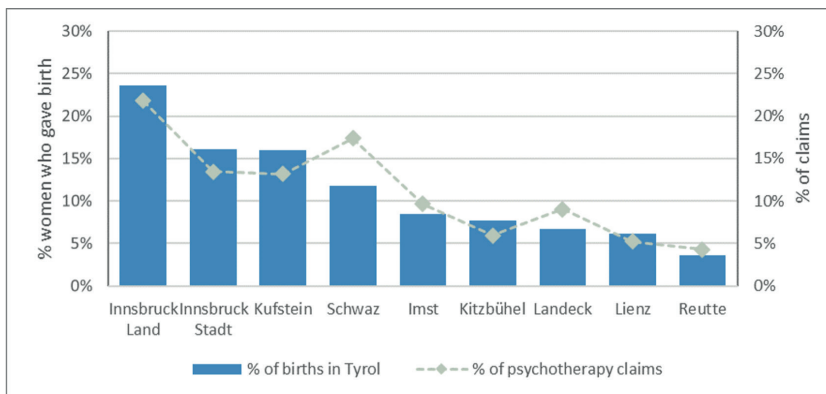


Figure 4-19. Comparison of the distribution of births (n = 11,192) to the distribution of psychotherapy benefit claims across Tyrolean districts in 2017 and 2018.

The claims between the different age groups varied slightly between 29 % and 33 %, whereby the lowest percentage was observed for mothers between 31 and 35 and the highest for mothers under 21 (Table 4-8).

Generally, women contacted a psychotherapist with a median of two times (IQR 1 to 5), with little differences between the districts, age groups, and life event periods. The proportion of mothers who visited a fully publicly funded psychotherapist was high across all districts.

Use of medication

Some 7 % of the Tyrolean study population (n = 783) were prescribed publicly funded medication for treating mental disorders with the ATC-codes N05 or N06, of which 543 women (5 %) received prescriptions before pregnancy, 275 (2 %) during pregnancy and 408 (4 %) after birth. In total, and similar to Austria overall, 504 women (5 %) were prescribed medication for treating mental disorders during the perinatal period. Further, Tyrol hardly differed from the country concerning the distribution of prescribed medicine subtypes.

The claims ranged between 5 % in Landeck and Lienz and 8 % in Innsbruck Stadt and Kufstein (Table 4-8). The distribution of benefit claims was mostly comparable to that of births, with Innsbruck Stadt and Kufstein having a slightly higher proportion of claims. In comparison, Landeck and Lienz had a somewhat lower proportion of claims compared to their proportion of births (Figure 4-20).

Psychotherapie war häufigste Leistung (30 % der Frauen)

Frauenanteil schwankt stark zwischen Bezirken

hoher Prozentsatz in Schwaz

höchster Anteil in jüngster Altersgruppe

im Mittel 2 Besuche, größtenteils bei Kassentherapeut*innen

Anteil Frauen mit Psychopharmaka-Verschreibung wie in Gesamtösterreich (7 %)

minimale Unterschiede zwischen Bezirken

Vh. Geburten ähnlich wie Vh. Verschreibung

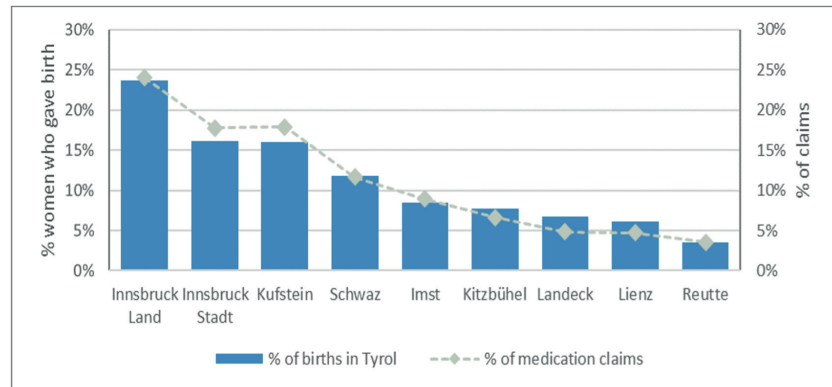


Figure 4-20. Comparison of the distribution of births (n = 11,192) to the distribution of medicine claims across Tyrolean districts in 2017 and 2018.

Muster in Altersgruppen wie Gesamtösterreich

Mothers between the ages of 26 and 30 had the lowest percentage of claims (6%), with a higher proportion of claims for younger and older age groups. The percentage of claims was highest for mothers under 21, with 10% (Table 4-8).

geringfügig niedrigere Krankenstandsquote in Tirol

Sick leave

The sick leave benefit was claimed by 4% (n = 460) of the Tyrolean study population. Before pregnancy, sick leaves were claimed by 272 women (2%), during pregnancy by 183 women (2%) and 45 women (0.4%) claimed it after giving birth. A total of 221 women (2%) claimed the benefit during the perinatal period.

Anteil schwankt zwischen 2% und 5% je Bezirk

Claims ranged between 2% in Landeck and Lienz and 5% in the districts Imst, Innsbruck Land, Innsbruck Stadt and Kufstein (Table 4-8). Innsbruck Land, Kufstein, Innsbruck Stadt and Imst all had a higher proportion of benefits, while the other districts had a lower proportion of benefits than their respective proportion of births (Figure 4-21).

meist nur 1 Krankenstand, Altersmuster wie Gesamtösterreich

Claims were highest for mothers under 21, with 10% of this age group who claimed sick leaves and around 4% for the other age groups (Table 4-8). Most mothers (78%) took only one sick leave, followed by 15% of women who claimed two sick leaves.

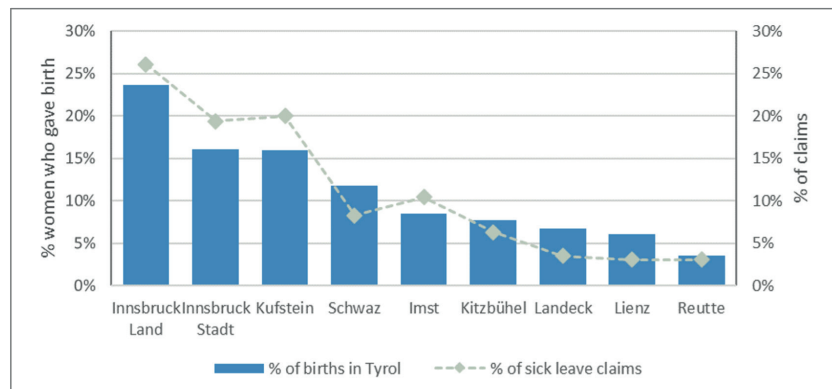


Figure 4-21. Comparison of the distribution of births (n = 11,192) to the distribution of sick leave claims across Tyrolean districts in 2017 and 2018.

5 Discussion

Summary and interpretation of findings

In this report, we analysed mental health benefit use data from ÖGK-insured women who gave birth between 2017 and 2018. About a quarter of the study population received at least one benefit during the three analysed life event periods, and, more specifically, 18% received benefits during the perinatal period. The benefit claimed most often was psychotherapy by itself, followed by psychotherapy in combination with community-based psychiatrist services. Hospital services were used the least overall.

Benefit claims were highest one year before pregnancy and decreased with the onset of pregnancy for all but the hospital benefit, where the pattern was reversed. After giving birth, the number of claims increased again but did not reach the same amount as before pregnancy. Again, we did not observe this pattern for hospital claims, which decreased after giving birth. Further, most benefits were used by more than half of the benefit recipients during only one period, indicating little overlap of individual service recipients between periods.

The uptake of benefits during the perinatal period in Austria is in line with international figures on the prevalence of PMI [1-9]. However, our data does not cover hospital outpatient care use, uptake of fully privately paid services and services not funded by the health insurance (e.g., psycho-social services). Hence, we can assume that the actual uptake of mental health benefits is higher than our figures suggest and may, therefore, exceed international prevalence data. The uptake of services is in contradiction to the low or lacking availability of specially trained professionals such as perinatal mental health midwives or psychiatrists with special training [24], raising the question of whether appropriate care is available. The uptake of benefits also does not allow conclusions on whether treatment and care follow international perinatal mental health care standards and evidence-based guidelines.

The lower number of benefit claims during the pregnancy period could partly be explained by the shorter duration of the pregnancy period (9 months) compared to the 12-month period before, leading to a possible bias. Furthermore, in the case of medication, not all psychotropic drugs are approved for use during pregnancy. However, it remains unclear for some benefits (e.g., psychotherapy) why claims did not reach the before-pregnancy level after birth. On the contrary, this is to be expected for sick leave since very few women are in active employment after birth, and those on maternity leave cannot claim sick leave benefits.

The high percentage of women who claimed benefits in only one of the three analysed periods warrants a closer look on whether this is based on needs or a lack of appropriate continuity of care.

Services seem to be used disproportionately more by very young mothers or the oldest age group. For mothers below 21, this seems to be in line with the literature on risks for perinatal mental illness, which suggests an increased risk in teenage mothers [28]. Different reasons might exist for the higher usage in older mothers, such as higher awareness of mental illness, higher levels of distress due to complications or higher income and thus higher willingness to use privately co-funded services (e.g., psychotherapy). However, the latter

1 von 4 Frauen nahm mind. 1 der Leistungen in Anspruch, in Peripartalphase knapp 1 von 5

Anteil vor Geburt am höchsten, häufig nur in einer Phase Inanspruchnahme

Inanspruchnahme ähnlich wie internat. Prävalenzzahlen, allerdings viele Leistungen in Daten nicht enthalten

im Vergleich wenig Spezialangebote und ausgebildetes Personal

geringere Inanspruchnahme während Schwangerschaft durch kürzere Periode (9 Mo vs. 1 Jahr) mitbedingt

Versorgungskontinuität sollte geprüft werden

höhere Inanspruchnahme in jüngster Altersgruppe evt. wegen höherem Erkrankungsrisiko, bei älteren Frauen Ursache unklar

<p>Spitalsaufnahmen in allen Ländern, jedoch nur in 3 Ländern reguläre Mutter-Kind Betten</p>	<p>is only partly supported by our data on psychotherapy and community-based psychiatrist service use with private co-payments in older women. Further, since only a minority of women were either in the youngest or in the oldest age groups, differences in uptake should be further examined.</p>
<p>Frauen mit Krankenhausaufnahmen nehmen oftmals keine weitere Leistung in Anspruch</p>	<p>Almost 700 women in the observation period 2017-2018 were in hospital care in the first year after giving birth with either a primary or secondary ICD-10-F diagnosis. When considering only primary diagnoses, the number was ~500. Admissions took place in all nine Austrian states. As only ten regular mother-baby beds are available across three states [24], many mothers would have been admitted without their babies and treated by general mental health care staff.</p>
<p>könnte auf fehlende integrierte Versorgung hindeuten, da in Erwachsenen-psychiatrie follow-up ansonsten üblich</p>	<p>In adult mental health care, follow-up services are usually in place after a psychiatric hospital admission. In our analysis, 70 % of women admitted to hospital care with an ICD-10-F diagnosis during pregnancy did not receive another benefit. After birth, every fifth woman was not receiving a benefit beyond hospital care. Although those percentages are substantially lower when considering claims with primary diagnoses only, there is still a certain percentage of women who did not use any other service we analysed. Since the median hospital stay was five days (7 days in case of discharges with primary diagnoses), it seems unlikely that the mental health problem was stabilised entirely at discharge in all women. This service use pattern may therefore indicate a gap in integrated care and a lack of care pathways. However, some women may have used a service not covered in our data (e.g., hospital outpatient unit, general practitioners).</p>
<p>vielfach keine längere Psychotherapie</p>	<p>Regarding the intensity and duration of psychotherapy treatment, the median number of two psychotherapy visits suggests that half of the women did not undergo an in-depth therapeutic process but seemed to have received only a short-term assessment.</p>
<p>hoher Anteil an kassenfinanzierter Therapie könnte auf niedrige Bereitschaft für private Zuzahlung hinweisen</p>	<p>Quite a high proportion of contacts with a community-based psychiatrist and even more with a psychotherapist were fully publicly funded, yet with some regional differences. This suggests a low willingness for private co-payment. However, psychotherapy claims are incomplete in our data, and there may be a higher uptake of privately co-funded psychotherapy in reality. Furthermore, women may pay services fully privately, which is not covered in our data.</p>
<p>trotz berichteter Versorgungslücken, hohe Inanspruchnahmeraten</p>	<p>A ‘Frühe Hilfen’ report from 2022 demonstrated difficulties in referring parents in whom they detect a mental health problem to appropriate mental health care services, and gaps in care were observed. Less than a quarter of families needing psychologist/psychotherapy services were actively referred to such a service, and only a fifth used them. Different reasons for the lack of referral or use of services were given (e.g., lack of capacities, waiting lists, costs), which was frequently the family’s lack of acceptance [29]. However, our results show that many women in the observed population use those services despite the above-described barriers. This discrepancy may be because these are mostly self-referrals or the referral problems described above only exist in some regions. Further, referrers observing barriers may lack the knowledge of available services, or the overall capacities may be too low.</p>
<p>vielen Frauen wurden ausschließlich Psychopharmaka verschrieben, bei Behandlung peripartaler Erkrankungen auch andere Therapien relevant</p>	<p>Some 40 % of women prescribed psychotropic drugs during pregnancy, and 46 % who used them after birth did not receive any other of the five mental health benefits covered in our data. Although this is similar to observations in the general population, where roughly half of service recipients only use psychotropic drugs and no other benefit [30], it is still surprising that medication is not combined with psychotherapy or community-based psychiatrist visits more often when a mental health problem appears in</p>

the perinatal period. International guidelines emphasise the importance of integrated care for women on medication, for example combining medication with psychological interventions [e.g., 31, 32-34]. Medication may reduce the symptoms, but other forms of support could directly address the relationship between the mother and the baby or the partner who may be affected, which is a crucial component of perinatal and infant mental health care [e.g., 33].

Furthermore, 44 % of women on sick leave with a mental illness did not use any other benefit. Some of them may have used services not covered in our data. However, likely, several do not receive nor seek treatment. One reason may be that the diagnoses in the sick leave data are not based on a thorough diagnostic procedure and may, therefore, be of limited validity, only partly reflecting the actual occurrence of diseases.

Our results show regional differences regarding hospital services, contacts with community-based psychiatrists and psychotherapy. Regarding psychotherapy, this is likely due to a data artefact. As described in the method section (see 3.1), not all psychotherapy contacts are included in the data. Higher or lower frequencies in some states may, therefore, to some extent, be explained by differences in financing (leading to unequal representation of service use in our data) rather than by true differences in uptake. Concerning differences in hospital use, these may partly be due to differences in coding of diagnoses between states, particularly secondary diagnoses. Additionally, provider- and supply-related factors and demand-side factors may influence hospital admissions, such as the availability of mother-baby units and specially trained hospital mental health care staff or differences in user preferences. For example, one reason for the lower proportions of hospital inpatient users in Vienna might be that – in contrast to the other Austrian states – there is a specialist hospital outpatient unit available in Vienna. However, since absolute numbers of hospital admissions are generally low, relative differences must be interpreted cautiously. Similar supply- or demand-side factors may explain regional differences in community-based psychiatrist consultations, such as different numbers of available psychiatrists across states.

Compared to the national figures, a considerably higher percentage of women who gave birth in Tyrol used at least one type of benefit during the perinatal period (25 % vs. 18 %). However, this difference seems almost entirely driven by higher psychotherapy service uptake, while the uptake rates do not differ much for other benefits. As mentioned earlier, whether this is due to a data artefact (underrepresented psychotherapy use in other states) or a higher utilisation of psychotherapy in Tyrol is unclear.

Data also showed within-state variations in Tyrol, which differed for each type of benefit regarding the extent of variation and the districts with lower and higher uptake. The benefit with the most regional variation was psychotherapy, with a more than 20 %-point difference between the district with the lowest (Kitzbühel) and that with the highest proportion of women using psychotherapy (Schwaz). As is the case for Austria overall, psychotherapy data are incomplete in Tyrol. Variations can, therefore, be a data artefact. However, claims data for the other benefits are complete, and the differences in uptake have different reasons. Like the differences between states, regional differences within Tyrol can be supply-induced, such as regional differences in the number of available psychiatrists and hospital beds or regionally different standards of care. They may also be demand-related, such as regionally varying preferences or possibilities for women seeking treatment.

Teil der arbeitsunfähigen Frauen nahmen keine andere Leistung in Anspruch, evt. Diagnosen nicht valide

regionale Unterschiede bei Psychotherapie tlw. Datenartefakt

bei Krankenhausdaten evt. Codierungsunterschiede,

nachfrage- oder angebotsseitige Faktoren können regionale Unterschiede bedingen

höhere Inanspruchnahme in Tirol durch Psychotherapiedaten bedingt, daher wahrscheinlich Datenartefakt

Unterschiede innerhalb Tirols können verschiedene Ursachen haben

Inanspruchnahmeraten ähnlich wie in einer Schweizer Studie	Finally, the uptake of mental health services in Austria was comparable to data from Switzerland, where around 17 % of perinatal women used mental health services [35]. In contrast to our results, medication was the most frequent treatment during the perinatal period in Switzerland. The study's authors also noted a drop in service uptake with the onset of pregnancy and an uptake in the year after birth.
viele Leistungen, die bei psychischen Belastungen zur Verfügung stehen, in Daten nicht abgebildet	<p>Limitations</p> <p>Our analysis has several limitations. First, our data does not cover all mental health services that could be used. One reason for this is that for some insurance-funded services, no data is available. This is the case for hospital outpatient services and general practitioner (GP) contacts due to a mental health problem (because diagnoses are not documented during GP contacts). Also, some services are not funded by the health insurance, such as psychosocial services, which are paid out of state-government taxes. Furthermore, some services are entirely privately paid (e.g., because patients did not claim a partial refund after visiting a 'Wahlärzt*in' or decided to pay fully privately) and are therefore not listed in administrative claims data. While we cannot quantify the data gap, we can expect from general population use that some services, such as hospital outpatient mental health care, are utilised frequently.</p>
für einige Leistungen Daten unvollständig	A second limitation is that for some services, data on uptake are incomplete. This is the case for:
Psychotherapie	<ul style="list-style-type: none"> a. psychotherapy contacts: our data only cover contacts where providers are reimbursed per patient, but some psychotherapy services are funded in other ways, e.g., lump sums.
Psychopharmaka	<ul style="list-style-type: none"> b. medication use: some drugs used to treat mental illness are also used to treat other types of ailments, e.g., epileptic seizures; we excluded those medication uptake data because we would not have been able to identify whether the reason for prescription was a mental illness or another health problem. Furthermore, the data cover prescriptions. We do not know whether women took the medications prescribed. Finally, drugs with a price below the prescription fee are not covered except for people with an exemption from the prescription fee.
Krankenstände	<ul style="list-style-type: none"> c. sick leave: in the eight weeks before and after birth and during maternity leave (which most women take during the first year after childbirth), any illness that may appear is not documented as sick leave. It is, therefore, not surprising that the proportion of women with an ICD-10-F sick leave diagnosis is lower in the period after birth than before.
Daten anderer Sozialversicherungsträger nicht enthalten	Thirdly, the data only cover ÖGK-funded services. About 20 % of the Austrian population is insured by other social health insurance funds. Absolute numbers of service uptake will, therefore, be underestimated. Still, we expect that proportions (also regarding age groups and differences between states) will not differ much, as shown in the comparison with Austrian population figures on births (see 4.1).
in Summe eher Unterschätzung der Inanspruchnahme	These limitations indicate that the data underestimates the true uptake of mental health benefits.
nur erste Geburt, die in Untersuchungsperiode fällt, berücksichtigt	Another limitation was that second and multiple births during 2017 and 2018 might have biased the results, for example, linking certain claims to a post-partum period when a woman was already pregnant with the next child. However, the number of such births is low, and the possible effects are limited.

Furthermore, as addressed in the introduction, some women with perinatal mental health problems may not seek support at all [21-23]. The data, therefore, does not allow us to conclude on the epidemiology of perinatal mental health problems in Austria or unmet needs.

Additionally, administrative data are collected for purposes other than research. In our case, they are primarily used for reimbursing service provision. Therefore, some of the information in the data may be of limited clinical validity. For example, the diagnoses in the hospital admission data are documented for reimbursement purposes and are not based on a clinical diagnostic procedure. Diagnoses in sick leave data are also not based on an in-depth diagnostic procedure.

Finally, while there are guidelines for documenting secondary diagnoses in hospital admissions, there is some scope, leading to different degrees of precision and how extensively secondary diagnoses are documented. The different ratios of main and secondary ICD-10-F diagnoses in Tyrol and Austria could, therefore, be due to less frequent documentation of mental illness as a secondary diagnosis in Tyrol. A way to deal with this uncertainty would be to restrict the analysis to only admissions with primary ICD-10-F diagnoses. However, mental health problems around birth will very likely, in most cases, be documented as secondary diagnoses because the main reason for admission is the delivery. By excluding admissions with a secondary diagnosis, we would have missed mothers with reported mental health issues during their stay around giving birth.

**Inanspruchnahme
≠ Prävalenz**

**administrative
Daten nicht für
Forschungszwecke
erhoben, klinische
Validität daher tlw.
limitiert**

**Spielraum bei
Dokumentation von
Nebendiagnosen kann zu
Verzerrungen führen**

6 Conclusion

**Bericht untersuchte
Inanspruchnahme
von 5 ÖGK-Leistungen
vor und während der
Peripartalperiode**

International data show that mental illness is one of the most prevalent health problems during pregnancy and after birth. The literature also demonstrates that service use is often lower than the number of parents diagnosed with a PMI might suggest. In this report, we analysed the use of five core mental health benefits funded by the Austrian health insurance in a two-year cohort of women who gave birth in 2017 or 2018. We investigated service use one year before and during the perinatal period.

**in Anbetracht vieler
Barrieren hohe
Inanspruchnahme von
Leistungen**

Almost one in five women used at least one type of benefit during the perinatal period. One in four women claimed a benefit before or during the perinatal period. The perinatal uptake proportions correspond to international prevalence data. In view of the fact that only some of the available services were included in our analysis and the general hesitancy to seek help for mental health problems during the perinatal period reported by experts and in the literature, the uptake rates can be classified as high.

**angesichts fehlender
Spezialangebote,
Investition in Ausbildung
und Infrastruktur nötig**

These new insights on the proportion of Austrian women using mental health benefits during the perinatal period and the knowledge from previous research on existing gaps in specialised care infrastructure and perinatal mental health staff suggest that investment in education and training as well as appropriate care facilities is a key priority for improving perinatal and infant mental health care in Austria.

**Inanspruchnahme
in verschiedenen
Settings → integrierte
Versorgung wichtiges
Thema bei weiterem
Ausbau**

Furthermore, our results show that women use services in different settings and care levels (hospital and community). The coordination challenges this usually results in [24] indicate that integrated care and providing orientation for women and referrers are topics to be addressed in developing perinatal and infant mental health care further. The relevance of those topics is also supported by the high proportion of women using services in only one of the observed periods.

**genauerer Blick, ob
Versorgung gegeben,
wenn bereits vor
Schwangerschaft
erkrankt**

Although the fewer benefit claims during pregnancy compared to one year before may be a methodological artefact, we suggest a closer look at whether women with mental health problems are cared for based on evidence-based standards once they become pregnant to avoid inappropriate termination of treatment.

**sobald Screening im
Eltern-Kind-Pass,
mehr Bedarf für
Angebote zu erwarten**

So far, no standardised screening for PMI has been performed in Austria, but there are currently negotiations to include such a screening into the national screening program during pregnancy and early childhood ('Eltern-Kind-Pass'). Once implemented, we can expect an increasing need for services for treatment and support. Given the current frequency of utilisation of mental health services, existing capacities are likely inadequate to meet a higher demand.

**Thema sollte politisch
priorisiert werden**

All in all, our findings and the international evidence confirm the need for giving perinatal mental health a high health policy priority. [36]

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8 Appendix

8.1 Comparison ÖGK-data and Austrian birth data

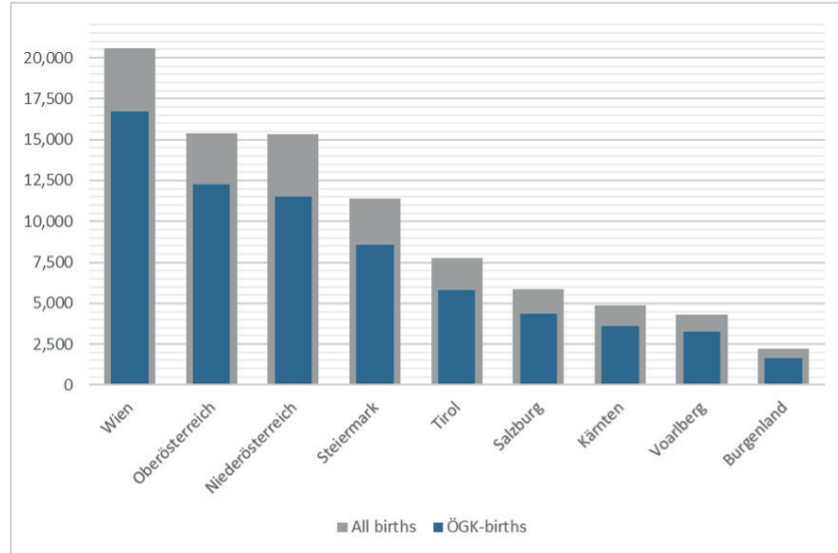


Figure 8-1. Comparison between all women in Austria who gave birth ($n = 87,633$) and the ÖGK-insured women who gave birth in 2017, by state of residence.

Source: Statistik Austria [36]

8.2 Overview of claimed benefit patterns

Table 8-1. Overview of benefit claim patterns in descending order of frequency.
Letters denote: K – Hospital benefits; F – community-based psychiatrist benefits; P – Psychotherapy benefits; A – Sick leave benefit; H – Pharmaceutical benefits; x – Is used as a placeholder for not claiming a benefit.

	Frequency (n = 32,341)	Percentage (%)
xxPxx	10,248	32
xFPxx	5,269	16
xxxxH	2,594	8
xxxAx	2,272	7
xFxxx	2,163	7
xFPxH	2,132	7
xxPxH	1,396	4
Kxxxx	1,329	4
xxPAx	736	2
xFPAH	706	2
xFPAx	523	2
xxxAH	443	1
xxPAH	402	1
KFPxH	309	1
KFPAH	260	1
KxxxH	257	1
KxPxH	229	1
KxPAH	199	1
KxPxx	166	1
xFxxH	130	0
KxxAx	120	0
KFPxx	108	0
KxxAH	104	0
xFxAx	70	0
KxPAx	52	0
KFPAx	40	0
KFxxx	38	0
xFxAH	27	0
KFxxH	13	0
KFxAx	3	0
KFxAH	3	0



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