Individualisation, personalisation and person-centredness in mental healthcare: a scoping review of concepts and linguistic network visualisation

Gwendolyn Mayer 1, Ali Zafar1,2, Svenja Hummel1, Felix Landau1, Jobst-Hendrik Schultz1

ABSTRACT
Background Targeted mental health interventions are increasingly described as individualised, personalised or person-centred approaches. However, the definitions for these terms vary significantly. Their interchangeable use prevents operationalisations and measures. Objective This scoping review provides a synthesis of key concepts, definitions and the language used in the context of these terms in an effort to delineate their use for future research. Study selection and analysis Our search on PubMed, EBSCO and Cochrane provided 2835 relevant titles. A total of 176 titles were found eligible for extracting data. A thematic analysis was conducted to synthesise the underlying aspects of individualisation, personalisation and person-centredness. Network visualisations of co-occurring words in 2625 abstracts were performed using VOSViewer. Findings Overall, 106 out of 176 (60.2%) articles provided concepts for individualisation, personalisation and person-centredness. Studies using person-centredness provided a conceptualisation more often than the others. A thematic analysis revealed medical, psychological, sociocultural, biological, behavioural, economic and environmental dimensions of the concepts. Practical frameworks were mostly found related to person-centredness, while theoretical frameworks emerged in studies on personalisation. Word cooccurrences showed common psychiatric words in all three network visualisations, but differences in further contexts. Conclusions and clinical implications The use of individualisation, personalisation and person-centredness in mental healthcare is multifaceted. While individualisation was the most generic term, personalisation was often used in biomedical or technological studies. Person-centredness emerged as the most well-defined concept, with many frameworks often related to dementia care. We recommend that the use of these terms follows a clear definition within the context of their respective disorders, treatments or medical settings. Scoping review registration Open Science Framework: osf.io/uatsc.

WHAT IS ALREADY KNOWN ON THIS TOPIC
⇒ The number of publications in mental health research using the terms individualisation, personalisation and person-centredness has increased substantially.
⇒ The terms are used interchangeably and conceptual distinctions are missing.
⇒ Former reviews have already focused on the term person-centred care, which in turn was launched by several governmental initiatives.

WHAT THIS STUDY ADDS
⇒ This review provides a synthesis of underlying concepts and frameworks used in recent scientific literature for each of these terms: individualisation, personalisation and person-centred care.
⇒ The concept of personalisation oftentimes refers to biomedical or data-driven approaches.
⇒ Person-centredness has been conceptualised more often than the other terms and is used frequently in the context of dementia care.
⇒ Linguistic network visualisation maps were created for each of the three terms using the bibliometric analysis software VOSViewer.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY
⇒ Our results are useful in determining conceptual distinctions between individualisation, personalisation and person-centredness in mental health research.
⇒ We recommend using the terms in a well-defined way within the context of their respective disorders, treatments or medical settings.
⇒ This will facilitate the assessment to what extent individualisation in mental healthcare has been achieved in different care settings and in which areas improvements are still needed.

INTRODUCTION
Finding the most effective treatment for every patient with his or her personal disposition is an ongoing challenge in healthcare. This is especially the case for mental disorders, where biological, social and psychological conditions form a unique combination of symptoms and their individual aetiology. While the importance of tailoring treatments to individual patients was recognised in ancient Greek, Indian and Chinese medical systems, personalised medicine has gained significant attention once again in the past two decades. Until the mid-20th century, treatment plans were made following the ‘art of medicine’ philosophy based on...
humanitarian and spiritual values, which was mostly replaced in the later decades by evidence-based medicine, prioritising scientifically and empirically grounded clinical practice based on population averages and generalised guidelines. Further advancements in molecular biology, genomics and other medical technologies have enabled researchers and clinicians to understand the underlying mechanisms of diseases, allowing even more accurate diagnosis and identification of genetic markers to predict individual responses.

Current biomedical approaches that aim at "phenotyping" individuals on the level of biomarkers and diagnostic tests to detect predictors and moderators of mental diseases are often referred to as "personalised" or "precision medicine." Both terms are sometimes used synonymously, while some authors argue that the concepts build on each other. With the advancement of mobile technology, a new area of research focuses on digital behaviour for assessing mental states, the so-called "digital phenotyping." Data-driven diagnostics such as the Research Domain Criteria (RDoC) project launched by the National Institute of Mental Health or artificial intelligence algorithms in turn target at disease modelling and claim to enable physicians to make better decisions at the level of the single help-seeking person.

Ethical concerns have been raised that the title personalisation covers the fact of reducing a person to diagnostic markers. A too strong focus on genetic and molecular biology might lead the practice even further away from truly personalised care. Moreover, personalised approaches are associated with stratified drugs by whole-genome sequencing that, in turn, challenge health equity and justice in distribution. The context of drug treatments has been chosen as early as 2014 in a previous review by Denford et al. The authors reviewed existing concepts in pharmacology and suggested the term "mutually agreed tailoring" instead of "individualising" drug treatments, as they tried to encompass the patient perspective for whom the treatment is personalised. Two years later, Cesuroğlu et al. published a content analysis on the practices of personalisation in healthcare and found biomedicine and pharmacogenetics as among several implementation models targeting personalisation.

An emerging trend can be observed in various approaches to "person-centred" care, driven by health policy initiatives for example in the USA, the UK and by the WHO. As early as 2000, Mead and Bower had reviewed the concepts of patient-centredness in the literature, which was followed up by Morgan and Yoder in 2012 and by Langberg et al in 2019. However, both reviews focused on aspects of organisational values, doctor-patient relationship and interprofessional care. As such, they did not consider personalisation or individualisation of treatment options.

Despite the development of various targeted pharmacotherapies, treatment approaches and therapeutic methods, gaps still exist between research and practice, as well as treatment offers and patient care. This makes it difficult to assess to what extent individualisation in mental healthcare has been achieved. In the absence of a distinct conceptualisation, operationalisation of research designs investigating the effects of person-centred or personalised treatment plans remains limited.

Research question
To sum up, a plenty of overlapping terms apparently shape the current literature, ranging from individualisation and personalisation to terms with a strong biomedical focus such as precision medicine or phenotyping, both of which are already well defined. Next, treatment options that are described as tailored, stratified or targeted relate to pharmacological concepts. Person-centred care, finally, is a term closely connected to clinical practice. The highest need for a clearer conceptualisation of overlapping terms that are relevant for both mental health practitioners and for developing measures emerges in the case of individualisation, personalisation and person-centredness.

A comprehensive study investigating the key concepts of personalisation, individualisation and person-centredness in current mental health research is missing so far. A deeper analysis of these terms, including recommendations for their usage, could provide more robust concepts and stronger consistency for research and practice. Therefore, this scoping review aims to provide a map of concepts, definitions and frameworks of these three key terms that have been applied so far in recent literature on mental healthcare to find out what degree of sophistication for each term has been achieved and in which areas of application these concepts have been used.

METHODS
A scoping review was conducted following the recommendations of Levac et al., who enhanced the framework of Arksey and O’Malley regarding the methodology of scoping studies. The study was preregistered in the Open Science Framework. The original framework consists of five mandatory steps and one optional step, which are (a) identifying the research question, (b) identifying relevant studies, (c) study selection, (d) charting the data, (e) collating, summarising and reporting the results, and (f) consultation. Step (a) has been addressed in the introduction of this article. Step (f) was not relevant to the aims of this study. Nevertheless, the expected outcomes may be used by stakeholders in the development of future guidelines specific to single disorders, treatments or medical settings.

Identifying relevant studies
We searched the three main databases of PubMed, EBSCO (including APA PsycInfo, APA PsycArticles, CINAHL, PSYNDEX Literature with PSYNDEX Tests) and Cochrane. The results were limited to studies published in a peer-reviewed journal in English or German language in the past 10 years, that is, between 1 January 2012 and 31 December 2021. Primary research articles, reviews, Overviews and book chapters were included. Dissertations, editorials, conference papers, commentaries, etc were excluded. Papers were also excluded if they were not available online.

The search terms consisted of keyword combinations of individual*, personali* and person-cent* (in order to include both spellings in American and British English) with different words targeting mental health treatment or care, respectively. The results were limited to studies published in a peer-reviewed journal in English or German language in the past 10 years, that is, between 1 January 2012 and 31 December 2021. Primary research articles, reviews, Overviews and book chapters were included. Dissertations, editorials, conference papers, commentaries, etc were excluded. Papers were also excluded if they were not available online.

Study selection
Our preliminary search resulted in 3674 entries, which were imported in EndNote (vX7). After software-based deduplication and manual application of exclusion criteria, 2835 articles were obtained. A title search with the three key terms in EndNote gave us 250 relevant titles. After abstract and full-text screening, we excluded 74 articles following exclusion criteria and missing availability. Finally, 176 studies were eligible for descriptive and thematic analyses. Figure 1 provides the PRISMA-ScR (preferred reporting items for systemic reviews and meta-analyses extension for scoping reviews) flow diagram for the selection and screening process.
Charting the data
The selection and charting process was done iteratively by our team, ensuring that all results were checked by at least two authors. Each of the 176 papers was screened by at least two authors (GM, AZ, SH, FL) in the full texts to find concepts and definitions for the terms individualisation, personalisation and person-centredness. In case of different views, consensus was reached by the whole team. The charting form included categories and subcategories, which are listed in table 1.

Collating, summarising and reporting the results
Descriptive analysis
Descriptive analysis with frequencies and percentages was carried out for the main categories of the charting form.

Thematic analysis
Any definition of the concepts and the respective quotes found in each study were collated as qualitative data. These fragments of text were analysed qualitatively by two authors (GM and AZ) using thematic analysis with MAXQDA. The objective was to report the underlying aspects used in the literature and to look for conceptual differences among the terms.

Our thematic analysis resulted in seven reoccurring aspects that were interpreted as the conceptual dimensions/themes:

► Medical dimension: clinical aspects and patient support such as diagnostics, treatment and shared decision-making.
► Psychological dimension: all mental health aspects such as psychology, cognitive functioning and emotions.
► Sociocultural dimension: aspects of social, personal and cultural influences on individuals.
► Biological dimension: physical aspects such as demographics, genetics or phenotypic data.
► Behavioural dimension: aspects of personal behaviour such as sleep patterns, diet or substance use.
► Economic dimension: financial aspects such as income or budgets.
► Environmental dimension: climate or environmental influences.

Each theme, except the economic and environmental dimensions, was subcoded. The details of the coding scheme with

Figure 1  PRISMA chart for study selection. PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.
definitions and supporting quotes are provided in online supplemental file 2. Since qualitative data analysis is subjective to individual interpretation, there were several overlapping aspects that could be categorised in different dimensions. However, both data analysts (GM and AZ) revised their thematic codes in several rounds to reach consensus and ensure reliability. The core dimensions were ranked according to the most prevalent dimension of each term. The three most important dimensions were reported at minimum for each term. Moreover, already established definitions for the concepts of personalisation, individualisation and person-centred care were categorised according to the degree of sophistication, as follows:

- **Frameworks**: widely recognised theoretical and practice-oriented concepts.
- **Models**: established theoretical concepts in certain countries or organisations.
- **Protocols/methodology**: operational guides currently discussed in the literature.
- **Proposals**: concepts proposing a new practice model.

We have included only the most prominent frameworks for each term in the results. All other frameworks, models, protocols and proposals are presented in online supplemental file 3. For further clarity, figure 2 illustrates the hierarchy of the concepts used in this paper.

**Network visualisation of co-occurring words**

The remaining papers were used for network visualisation of co-occurring words within the abstracts and titles for each of the three terms. Of the 2761 articles, we excluded another 136 as the terms did not occur in the abstracts but only in the bibliometric data. After this step, 2625 titles were selected for bibliometric data. After this step, 2625 titles were selected for network visualisation with VOSViewer, with 1004 papers occurring words within the abstracts and titles. The words were included. All words are displayed in circles and their closeness indicates their relatedness to other words used within the abstracts and titles. The words were categorised into three functional clusters by VOSViewer that are displayed in different colours.

**RESULTS**

**Descriptive analysis**

Of the 176 reviewed studies, 35 (19.9%) were related to individualisation, 79 (44.9%) to personalisation and 62 (35.2%) to person-centredness. The number of publications increased considerably over the years, with 5 (2.8%) published in 2012 and 36 (20.5%) in 2021. The majority were published in Europe.

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**Table 1** Main categories and content of the data charting form

<table>
<thead>
<tr>
<th>Categories</th>
<th>Subcategories/content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metadata</td>
<td>Author, publication year, title, DOI</td>
</tr>
<tr>
<td>Country</td>
<td>Country of corresponding author (if not available, of first author)</td>
</tr>
<tr>
<td>Type of article</td>
<td>Primary research, review, book chapter</td>
</tr>
<tr>
<td>Methodology applied</td>
<td>Case study, meta-analysis, mixed methods study, overview, qualitative study, quantitative study, RCT mixed methods, RCT quantitative, scoping review, systematic review, narrative review</td>
</tr>
<tr>
<td>Term</td>
<td>Individualisation, personalisation, person-centredness</td>
</tr>
<tr>
<td>Scientific focus</td>
<td>Basic science, applied science, clinical science, theoretical</td>
</tr>
<tr>
<td>Main medical field</td>
<td>For example: psychiatry, geriatrics, clinical psychology, public health</td>
</tr>
<tr>
<td>Disorder</td>
<td>If targeted at one specific disorder (eg, depression, dementia)</td>
</tr>
<tr>
<td>Concept or definition provided*</td>
<td>Yes, no</td>
</tr>
<tr>
<td>Included aspects</td>
<td>Description of aspects that were part of the concept (eg, gender, biomarkers, personal values)</td>
</tr>
<tr>
<td>Quote</td>
<td>Direct quotation</td>
</tr>
</tbody>
</table>

*Of individualisation, personalisation or person-centredness. RCT, randomised controlled trial.

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**Table 2** Main characteristics of the reviewed studies

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>Frequency (n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term</td>
<td>Individualisation</td>
<td>35</td>
<td>19.9</td>
</tr>
<tr>
<td></td>
<td>Personalisation</td>
<td>79</td>
<td>44.9</td>
</tr>
<tr>
<td></td>
<td>Person-centredness</td>
<td>62</td>
<td>35.2</td>
</tr>
<tr>
<td>Year of publication</td>
<td>2012</td>
<td>5</td>
<td>2.8</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>11</td>
<td>6.3</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>9</td>
<td>5.1</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>16</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>2016</td>
<td>14</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td>14</td>
<td>8.0</td>
</tr>
<tr>
<td></td>
<td>2018</td>
<td>20</td>
<td>11.4</td>
</tr>
<tr>
<td></td>
<td>2019</td>
<td>23</td>
<td>13.1</td>
</tr>
<tr>
<td></td>
<td>2020</td>
<td>28</td>
<td>15.9</td>
</tr>
<tr>
<td></td>
<td>2021</td>
<td>36</td>
<td>20.5</td>
</tr>
<tr>
<td>Continent of corresponding author*</td>
<td>Asia</td>
<td>12</td>
<td>6.8</td>
</tr>
<tr>
<td></td>
<td>Australia</td>
<td>16</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>79</td>
<td>44.9</td>
</tr>
<tr>
<td></td>
<td>North America</td>
<td>62</td>
<td>35.2</td>
</tr>
<tr>
<td></td>
<td>Others (Africa, Middle East, South America)</td>
<td>7</td>
<td>4.0</td>
</tr>
<tr>
<td>Type of article</td>
<td>Primary research</td>
<td>118</td>
<td>67.0</td>
</tr>
<tr>
<td></td>
<td>Review</td>
<td>55</td>
<td>31.3</td>
</tr>
<tr>
<td></td>
<td>Book chapter</td>
<td>3</td>
<td>1.7</td>
</tr>
<tr>
<td>Scientific focus</td>
<td>Basic science</td>
<td>9</td>
<td>5.1</td>
</tr>
<tr>
<td></td>
<td>Applied science (without patients)</td>
<td>42</td>
<td>23.9</td>
</tr>
<tr>
<td></td>
<td>Clinical science (with patients)</td>
<td>90</td>
<td>51.1</td>
</tr>
<tr>
<td></td>
<td>Theoretical</td>
<td>35</td>
<td>19.9</td>
</tr>
</tbody>
</table>

*If not available, then first author.
and North America, and a major share was identified as primary research. The study characteristics are presented in table 2.

Out of 176 articles, 106 (60.2%) provided a conceptualisation or at least a definition of the respective term individualisation, personalisation or person-centredness. Individualisation was defined in 10 studies (28.6%), personalisation in 46 (37.5%) and patient-centredness in 50 (82.0%) articles.

Overall, 84 articles (47.7%) were related to a specific disorder, with a major share (26) on depression and/or anxiety (2631.0%), 17 on psychosis (20.2%) and 9 (10.7%) on dementia. Other somatic disorders were discussed in 10 (11.6%) papers, and other mental disorders (bipolar, attention deficit hyperactivity disorder, autism spectrum disorder, etc) were discussed in 24 (26.2%) studies.

### Thematic and linguistic analyses

#### Concepts of individualisation

A major share of the 10 studies that provided definitions or conceptualisations of ‘individualised’ treatment or care was related to psychosis or neurodevelopmental disorders, such as ADHD and autism spectrum disorders. Thematically, the definitions included concepts of the psychological and behavioral dimensions, closely followed by the medical and sociocultural dimensions. No dimension was observed to be predominant.

The behavioural dimension of individualisation discussed individual lifestyle interventions for behavioural changes, for example, targeting the prevention of cardiovascular diseases in patients with psychosis or in women with obesity. The psychological dimension focused on mental and cognitive functioning and specific symptoms of mental health, for example, in the case of a programme for children:

- An Individualised Mental Health Intervention for ASD (AIM HI) clinical intervention and corresponding therapist training protocol were developed. The AIM HI protocol was developed based on a systematic needs assessment of the clinical needs of children with ASD receiving MH services and the training needs of MH therapists. (ASD, autism spectrum disorders; MH, mental health)

Moreover, in one study, the role of the individual was contrasted to collectivist values observed in Asian cultures. Recognising personhood and the uniqueness of the individual was interpreted here as part of the sociocultural dimension:

- Therefore, one’s own thoughts, feelings and interests play the most significant role in defining their goal-directed behaviours and decisions; and not those of the group they are members of (eg, family, religious community).

### Frameworks of individualisation

In the studies defining individualisation, only one framework was found related to this term. The concept of psychotherapy by Carl Rogers originally had the title of person-centred or client-centred therapy.

### Co-occurring words of individualisation

In the 1004 abstracts referring to the keyword individualisation, 24,970 words were found and 321 words were included in the network visualisation. As shown in figure 3, abstracts focusing on individualisation show words related to the care system, with programmes, services, exercises and interventions in one cluster (green), gynaecological terms in the blue cluster, and psychiatric terms such as major depression, symptoms, biomarkers and adolescence in the red cluster.

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**Figure 3** Co-occurrences of words used in 1004 titles and abstracts of studies on individualisation. CAMH, child and adolescent mental health; EBP, evidence-based practice; IDPD, intellectual disability co-occurrent with psychiatric disorders; MTBI, mild traumatic brain injury; PTSD post-traumatic stress disorder.
Concepts of personalisation

A total of 20 out of 46 papers conceptualising personalisation were related to a specific mental disorder, mostly depression. The term ‘personalised’ was shaped by the medical dimension to a certain extent as the most prominent aspects were related to diagnostics, such as personalising an intervention through assessment methods, digital phenotyping or individual predictors of a disease. The medical dimension also included specific treatment concepts, such as triage, monitoring or individual treatment responses. Cuijpers et al. pointed out the prevalence of medical but biological aspects of the concept as well in the context of depression:

And if we really want to develop personalised treatments of depression, we should not only look at individual characteristics of patients and treatments, but also on combinations of characteristics, such as older adults with atypical depression and a specific biomarker. Furthermore, we may want to look at other outcomes, such as side effects of medications, long-term outcomes, patient preferences, and prediction of treatment dropout.

Treatment-related concepts often referred to the advantage of using new technologies, such as e-mental health applications supported by real-time data collection via mobile phones for the benefit of targeted interventions. Some often discussed aspects of the medical dimension were individual health needs, as discussed for example in the context of personalised care planning in line with patients’ preferences and needs.

Concepts of personalisation were also characterised under the biological dimension, especially in articles referring to personalising treatments through biomarkers and gene sequencing. The psychological dimension was the third prominent category of concepts, with the patient and her or his individual cognitive functions, symptoms of mental health, and preferences and needs in the foreground of considerations:

In psychiatry, the term ‘personalised’ applies to different levels of health-care provision, such as the service organization (accessibility, flexibility, scalability) and the implementation of treatment plans based on the characterization of the individual patient (psychopathological characteristics, personal history including premorbid functioning, family history, individual preferences, environment and lifestyle, physical comorbidities, cognitive functioning, resilience).

Frameworks of personalisation

Some theoretical frameworks were found using personalisation in a standardised manner. The predictive preventive personalised medicine or the 3PM model related to an integrative concept in healthcare that aimed at predicting individual predisposition before the onset of a disease and providing tailored prevention and highly personalised treatments via algorithms. Another framework was the RDoC project initiated by the National Institute of Mental Health in 2009 with the aim of improving classification of mental disorders by research domains based on neurobiology and observable behaviour. Moreover, the Precision Medicine Initiative of the National Institutes of Health was cited in the context of personalisation; however, the study subsumed the term under ‘person-centredness’. One practical framework, the UK governmental initiative ‘Putting People First’ launched in 2007, was also cited, which focused on the introduction of personal budgets for adult and social care.

Co-occurring words of personalisation

A total of 1123 abstracts referred to personalisation with 27 980 words, out of which 388 were analysed in VOSViewer. Figure 4 illustrates the network visualisation of word co-occurrences found in articles on personalisation. Again, three clusters were formed, with similar psychiatric terms in the red cluster, treatment-related terms like technology, chatbot, engagement, feedback and adherence in the green cluster, and behavioural terms such as smoking, weight, activity, pain and remotely related occupational stress included in the blue cluster. Some of these terms were connected to ADHD and Alzheimer’s disease with related drugs.

Concepts of person-centredness

Most of the studies that provided definitions or conceptual aspects of person-centred care were related to dementia and depression and/or anxiety. The highest prevalence of these concepts was in the fields of psychiatry, clinical psychology and psychosomatics (see table 3). Thematically, person-centred care was categorised predominantly in the sociocultural dimension of care, with medical and psychological dimensions as the second and third most prevalently discussed aspects in the literature, respectively. The major conceptual focus of definitions was related to recognising the personhood and individual needs of the service users and shared decision-making between the individual and the caregivers. Within the sociocultural dimension, the concepts of person-centred care emphasised on recognising the individual as unique while providing individualised care and empowering the person for self-determination.

Person-centered medicine aims at the promotion of health and well-being of the totality of the person. The person is perceived as the center and goal of health care and the emphasis is shifted from patient to person.

In the medical dimension, the concepts focused more on the individual’s relationship and interactions with the caregivers for shared decision-making and the unique health needs and experiences of the person.

… a collaborative process between the person and his or her supporters (including the clinical practitioner) that results in the development and implementation of an action plan to assist the person in achieving his or her unique, personal goals along the journey of recovery.

In the psychological dimension, again the need for recognising the individual preferences and needs was emphasised in the literature, with additional focus on respecting the self-management abilities and autonomy of the individual.

… supporting people to recognize and develop their own strengths and abilities to enable them to live an independent and fulfilling life.

Some further concepts were categorised in the biological and behavioural dimensions, which are not discussed here (see online supplemental file 2). Additionally, in some papers, an economic dimension to person-centred care concepts was reported.

Frameworks of person-centredness

Most of the frameworks and models were found in the reviewed studies on person-centred care. Kitwood’s model, which we categorised as a theoretical framework, was the most prominent that described five dimensions of personhood. Some other frameworks for person-centred care in the studies were those provided by the US Institute of Medicine (2001), which defined it as

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‘providing care that is respectful of and responsive to individual patient preferences, needs, and cultural values and ensuring that patient values guide all clinical decisions’49; by the UK Health Foundation, which defined it as ‘a care system that supports us to make informed decisions, helps us to successfully manage our own health and care, and delivers care with respect for our individual abilities, preferences, lifestyles and goals’50; and McCormack’s person-centred practice framework ‘consisting of five domains of macro-context, prerequisites, care environment, person-centred processes, and person-centred outcomes’.51

Co-occurring words of person-centredness
A total of 498 abstracts were related to the term person-centredness with 12,312 words used, of which 206 were chosen for analysis. In figure 5, word co-occurrences in studies on person-centredness show many terms on dementia care, staff, nursing and service use in the red cluster. Psychiatric terms such as depression, anxiety, symptom or guideline, often related to youth and adolescence, are shown in the green cluster. Clinical terms like programme, visit, discharge or care home are shown in the blue cluster.

DISCUSSION
In this scoping review, the wide-ranging definitions and concepts used in recent literature to define the terms personalisation, individualisation and person-centred care in mental healthcare were mapped. We further created visualisation networks of word co-occurrences in relevant abstracts and titles to provide a deeper understanding of the use of language related to these three main concepts of targeted interventions. All terms shared a core set of common words that were closely related to psychiatric terminology.

Table 3

<table>
<thead>
<tr>
<th>Focus of medical field</th>
<th>Individualisation, n (%)</th>
<th>Personalisation, n (%)</th>
<th>Person-centredness, n (%)</th>
<th>All, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatic*</td>
<td>3 (8.6)</td>
<td>4 (5.1)</td>
<td>1 (1.6)</td>
<td>8 (4.5)</td>
</tr>
<tr>
<td>Mental†</td>
<td>20 (57.1)</td>
<td>54 (68.4)</td>
<td>27 (43.5)</td>
<td>101 (57.4)</td>
</tr>
<tr>
<td>Children and adolescents‡</td>
<td>5 (14.3)</td>
<td>11 (13.9)</td>
<td>4 (6.5)</td>
<td>20 (11.4)</td>
</tr>
<tr>
<td>Geriatrics</td>
<td>2 (5.7)</td>
<td>2 (2.5)</td>
<td>11 (17.7)</td>
<td>15 (8.5)</td>
</tr>
<tr>
<td>Others§</td>
<td>5 (14.3)</td>
<td>8 (10.1)</td>
<td>19 (30.6)</td>
<td>32 (18.2)</td>
</tr>
<tr>
<td>Total</td>
<td>35 (100)</td>
<td>79 (100)</td>
<td>62 (100)</td>
<td>176 (100)</td>
</tr>
</tbody>
</table>

*Including cardiology, endocrinology, gynaecology, nephrology and neurology.
†Including psychiatry, clinical psychology and psychosomatics.
‡Including child and adolescent psychiatry, and paediatrics.
§Including medical education, public health, nursing, preventive medicine and occupational medicine.
**Individualisation**

In our thematic analysis, individualisation emerged as the most generic term of usage for targeted interventions, as no thematic dimension was predominant. The hypothetical medical dimensions, that were obvious for the two other terms, did not prevail in the articles using the term individualisation. On the contrary, the respective studies referred to genuine psychological topics as well. Individualisation was used to describe the unique needs and preferences of a patient with his or her family history in the context of a certain disorder. In line with this, a German team suggested using the term ‘individualisation’ for psychotherapy research instead of ‘personalisation’, which, according to them, has a narrow biomedical focus on personalisation:

Since the patient is often reduced to molecular-biological constellations in approaches to personalised medicine, we advocate expanding this research paradigm in psychotherapy to include the concrete biographical individual with his or her unmistakable individuality, which of course includes the biological reality, but means the inclusion of the person as a whole.33 (translated by the authors)

In those cases where specific disorders were described in the reviewed studies, the focus was often neurodevelopmental or psychiatric with a respective treatment proposal. This was reflected as well in the network visualisation, where child and adolescent psychiatry was predominant, as well as words related to gynaecology, pregnancy and drugs. Some technical words co-occurred with ‘self-direction’ or ‘lifestyle interventions’. In line with this, our thematic analysis showed that individualisation was sometimes opposed to cultural values rather than focusing on the individual.

**Personalisation**

Most papers that defined personalisation used the concept in a biomedical context, aiming at the detection of predictors and moderators for specific disorders and their biomarkers and pharmacogenetic profiles. A majority of studies in the field of basic science (seven out of nine) provided a concept for personalisation. These studies often mentioned precision medicine as well, which is not a synonym but comprises a similar scope with a strong emphasis on biomedicine and statistics in providing exact predictors of diseases.52 Deif and Salama defined precision psychiatry as:

... a branch of precision medicine focused on enhancing prevention, diagnosis, and treatment of psychiatric disorders through identifying clinical subgroups in relation to specific disorders, identifying subgroups that may benefit from specific disorders, assessing the effectiveness of different interventions with different subgroups, and identifying risk and protective factors for remission, relapse, and vulnerability.53

Another share of articles described certain methodologies of statistical analysis for personalised care, such as latent class analysis or biometric models combining predictors and moderators into the so-called ‘personalised advantage index’ by Huibers and colleagues.54 On the other hand, new technologies like e-mental health applications with, for example, personalised reminder messages, digital interventions or chatbots claimed to deliver personalised help. The linguistic network illustrated both trends, as many drugs and symptom-related words co-occurred with the term personalisation. Moreover, one cluster of words was related to technology to a certain extent.

Further use of personalisation was observed in the context of a framework provided by the UK governmental initiative Putting People First. The usage of the term in this context comprised...
an economic dimension of healthcare, which was related to personal budgets for the benefit of social care. However, some authors observed that personalising care was sometimes used to cover up budget shortages, meaning that former services were no longer paid for all patients and services were titled as ‘personalised’ but actually served for saving costs.55

**Person-centred care**

Person-centredness emerged as the most well-defined concept for targeted interventions in the reviewed studies, primarily in the fields of psychiatry, clinical psychology and psychosomatic medicine. The highest number of established frameworks was found for person-centred care, such as McCormack’s person-centred nursing, VIPS (values, individualised, perspective and social) framework for dementia care, Carl Rogers’ client-centred psychotherapy and Sudhiraraset’s person-centred care framework for reproductive health equity for improving maternal health quality (see online supplemental file 3). Many articles cited the model developed by Thomas Kitwood in the late 1980s at the University of Bradford, UK for dealing with people with dementia. Describing five dimensions of personhood, Kitwood had proposed providing care to people by focusing on the person’s uniqueness and preferences instead of the disease, by recognising that dementia was just a diagnosis and the person was much more than a diagnosis.56 He argued that the medical model of care dehumanised patients and the clinicians became emotionally distanced from the patients, restricting their capacity to form a meaningful connection with them.57

In our thematic analysis, the sociocultural dimension emerged as the most dominant in studies on person-centredness, with major emphasis on recognising the individual’s unique personhood. These concepts called for shifting the focus from the disease to the health of the patient, highlighting the service users as capable persons, with their own experiences, knowledge and preferences.58 Within the medical dimension, the aspects of person-centred care were dominated by recognition of health needs of the service users and empowering them in the shared decision-making process. Patient preferences and self-management abilities were dominant in the psychological dimension. Person-centredness, therefore, acknowledged the whole person within his/her social context to provide respectful care meeting their individual needs and preferences and supporting self-determination in decision-making.59 The network visualisation of word co-occurrences aligned with our thematic analysis findings as most words were used in the context of either dementia care or nursing and related to clinical or home care.

**Implications for future research**

The interest in individualised, personalised and person-centred medicine has grown in recent years as evidenced by the significant increase in the number of research papers published on the topic in the past 10 years. To date, however, the three terms are still used inconsistently with different contexts of application. Further research can focus first at the level of language, whereby a conceptual framework exactly defining the scope of these terms is needed by mental health researchers to increase the accuracy of their models, their research aims and methodologies. In this context, future work has to regard more terms such as ‘precision medicine’, ‘tailored’, ‘stratified’, ‘targeted’, etc. Emerging tools of natural language processing and text mining might be able to add more value to future study designs. They automatically process unstructured text from publications, electronic health records or even clinical notes, extract information and by this facilitate interpretation.60 Finally, investigating language use in different research disciplines will add value to this direction, and a study protocol has announced focusing on this issue.61

Second, further research on the level of mental health treatment practice can provide a clear definition that helps to measure the degree of tailoring interventions to a person’s unique condition beyond financial and structural restrictions. Our observations derived from the results of the study supported this. Patient-centredness emerged as the term with the most frameworks and concepts, and it is as well the concept that provides measures and scales for assessment.62 Measuring personalisation or individualisation, in turn, remains challenging. Statistical approaches like the personalised advantage index are promising, but external validations are needed.63 Future research designs might as well focus on specific disorders based on the results of our analysis.

**Strengths and limitations**

To the best of our knowledge, this is the first effort at mapping key concepts of individualisation, personalisation and person-centredness that have been used in recent literature on mental healthcare. However, this analysis is far from being complete. As described earlier, future research has to include more related terms. Physical and practical constraints did not allow us to include more search terms into our analysis. This is especially the case for precision medicine. We decided against this term due to its strong emphasis on biomedicine, which was beyond our focus. Second, a scoping review pursues a broad strategy without assessing the study quality, and we included several reviews and overview articles besides original research articles. Future studies should either include recent advancements in scoping studies that have added methods of evidence synthesis or conduct a systematic review to assess the quality of the studies.

**CONCLUSIONS**

After a century of emphasis on general medicine, the biomedical field has taken the route of personalised interventions in mental healthcare much like those perpetuated by the ‘traditional’ medical systems. This is reflected in a multifaceted use of language claiming individually targeted interventions to be personalised, individualised or person-centred. This scoping review of recent published literature shows that individualisation is used as the most generic term, while personalisation is used often in the context of either biomedical or technology-related studies. In the reviewed studies, person-centred approaches emerged with the most well-defined concepts, with many articles providing existing models and theoretical or practical care frameworks. Network visualisations provided a linguistic context of the three terms, showing some correlations among words related to disorders, treatments and medical fields. Future work should include more synonymous terms such as targeted, precision or customised interventions for a deeper analysis—possibly by means of computational linguistics—in order to understand and delineate the conceptual boundaries between these closely related terminologies within the context of their respective disorders, treatments or medical settings. By this, advancements in operationalisations and measures in empirical research designs can be prepared.

Twitter Gwendolyn Mayer @gwenn24hrsonly

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