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The Future of Psychiatry Page 3

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DEAR COLLEAGUES,

I warmly welcome you to read the first issue of the Consortium Psychiatricum journal of 2021.

We start the year with an editorial article by Professor Norman Sartorius on the future of psychiatry, which focuses on areas for mental health care improvement. Special articles relating to the organization of community mental care have been written by authors from Finland, Norway and Australia. Three research articles have been written by Russian authors and cover different fields of research. The problem of suicide during the COVID-19 pandemic is explored by scientists from St. Petersburg. Basic research regarding the immunological profiles of patients, with different course of schizophrenia, covers the promising area of psychoneuroimmunology. The findings of scientists may add to our knowledge of the biological underpinnings of the different clinical courses of paranoid schizophrenia. Another research article focuses on the clinical topic and creatively explores the phenomenon of gelotophobia (the fear of being laughed at) among patients with schizophrenia and a high risk of psychosis. The emotional response among patients with severe mental disorders is studied, using an aspect of the mental state, such as humour perception, which is unusual for clinicians but may potentially be considered in future clinical practice.

In 2021 we plan to publish three thematic issues of the journal. The second issue in 2021 will be dedicated to the ICD-11 mental, behavioural or neurodevelopmental disorders. The third issue will cover the topic of the first episode psychosis and its clinical, research and public health aspects. The fourth issue is intended to focus on neurocognitive disorders. You are very welcome to send papers for our thematic issues, as well as articles on the topic of your choice.

George P. Kostyuk,
Editor-in-Chief, Consortium Psychiatricum

The Future of Psychiatry

Будущее психиатрии

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Ассоциация по улучшению программ в области психического здоровья, Женева, Швейцария

ABSTRACT

Since the Second World War mental health programmes and psychiatry have made significant advances. Countries, as well as the United Nations, have recognized the magnitude and severity of mental health problems, and numerous national programmes have been launched to deal with them. Technology relating to the treatment of mental disorders has advanced and significant progress has been made in terms of knowledge regarding the functioning of the brain. The awareness of the need to protect the human rights of those with mental illness has increased. National and regional programmes against stigma and the consequent discrimination of those with mental illness, have been launched in many countries. Associations bringing together those who have experienced mental illness and their relatives, have come into existence in many countries.

While these are great steps forward, more work is necessary to complete these advances. In low- and middle-income countries, the vast majority of people with mental disorders do not receive adequate treatment. Even in highly industrialized countries, a third of people with severe forms of mental illness are not receiving the appropriate therapy. Laws concerning mental health are outdated in many countries. The protection of the human rights of the mentally ill is incomplete and imperfect. The emphasis on economic gain and the digitalization of medicine in recent years has not helped. On occasions, this has even slowed down the development of mental health services, and the provision of mental healthcare. Thus, psychiatry must still deal with the challenges of the past century, while facing new demands and tasks.

Among the new tasks for psychiatry are undoubtedly reforms which will allow (i) the provision of appropriate care of people with comorbid mental and physical disorders, (ii) the application of interventions leading to the primary prevention of mental and neurological disorders, and (iii) a radical reform of the education of psychiatrists and other mental health workers, dealing with mental illness. Collaboration with other stakeholders in the field of mental health and medicine, will be of crucial importance in relation to all these tasks.

АННОТАЦИЯ

После Второй мировой войны программы по охране психического здоровья и психиатрия достигли значительного успеха. Государства, а также Организация Объединённых Наций признали масштаб и серьёзность проблем психического здоровья, что повлекло за собой запуск множества национальных программ, направленных на решение этих проблем. Продвинулись технологии лечения психических расстройств, значительный прогресс был достигнут в понимании функционирования головного мозга. Возросло осознание необходимости защиты прав людей с психическими заболеваниями. Во многих странах были запущены национальные и региональные программы по борьбе со стигматизацией и, соответственно, дискриминацией людей с психическими заболеваниями; появились ассоциации, объединяющие людей с психическими расстройствами и их родственников.

Несмотря на достигнутый прогресс, необходимы дальнейшие действия. Значительная часть людей с психическими заболеваниями в странах с низким и средним уровнем доходов не получает должного лечения. Даже в промышленно развитых регионах до 1/3 больных тяжёлыми формами психических заболеваний лишены надлежащей помощи. Законы в области психического здоровья устарели во многих странах, а защита прав

людей с психическими заболеваниями — несовершенна и недостаточна. Актуальные в последние годы акцент на экономическую целесообразность медицинской помощи и цифровизация медицины не улучшили ситуацию. В некоторых случаях это даже замедлило развитие психиатрических служб и оказание помощи в сфере психического здоровья. Таким образом, психиатрия вынуждена справляться со сложностями, возникшими в прошлом веке, и при этом соответствовать новым требованиям и задачам.

К современным задачам, стоящим перед психиатрией, несомненно, относятся реформы, которые позволят оказывать (i) необходимую помощь людям с коморбидными психическими и физическими заболеваниями; (ii) применять методы по обеспечению первичной профилактики психических и неврологических заболеваний; (iii) провести радикальную реформу в образовании психиатров и других специалистов в области психического здоровья. Решение всех этих задач требует тесного сотрудничества между всеми заинтересованными сторонами в области психического здоровья и медицины.

Keywords: *future psychiatry; psychiatric education; prevention of mental illness; promotion of mental health; mental health; paradigms of psychiatry*
Ключевые слова: *будущее психиатрии; психиатрическое образование; профилактика психических заболеваний; укрепление психического здоровья; психическое здоровье; парадигмы психиатрии*

It is possible that the future of psychiatry will be bright, not least because psychiatry has won several battles that it has fought since the middle of the last century. The first and possibly the most important of these battles, was the recognition – by the medical community, society and governments – that mental health matters, and that it is necessary to invest time and money into reducing the burden that mental disorders place on society. and help those who are suffering from mental disorders (as well as those who care for them). A number of countries have adopted national mental health programmes, and the United Nations has included the fight for better mental health among its sustainable development goals.[1]

Another battle, fought over an even longer period, was the development and application of methods of treatment and rehabilitation, leading to the recovery and inclusion of those who have suffered from a mental illness by their ccommunity. In this respect also major advances have been made, and it is fair to say that the success of the treatment of mental disorders, is equal or better than the success of the treatment of other noncommunicable diseases.

The importance of reducing the stigma of mental illness – stigma being a major obstacle to all efforts in the field of mental health - has also been recognized, and anti-stigma programmes have been introduced in several European countries – including Denmark, the Netherlands and the United Kingdom – and elsewhere, e.g., in Australia, New Zealand and Canada.[2]

The decades since the Second World War have also seen a significant increase in the number of psychiatrists – from around 50,000 in the 1950s to more than 250,000 today.[3] The numbers of other health workers, dealing with mental disorders, have also grown exponentially.

The list of successes and battles won does not end there: science has made major steps forward in its effort to understand the functioning of the brain. The fact that the provision of adequate mental healthcare, in partnership with general healthcare services and by general healthcare workers, can be provided even in very poor countries, has been demonstrated in carefully designed studies.[4,5] The human rights of those with mental illness have been recognized in numerous international and national statements and binding documents.[6] Organizations bringing together people who experienced mental illness, their family members and others willing to help people with mental illness lead a life worth living, in their community, have come into existence in many countries.

Although we can be proud of these successes, it is also clear that the battles mentioned above will continue. While the importance of helping people with mental illness and their families has been recognized in many countries, the budgetary allocations for mental health programmes remain low. Many of the countries which have agreed to pursue sustainable development goals, suffer from financial and other difficulties, and their efforts to achieve the goals which they agreed to pursue, have been feeble. The human rights of people with mental disorders are not

sufficiently respected or protected, and the laws relevant to mental health care, are outdated in many countries. The gains made in terms of improved technology, in relation to the treatment of mental disorders, have not yet yielded the expected benefits: in low- and middle-income countries, up to 80% of all individuals with severe forms of mental illness, do not receive adequate treatment. Even in the industrially-advanced, rich countries, nearly one third of people with mental diseases, do not receive appropriate treatment.[7] The programmes launched to reduce stigma are a significant step forward, but they are programmes which are separate from the mental healthcare system: it is to be hoped that the fight against stigma will become an essential part of mental health service activities, and that this will be reflected in the budget of all psychiatric services and institutions. The associations, bringing together people with mental illnesses and their family members, often lack financial and administrative support and depend on a small number of activists, who vary in their capacity to be fully engaged which renders these organizations vulnerable and affects their ability to fulfil their goals.

It is also important to recognize that these developments are taking place in a world currently influenced by several major trends, directly relevant to the development of healthcare, in general and psychiatry, in particular. The first of these is "commodification" - the tendency to consider all activities and all developments in economic terms, as if they were forms of handling commodities, such as sugar, cotton, coal or timber.[8] Thus, a hospital will be considered a success if it can work in a manner that will result in financial gain, a profit; the treatment of an individual with an illness, will be considered a success, if it enables him or her to continue working and producing. Conversely the treatment would be a failure if it does not achieve this, regardless of the effects that it might have had in terms of quality of life or extension of life expectancy. Commodification results in changes in healthcare priorities and in the manner of providing services, and can be particularly detrimental to work in the fields of psychiatry or geriatrics.

Another major development in terms of importance for medicine and mental healthcare, is the digitalization of medicine and other social and industrial pursuits. While offering vast improvements in medical technology and diagnostics, and opening the door to telemedicine and telepsychiatry, digitalization also impacts the relationship between health workers and those who seek help and can dehumanize medicine. While an excellent tool, and potentially a good servant of medicine, digitalization has in many instances been allowed to become its master imposing ways of working and communicating that deny or eliminate empathy, reduce the sense of belonging and weaken humane interaction in the fabric of society.

While the digitalization of medicine and commodification may bring benefits to the practice of psychiatry but also harm it, there is another trend which might play an increasingly important role in the provision of mental healthcare: this is the rediscovery of the potential of self-help techniques and mutual help arrangements. The peer support system has been shown to facilitate and improve the care of patients with diabetes, as well as those with substance abuse problems. The mental health first-aid materials, produced in several countries, as well as the increasing emphasis on education of the population regarding health-promoting lifestyles, are indications of the recognition of the importance of self-help in medicine, in general and in psychiatry, in particular. It is to be hoped that the trend of facilitating self-help and mutual help will continue to grow, and that it will find support in general and in health education programmes.

If psychiatry is to be useful to society and to people with mental health problems in the future, it will have to expand its field of activity and add new pursuits to those of providing treatment for people with mental illness. It will have to seek a productive alliance with other disciplines of medicine, and with other professions, not only to improve the provision of care to people with comorbid mental and physical illness but also to benefit from advances of medicine in general.

Mental health programs will also have to make significant efforts to elevate the position of mental health on the scale of values of both individuals and societies. Once mental health is high on the scale of values held by individuals and society, and people consider it important mental health programmes will receive the moral and material support necessary to build and maintain comprehensive mental health programmes. The effort to promote mental health on the scale of values, as well as other tasks in the field of mental health, will have to be approached in collaboration with other stakeholders in the field of mental health, including, in particular, those who have experienced mental illness and their carers.

Another area of emphasis in which the psychiatrists

of the future will need to invest time and effort, will be the significant expansion of programmes, focusing on the primary prevention of mental and neurological disorders. At present this area of work is neglected by psychiatrists, partly because the action necessary to introduce primary prevention is in the hands of other professions and institutions, and partly because psychiatrists are overburdened by the tasks related to the provision of care to people with mental illness. An example of primary prevention of a serious mental disorder, is the provision of iodine for women of childbearing age, which would prevent cretinism in their children; another example is involvement in perinatal care, to provide women with information about the upbringing of their children or the danger of foetal alcohol syndromes. Numerous other examples of action that could lead to the primary prevention of mental and neurological disorders could be listed: most, if not all of them, are in areas controlled by other professions or institutions. To influence these, psychiatrists will have to make a serious effort beyond their usual area of work.

Investing time and effort into introducing the primary prevention of mental and neurological disorders, is not the only area in which psychiatry will have to step outside its current principal areas of activity: another is the need to organize services for people, suffering from a mental as well as a physical disorder. Comorbidity is already prevalent and reduces the life expectancy of those with mental disorders by as much as 12 to 15 years: it is likely that the prevalence of comorbidity and multimorbidity will increase for a variety of reasons, including the extension of life expectancy and the improved survival rates of people, suffering from non-communicable diseases.[9]

The current education of psychiatrists does not include systematic training in skills, likely to helpful in the development of mental health programmes as well as in the efforts to elevate mental health on the scale of values of individuals and societies. Skills of communication, such as those of negotiation and of public speaking, are tools which are useful in the process of convincing the many who can be usefully involved in the building of mental health programmes: they should be added to the postgraduate training of psychiatrists, which should also include appropriate instruction in public health, in legal matters and behavioural sciences. The organizers of training for psychiatrists must also consider ways of involving other stakeholders in the education of mental health workers. Among them should be family members and others who take care of severely mentally ill people in the community, social workers, nurses and other staff involved in the care ofr people with mental illness. Educators should also consider the best place to provide training for psychiatrists: learning about ways of reducing anxiety before an operation, should be provided in the surgical department, and the management of depression among those with diabetes should take place in the diabetic clinic, rather than in the department of psychiatry.

Training can provide skills and knowledge, and it can change attitudes: however, it cannot change the personality of the student. Educators should keep this in mind when selecting applicants for postgraduate training, and when advising graduates where they should seek work.

Psychiatrists must face these and other tasks which the future is placing before them. In addition, however, those engaged in mental health programmes should remember that they can and should contribute to making and keeping medical practice a humanitarian enterprise and that they should be a model of solidarity with people who are suffering severe illnesses and with those who provide care for them.

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Emotional Response to Humour Perception and Gelotophobia Among Healthy Individuals and Patients with Schizophrenia and Depression, with Signs of a High Clinical Risk of Psychosis

Эмоциональная реакция на восприятие юмора и гелотофобия среди здоровых людей и пациентов с шизофренией и депрессией с признаками высокого клинического риска возникновения психоза

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ABSTRACT

Introduction. Investigating early changes in the emotional sphere within the schizophrenia course is a perspective direction in clinical psychology and psychiatry. Intactness of positive emotions, in particular, humour perception, may be a very important resource for patients. At the same time, humour perception is very sensitive to pathological conditions, such as the fear of being laughed at, known as "gelotophobia". Those with gelotophobia perceive laughter as dangerous, rather than pleasant, and they can hardly distinguish between teasing and ridicule. Gelotophobia was confirmed to be expressed among people with mental disorders. Nonetheless, knowledge relating to the fear of being laughed at, was mostly generated among the non-clinical samples.

Objectives. Thus, the aim of the study was to provide more clinical data on gelotophobia manifestations associated with schizophrenia spectrum disorders; the emotional response and facial expression of patients with gelotophobia were studied, in particular, regarding their perception of humour, including during the early stages of disorders, by comparison with healthy individuals.

Methods. n=30 controls and n=32 patients with schizophrenia and with depression with signs of a high clinical risk of psychosis took part. Two short videos, comic and neutral, were shown to the participants, while videotaping their facial expression, followed each by a self-reported measure of emotional responses. Participants also completed the State-Trait Anxiety Inventory, the PhoPhiKat<30> and the Toronto Alexithymia Scale.

Results. Gelotophobia was significantly higher within the clinical group. It correlated with a lower frequency of grins among the patients during the comic video, while this was not the case in the control group. Gelotophobia was related

to state and trait anxiety in both groups, but only in the clinical group did state anxiety increase after watching the comic video. Gelotophobia correlated with alexithymia and was twice higher among the patients compared to the controls.

Conclusion. Thus, gelotophobia has not only quantitative, but also qualitative specifics in patients with schizophrenia, and those with depression with signs of a clinically high risk of psychosis, compared to healthy controls.

АННОТАЦИЯ

Введение. Исследование ранних изменений эмоциональной сферы в рамках развития шизофрении является перспективным направлением в клинической психологии и психиатрии. Сохранность позитивных эмоций, в частности, при восприятии юмора, может являться важным ресурсом для пациентов. В то же время, восприятие юмора очень чувствительно к патологическим состояниям, например, таким как страх насмешки - “гелотофобия”. Пациенты с гелотофобией воспринимают смех, скорее, как опасный, чем как приятный, и такие пациенты с трудом могут отличить дружелюбное поддразнивание от насмешки. Было подтверждено, что у лиц, страдающих психическими расстройствами, часто встречается гелотофобия. Тем не менее, имеющиеся эмпирические данные о страхе насмешки были получены преимущественно на выборках здоровых людей.

Цель исследования. Таким образом, цель исследования состояла в том, чтобы предоставить больше клинических данных о проявлениях гелотофобии при расстройствах шизофренического спектра; изучить особенности эмоционального реагирования и лицевой экспрессии при восприятии юмора у пациентов с гелотофобией, включая пациентов на инициальных этапах развития расстройств, в сравнении со здоровыми людьми.

Материал и методы. В исследовании приняли участие 30 здоровых человек и 32 пациента, страдающих шизофренией или депрессией с признаками высокого клинического риска развития психоза. Участникам показывали два коротких видеоролика, комический и нейтральный, с одновременной видеофиксацией выражений их лиц, после каждого из них участники давали субъективный отчет о своих эмоциональных реакциях. Участники также заполняли опросник тревожности Спилбергера, опросник PhoPhiKat<30> и Торонтскую шкалу алекситимии.

Результаты. Гелотофобия оказалась значимо выше в клинической группе. В клинической группе она коррелировала с более низкой частотой усмешек среди пациентов во время просмотра комического видеоролика, в то время как в контрольной группе этого не было выявлено. Гелотофобия была связана с личностной и ситуативной тревожностью в обеих группах, однако, только в клинической группе отмечалось повышение ситуативной тревожности после просмотра комического видеоролика. Были выявлены корреляции гелотофобии с алекситимией, причем с коэффициентом в 2 раза выше среди пациентов, по сравнению с контрольной группой.

Заключение. Таким образом, гелотофобия имеет не только количественную, но и качественную специфику у больных шизофренией и пациентов с депрессией с признаками клинического риска развития психоза по сравнению со здоровыми людьми.

Keywords: *gelotophobia; the fear of being laughed at; emotion; facial expression; humour; risk of psychosis; attenuated positive symptoms*

Ключевые слова: *гелотофобия; страх насмешки; эмоции; выражение лица; юмор; риск психоза; аттенуированные позитивные симптомы*

INTRODUCTION

According to many scholars, the recognition and expression of emotions that are the basis of nonverbal communication, reflect a decrease in the ability to process and apply social information, which leads to social incompetence.[1] These disorders are more common for schizophrenia spectrum disorders than affective disorders.[2] The socio-emotional deficit is also related to a poor functional outcome for patients, with a high clinical risk of psychosis.[3] Humour perception may be regarded as a strong marker of emotional expression disorder or intactness. Patients with schizophrenia exhibited significant and substantial deficits in humour recognition, compared to the patients with depression and anxiety,[4,5] while patients with affective disorders demonstrated a greater decrease in laughter expression, compared to those with schizophrenia spectrum disorders and the healthy controls.[5] All the aforementioned groups of patients have difficulties in relation to humour comprehension.[6] The inability to orient in social interactions involving humour and laughter, may lead to negative emotional reactions to humour, including an increased fear of being laughed at – gelotophobia.[7]

Gelotophobia is defined as the pathological fear of becoming an object of ridicule, initially regarded as a form of social phobia.[7] Firstly, descriptions of gelotophobia were presented by a psychotherapist, M. Titze, based on his single-case observations in clinical practice.[7,8] Later, the concept was developed within a psychometrical approach. W. Ruch and R.T. Proyer used prototypical statements of individuals with gelotophobia, collected from clinical practice, to elaborate on the first self-reported gelotophobia scale - the Geloph.[9] Using this first version of the questionnaire they empirically separated a group of clinically-diagnosed gelotophobic patients (provided by M. Titze) from the groups of shame-based and non-shame-based "depressed neurotics", as defined by Nathanson,[10] and normal controls.[11] Subsequently, the gelotophobia scale has been revised several times,[12] and the modern instrument, the PhoPhiKat<30> includes two additional gelotophobia subscales, such as gelotophilia (the joy of being an object of laughter) and katagelasticism (the joy of laughing at others).[13] From this point, the concept of the fear of being laughed at, became an area of interest, and has been studied in many countries and in many languages. In a multi-national study by R. Proyer et al. the data from 73 countries and 42 languages were analysed altogether.[14]

Gelotophobia has maladaptive characteristics: conviction in one's own ridiculousness, perception of laughter as a threat, increased anxiety and shame, stiffness and timidity, sensitivity and social isolation in extreme cases.[15-17] Gelotophobic people are very observant in social situations and become easily suspicious of the laughter of others. They can hardly distinguish between happy, joyful and derisive kinds of laughter, and cannot experience laughter as relaxing or positive, only as a means of aggression. They tend to interpret even benevolent or neutral kinds of humour-related situations as threatening.[15] Among the general population, the frequency of gelotophobia ranges from 5% to 12% in different countries, and from 7% to 15% in Russia.[16-18]

The first data regarding the emotional response and expression of people with gelotophobia were provided by W. Ruch et al.[15] They discovered that people with gelotophobia automatically respond to smiling and laughing faces with a facial expression of contempt, rather than the more natural and normative reaction of smiling back. Gelotophobic people also tend to perceive others' smiles as less joyful and more contemptuous; they do not experience positive emotions watching smiling faces, in the same way as other people.[19] Thus, gelotophobia may not only distort the perception of the target of laughter and the motives of laughter, but also constitutes an emotional response to humour in general, in a wide range of humour-related situations.

M. Titze discussed gelotophobia in relation to sociophobia and shame-bound anxiety, although regarded it as a relatively independent phenomenon.[8] Recent empirical studies have confirmed the high correlation between the fear of being laughed at, and social anxiety.[20-22] Gelotophobia also occurs more often in patients with avoidant personality disorder, moreover, all patients with both social anxiety and avoidant personality disorder were also defined as gelotophobic.[21] Based on this, the fear of being laughed at was regarded as a possible additional diagnostic criterion for these disorders.

A number of clinical studies confirmed a higher expression of gelotophobia amongst those with various mental disorders,[21-24] including schizophrenia spectrum disorders.[23,25,26] Nonetheless, knowledge relating to the fear of being laughed at was mostly generated in relation

to the samples of individuals without clinical diagnoses, within the frame of individual differences,[15,19,27] and there is still a lack of clinical data.

Despite the continuous discussion relating to the distinction between the fear of being laughed at as a trait and as a pathological condition, the qualitative specifics of gelotophobia among those with severe mental disorders have not been sufficiently studied.

The aim of this study was to provide more clinical data on gelotophobia manifestations in schizophrenia spectrum disorders. We studied the emotional response and facial expressions regarding the perception of humour among inpatients with schizophrenia spectrum disorders, depressed patients with a high risk of psychosis and healthy controls.

The hypotheses of the study were the following: 1) the emotional response to humour differs in patients with schizophrenia spectrum disorders compared to the controls; 2) these peculiarities differ depending on the level of psychopathology (schizophrenia versus depression with a high clinical risk of psychosis); 3) the peculiarities of the emotional response to humour in patients with schizophrenia spectrum disorders, can be attributed to gelotophobia.

MATERIAL AND METHODS

1) The stimulus video material consisted of two clips – the comic and the neutral clips. The videos were compiled from short clips taken from the YouTube platform. Fragments of each video were selected in such a way, so as to be very similar in terms of duration, brightness, quality, as well as format (only horizontal orientation). Each of the two videos lasted around three minutes.

- The comic video did not have a storyline. It consisted of amusing clips about dogs (for example, a dog dancing to music; a dog walking in boots, etc.). It was humorous in terms of content, aimed at forming positive emotions.
- The neutral video consisted of short clips about dogs' lives (for example, a dog being walked; a dog in the process of being trained, etc.); it did not have a storyline and was supposed to be emotionally neutral.

Participants watched the neutral video first and then the comic video, while their facial expression was videotaped and later analysed. Emotional (laughter) expressions were categorized as none, smile (with no vocalization), grin (a smile with a short-term and slight vocalization, the mouth is mostly closed), laughter (open mouth, obvious vocalization), burst of laughter (loud vocalization, body movements).

After each video, the participants evaluated their subjective emotional response. Both before and after watching the comic video, they also completed the State Anxiety Inventory[28,29] in order to measure the potential anxiety evoked by the humorous stimuli. After the whole experiment, participants were assessed in relation to the Trait Anxiety Inventory[28,29] and the Toronto Alexithymia Scale[30,31] in order to control possible alternative or additional factors of emotional distortions.

As one can see, the chosen humorous stimuli were simple and benevolent, or at least neutral, and could hardly evoke an idea of negative intent or emotions – at least in healthy participants. Therefore, as a result of such a method we suggested accessing an emotional response to humour.

2) An emotion evaluation scale, developed by the authors, with a written list of 10 emotions (joy, delight, grief, anxiety, sadness, fear, anger, indifference, shame, disgust) was presented to the participants after each video. The list was created on the basis of P. Ekman's classification of basic emotions.[32]

Indifference, delight, shame and anxiety were added to the list because of their association with the variables that were focused on, namely, gelotophobia, alexithymia, personal and situational anxiety. Participants were to choose the emotions they experienced while watching the stimulus video, and to evaluate their intensity from 1 to 5.

3) The PhoPhiKat <30> was developed by W. Ruch and R. Proyer.[13] The Russian adaptation was proposed by E.M. Ivanova et al.[18]

PhoPhiKat <30> consists of 30 items. The questionnaire assesses gelotophobia (the fear of being laughed at), gelotophilia (the joy of being an object of laughter) and katagelasticism (the joy of laughing at others); the last two subscales were not used in the present study.

The participants were to rate each of the statements on a four-point Likert scale (from "completely disagree" to "fully agree").

4) We also used the Scale of Prodromal Symptoms (SOPS)[33] to assess attenuated prodromal symptoms, the

Positive and Negative Syndrome Scale (PANSS)[34] to assess psychotic symptoms and the Hamilton Depression Rating Scale (HDRS)[35] to assess depressive symptoms.

The SOPS forms part of the Structured Interview for Prodromal Syndromes (SIPS). It may be conceptualized as analogous to the PANSS for patients who are not fully psychotic (at a high clinical risk of psychosis). The SOPS contains four subscales for positive, negative, disorganized and general symptom constructs. Attenuated positive symptoms were assessed on the positive subscale of the SOPS.

The PANSS is one of the best-validated instruments for measuring the symptom severity of patients with schizophrenia, that we used to assess patients with first psychosis in this study.

The HDRS is a 21-item depression rating scale for determining a level of depression in patients with first psychosis and with signs of a high clinical risk of psychosis.

All patients were examined according to these scales twice: firstly, at the point of admission and secondly, after completion of the main course of therapy, before being discharged from the hospital.

A psychological study was carried out at the second stage to identify any emotional disturbance among patients with psychosis and at a high clinical risk who were close to remission.

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of the Mental Health Research Center on 05.05.2016 (project identification code 281).

The following statistical methods were used in the quantitative analysis of the data: the Mann-Whitney criterion, the Wilcoxon signed-rank test and the Spearman's rank correlation coefficient.

Participants

In total, 62 participants took part in the study. The control group consisted of 30 conditionally healthy individuals (19 women, 11 men) at the age of 22.9±5.7.

The clinical group consisted of 32 patients (all men) between the ages of 18 and 24 (M = 19.6 years, SD = 2.04) hospitalized at the Mental Health Research Center (MHRC) and divided into two subgroups:

Subgroup 1 (n = 16, at an age of 20.8±2.3) consisting of primary inpatients, hospitalized with the first depressive episode (F32) with signs of a high clinical risk of psychosis,[36] which have been identified according to the SIPS[37] as Brief Limited Intermittent Psychotic Symptoms (BLIPS) and Attenuated Positive Symptoms (APS).[38] The mean score recorded by the SOPS was 45.1±10.6 and the mean score recorded by the HDRS was 26.5±6.2, being 24.2±10.9 and 6.8±1.1 at the time of admission and at the second stage before discharge, respectively.

Subgroup 2 (n = 16, at an age of 21.6±1.6) with the first episode of psychosis, with diagnoses of F20 (three patients) and of F25 (13 patients). The mean score recorded by the PANSS at the first stage was 86.3±12.8, the mean score recorded by the HDRS was 20.2±8.6, and at the second stage, the scores were 53.6±13.5 and 6.1±1.8, respectively.

All patients showed significant clinical improvement, assessed by the scales SOPS, PANSS and HDRS after the reduction of the leading syndrome, before being discharging from the hospital. Thus, in patients with signs of a high clinical risk for psychosis, depressive symptoms were reduced (HDRS<8), which could otherwise influence the results of the study. All diagnoses, as well as assignment to the clinical subgroup, were verified by the psychiatrists. The patients took medication, which included atypical antipsychotics (risperidone, quetiapine, olanzapine) of an average dosage, converted to chlorpromazine equivalents[39] namely 292.5±206.1 mg per day in group 1 and 611.7±209.2 mg per day in group 2, as well as selective serotonin reuptake inhibitors (SSRIs), (fluvoxamine, sertraline, paroxetine). In order to exclude the side effects of medical treatment, that could influence the data, all patients were examined with the UKU (The UKU Side Effects Rating Scale for the Registration of Unwanted Effects of Psychotropics),[40] and none of them revealed any significant unwanted effects (points per item were 0 – no side effects or 1 – mild side effects that do not interfere with the patient's performance).

Procedure

The procedure included several stages. At the first stage, stimulus videos (first the neutral, then the comic video) had been shown to the control group of healthy individuals. The participants' emotional expression while watching the video was recorded with a Logitech C910 camera for further data processing. All the participants had been informed of being recorded and signed

an informed consent, agreeing to their participation in the study.

After watching each video, the participants evaluated their emotional state according to the list of 10 emotions. Participants had to choose the emotions they experienced while watching each video, and evaluate their intensity from 1 to 5 (1 - low; 2 - moderate; 3 - above average; 4 – fairly high; 5 - high).

The Trait Anxiety Inventory was administered to the participants immediately before and immediately after watching the comic video, in order to assess an increase in anxiety in relation to humour perception.

At the second stage, participants were examined by the STAI (trait anxiety), the PhoPhiKat and the TAS scales. The cut-off point of 2.5,[12] was applied, in order to distinguish participants with gelotophobia from those with no fear of laughter.

RESULTS

Expressive reactions

Mean rank comparisons, using the Mann-Whitney criterion showed, that in the control group, the subjects significantly more often smiled (U = 196.500; Z = -3.784; p = 0.0001), grinned (U = 265.500; Z = -3.433; p = 0.001) and laughed (U = 330.000; Z = -3.004; p = 0.003) while watching the comic video, compared to the neutral video; no one laughed while watching the neutral video, which made it possible to assume the validity of the stimulus material (see Table 1). The expressive reactions of all the patients were, in general, significantly poorer compared to the control group, according to the results of the Mann-Whitney criterion. The differences between the clinical and the control group were statistically significant: the patients smiled, grinned and laughed less ($p < 0.05$) in relation to the comic video, and smiled even less when watching the neutral video (p = 0.001). No differences were found between the clinical subgroups.

Moreover, unlike the control group, the comparison between the two videos only showed significant differences with regard to smiles (U = 64.500; Z = -2.651; p = 0.015) for the group suffering from depression with signs of a high clinical risk and no significant differences for the psychotic group. In the latter group, there was no laughter at all and only one person grinned twice during the comic video.

Self-reported emotional reactions

An analysis of self-reported emotional reactions after each video, using the Mann-Whitney criterion demonstrated increased joy (U = 232.500; Z = -3.303; p = 0.001), delight (U = 240.000; Z = -3.706; p = 0.0001) and surprisingly, sadness (U = 375.000; Z = -2.313; p = 0.021) after watching the comic video, compared with the neutral video in the control group. In contrast, no significant differences between emotional reactions were found in each of the clinical groups. Patients in the psychotic group tended to report higher levels of delight after watching the comic video, rather than the neutral video, but this result is not particularly significant (U = 82.000; Z = -1.955; p = 0.086).

Gelotophobia

Mean rank comparison by the Mann-Whitney criterion revealed increased gelotophobia, measured by the PhoPhiKat, among the patients than the control group (25.78 and 36.86 relatively, U = 308.500; Z = -2.420; p = 0.016), which confirmed our hypothesis. The pattern was the same for each of the clinical subgroups: the level of gelotophobia was greater in the group with depression with signs of a high clinical risk (p = 0.032) and in the psychotic group (p = 0.015), than in the control group. At the same time, no differences were found between the subgroups of patients.

Next, we examined the correlations between the level of gelotophobia, expressive reactions (frequencies

Table 1. Frequencies of smiles, grins and laughter in the groups

	Control group (n=30)		**Clinical group (n=32)**	
	neutral video	comic video	neutral video	comic video
n, smiles	70	201	28	99
n, grins	3	57	0	10
n, laughter	0	22	0	7

of smiles, grins and laughter) and emotions, reported by the participants after each video, using Spearman's criterion. In the control group, gelotophobia was not related to the frequency of smiles and laughter in relation to the videos, neither was it associated with any of the emotions. On the contrary, in the clinical group, a higher level of gelotophobia was associated with a lower frequency of grins while watching the comic video ($r = -0.466$; $p = 0.007$). More detailed analysis revealed that in the group with depression with a high clinical risk, gelotophobia correlated with the frequency of smiles while watching the neutral video ($r = -0.592$; $p = 0.016$) and grins while watching the comic video ($r = -0.576$; $p = 0.020$). At the same time, in the psychotic group there were no such correlations ($r = 0.024$; $p = 0.929$ and $r = -0.281$; $p = 0.292$, relatively). No correlations were found in any of the groups between gelotophobia and reported emotions after watching the videos.

Gelotophobia and anxiety

Gelotophobia correlated positively to trait anxiety, measured by the STAI in both groups by the Spearman criterion. Higher gelotophobia was related to a higher level of trait anxiety in the control group ($r = 0.677$; $p = 0.0001$) and in the clinical group ($r = 0.580$; $p = 0.001$), with the same pattern for each of the subgroups.

Differences in state anxiety before and after watching the comic video were analysed for each of the groups, using the Wilcoxon criterion. In the control group, state anxiety between the two stages did not differ (mean ranks 12.11 and 16.04; $Z = -0.471$; $p = 0.638$), while in both clinical subgroups, the level of anxiety increased after watching the comic video (mean ranks 7.25 and 8.12; $Z = -2.586$; $p = 0.01$ for the group with depression with a high clinical risk, and mean ranks 1.75 and 8.96; $Z = -3.210$; $p = 0.001$ for the psychotic group).

Then we calculated the numerical difference between the score before and after watching the comic video. The increase of this parameter reflected increase of state anxiety and it appeared to be associated with gelotophobia in the control group (Spearman criterion, $r = 0.471$; $p = 0.009$) as well as in the clinical group ($r = 0.422$; $p = 0.016$). The pattern in the subgroups was the same, although in the group with depression with a high clinical risk, the correlation did not reach the level of significance ($r = 0.461$; $p = 0.072$), while in the group of psychotic patients the level of significance was reached ($r = 0.520$; $p = 0.039$).

Gelotophobia and alexithymia

Not surprisingly, the Mann-Whitney test revealed that higher levels of alexithymia, measured by the Toronto Alexithymia Scale, were more common among the patients than the healthy participants (mean ranks 1240 and 713, respectively, $W = 248.000$; $Z = -3.270$; $p = 0.001$). Figure 1 demonstrates the distribution of the alexithymia levels in the two groups.

Gelotophobia correlated with alexithymia in both groups, but in the clinical group, the Spearman coefficient was almost twice higher ($r = 0.746$; $p = 0.0001$) than in the control group ($r = 0.490$; $p = 0.006$).

DISCUSSION

In the group of healthy participants, the comic video produced more emotional expressions (smiles, grins and laughter), and higher levels of joy and delight than the neutral video, which is in line with our expectations and confirmed the validity of the stimulus material. Unexpectedly, healthy people also reported higher levels of sadness in relation to the comic video, which is hard to interpret. Perhaps this was related to the subjects' assessments of the humour quality, which always seem to be relatively low in experimental, laboratory conditions.

The expressive responses of all the patients were significantly poorer compared to the controls, with no differences revealed between the clinical subgroups, which is consistent with a number of studies regarding less emotional expressivity among those with schizophrenia spectrum disorders.[41,42] Probably because of this, the expressive reactions of the patients differed between the neutral and comic video only in terms of the frequency of smiles in the group with depression with a high clinical risk, but not with regard to grins and laughter. The patients with psychotic disorders did not exhibit any differences at all.

An analysis of the self-reported emotional reactions in both groups of patients revealed no differences after watching the comic or the neutral video, by contrast with the control group, which reflected a deficit not only in relation to expressivity, but also in the subjective, emotional experience.

Gelotophobia was significantly higher among the group of inpatients than the control group, which is consistent with the data of previous studies.[23,26] At the same time, no differences were found between the clinical subgroups.

Neither the expressive laughter reactions, nor the emotions experienced with regard to the comic video were associated with gelotophobia in the control group, which seemed to contradict the data of Ruch et al.[27] However, it is worthy of note, that the humour chosen for the present study was far removed from social interaction and thus, the danger of being laughed at did not prevent the participants from being amused by the comical situations, even in the case of healthy participants with a greater fear of being laughed at as a trait. On the contrary, in the group with depression with a high clinical risk, gelotophobia correlated negatively with the frequency of grins while watching the comic video, and surprisingly, with the frequency of smiles while watching the neutral video. This could reflect the tendency of this group to control their reactions in situations related to the context of humour and laughter, even innocent situations, as was the case in the present study, which is relatively consistent with the concept of gelotophobia. This control could also be expanded to include more neutral, social situations. Unexpectedly, in the psychotic group, gelotophobia did not correlate with expressive reactions to the comic video. Possibly, this was due to deeper disturbances in emotional expressivity among these patients, unrelated to gelotophobia. Nevertheless, this result needs to be addressed in future studies.

No correlations in any of the groups were found between gelotophobia and reported emotions after watching the videos. Thus, the comic video did not result in more fear, shame, anxiety or anger, as one might hypothesize. It is worthy of note, however, that the scale of emotions was a self-reported measure, therefore, could be more influenced by the tendency to control oneself and to reveal more socially desirable results.

Gelotophobia was associated with trait anxiety in all the groups with a particularly significant connection in the control group. At the same time, watching the comic video increased state anxiety among the patients only, while this did not differ among the control group. Gelotophobia correlated with an increase in state anxiety relating to the comic video in all the groups: the higher the gelotophobia, the higher the increase in anxiety. However, in the group with depression with a high clinical risk, the connection did not reach a level of significance. Thus, the perception of humour and laughter, even regarding such innocent and safe topics as pets' humour, evoked an increase in anxiety among those with gelotophobia.

As expected, gelotophobia was related to the level of alexithymia in both groups, but in the clinical group, it was almost twice higher than in the control group. Thus, the difficulty of understanding and expressing one's own emotions, as well as understanding the feelings of others, could be one of the psychological mechanisms underlying gelotophobia among these patients.

Overall, the results led to the conclusion that gelotophobia in mentally ill people, in particular, those

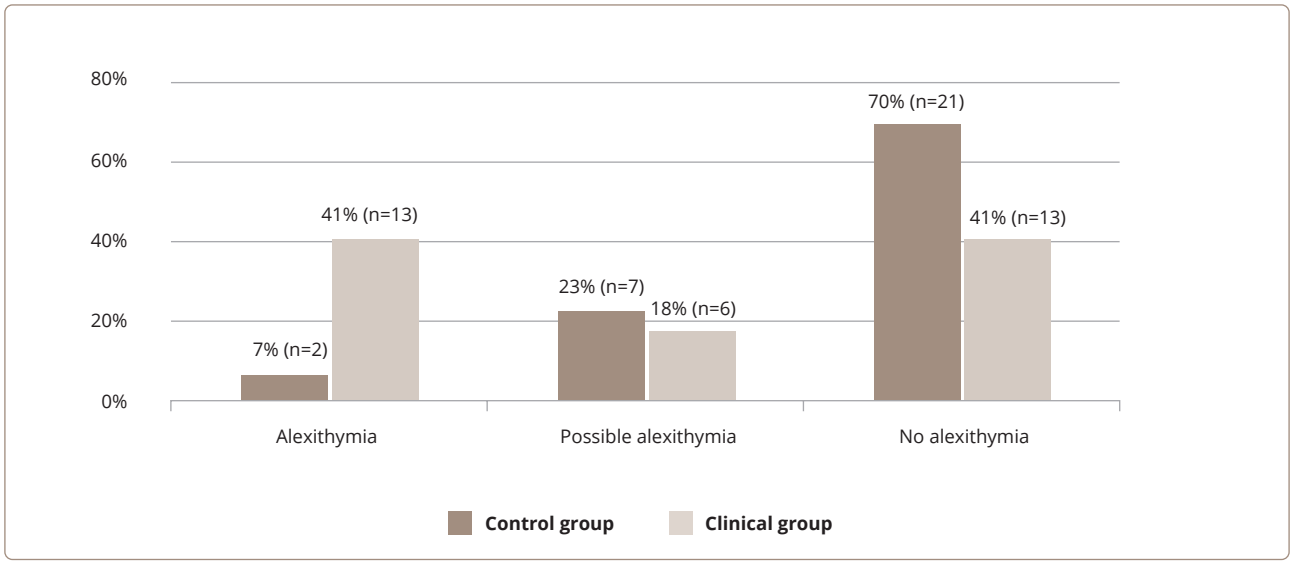

Figure 1. The level of alexithymia in the groups

suffering from schizophrenia spectrum disorders, has specific differences, compared to the fear of being laughed at among healthy individuals. The differences are not just quantitative, but also qualitative, and they may crucially distort humour and laughter perception, along with the behavioural reaction to humour in these patients.

CONCLUSIONS

As expected, both patients with schizophrenia and depression with signs of a high clinical risk of psychosis, had a lower emotional expression to humour perception compared to the controls. Similarly, the patients showed no emotional reaction to the comic content, compared to the neutral content.

Consistent with earlier data, gelotophobia was significantly higher among patients with schizophrenia spectrum disorders, compared to the healthy controls. The fear of being laughed at, correlated with a lower frequency of grins among the patients in relation to the comic video, while among the controls this reaction was not in evidence.

Gelotophobia was related to trait anxiety in both groups, but only in the clinical group was it associated with increased state anxiety, measured both before and after watching the comic video. Thus, the study provides evidence that humour perception, even of an innocent nature, may evoke anxiety among patients with schizophrenia spectrum disorders, which is related to gelotophobia.

Unsurprisingly, alexithymia was higher among the patients, and gelotophobia was associated with it. Nonetheless, it is interesting that this association was twice higher among patients compared to the controls.
Thereby, gelotophobia has not only quantitative, but also qualitative specifics in patients with schizophrenia spectrum disorders, compared to healthy controls, and it is related to an emotional response to humour perception.

Limitations

The present study has several limitations. Firstly, due to organizational issues, the clinical group consisted only of male participants. Further research with female patients is needed to clarify possible gender differences. Secondly, the study lacked technical equipment, for example, with the help of specialized computer programs it could be possible to register the facial expression of the participants more accurately. Thirdly, all the patients were assessed after antipsychotic treatment and, despite the low intensity of the side effects, the higher dosage in patients with first psychosis could also influence the difference between groups.

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Immunoinflammatory Profile in Patients with Episodic and Continuous Paranoid Schizophrenia

Иммунологический профиль у пациентов с эпизодической и непрерывной параноидной шизофренией

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ABSTRACT

Introduction. Associations of disturbances in innate and adaptive immunity during the clinical course of schizophrenia have been found in a number of studies. Yet, the relationship of immune parameters and systemic inflammation in relation to the clinical course of the disease and its prognosis, remains poorly understood, which highlights an interesting topic for further research. The goal of this study was to research the immuno-inflammatory changes in patients with clinical continuous and episodic paranoid schizophrenia, to assess the pathogenetic significance of these changes.

Methods. Thirty-six patients with paranoid schizophrenia, of which 20 had episodic symptoms and 16 had continuous symptoms, consented to participate in the study, together with 30 healthy volunteers. In the study we assessed the parameters of innate immune response (serum levels of key pro-inflammatory and anti-inflammatory cytokines, C-reactive protein) and the adaptive immune response, including humoral-mediated immunity (serum immunoglobulins IgA, IgM, IgG, circulating immune complexes), as well as the cell link of adaptive immunity (key lymphocyte subpopulations). Positive and negative symptoms were assessed with the positive and negative symptoms scale; frontal dysfunction was assessed by Frontal Assessment Battery (FAB).

Results. Both patient groups had higher than normal levels of C-reactive protein and IL-8. There was a significant elevation of circulating immune complexes among patients with continuous symptoms of schizophrenia, compared to patients with episodic symptoms and healthy controls. Levels of CD45+CD3+ lymphocytes (T-cells) differed between clinical groups, with higher values identified among patients with episodic symptoms and lower values among

those with continuous symptoms. In addition, patients with episodic symptoms had significantly increased levels of CD45+CD3+CD4+CD25+CD127- regulatory T-cells. Finally, the level of CD45+CD3-CD19+ B-cells was significantly higher among patients with continuous symptoms vs. patients with episodic symptoms and the control groups. Markers of activation of humoral immunity were associated with the severity of frontal disorders in these patients.

Discussion. Comprehensive data on the serum level of cytokines and the parameters of adaptive immunity among individuals with continuous schizophrenia, by comparison with patients with episodic schizophrenia, are practically absent in the literature. We have shown that among those with continuous schizophrenia, there are signs of systemic inflammation and chronic activation of the adaptive humoral immune response, while among patients with episodic symptoms of the disease, there are signs of systemic inflammation and certain activation of cell-mediated immunity, without significant changes in the humoral link of adaptive immunity.

Conclusion. More studies are needed, but the data obtained in this study are important for subsequent clinical studies of new treatment methods, based on various immunophenotypes of schizophrenia.

АННОТАЦИЯ

Обоснование. В ряде исследований были выявлены нарушения врождённого и приобретённого иммунитета на различных клинических стадиях шизофрении. Тем не менее связь иммунных параметров и системного воспаления с клиническим течением заболевания и его прогнозом остаётся малоизученной, что указывает на весьма перспективную тему для дальнейших исследований.

Цель. Оценка патогенетической значимости иммуновоспалительных изменений у больных с различным (эпизодическим или непрерывным) клиническим течением параноидной шизофрении.

Материал и методы. В исследовании приняли участие 36 пациентов, страдающих параноидной шизофренией, из них 20 с эпизодическим течением, 16 — с непрерывным, и 30 здоровых добровольцев. В ходе исследования оценивались параметры врождённого (уровни ключевых провоспалительных и противовоспалительных цитокинов, С-реактивного белка в сыворотке) и приобретённого иммунного ответа, в том числе гуморального (уровни IgA, IgM, IgG, циркулирующих иммунных комплексов в сыворотке) и клеточного (ключевые субпопуляции лимфоцитов) звена адаптивного иммунитета. Выраженность позитивной и негативной симптоматики оценивалась с помощью шкалы оценки позитивных и негативных симптомов, выраженность лобной дисфункции — с помощью теста «Батарея лобной дисфункции».

Результаты. Обе группы пациентов имели повышенные уровни С-реактивного белка и IL-8. Наблюдалось значительное повышение уровня циркулирующих иммунных комплексов у больных с непрерывным течением параноидной шизофрении в сравнении с эпизодическим течением и контрольной группой. Уровни CD45+CD3+ лимфоцитов (Т-клетки) различались между клиническими группами пациентов, при этом более высокие значения наблюдались при эпизодическом течении, а более низкие — при непрерывном. Кроме того, у пациентов с эпизодическим течением значительно повышался уровень CD45+CD3+CD4+CD25+CD127- регуляторных Т-лимфоцитов, в то время как концентрация CD45+CD3-CD19+ В-клеток была значительно выше у больных с непрерывным течением, при этом уровень маркеров активации гуморального иммунитета в этой группе коррелировал с выраженностью лобной дисфункции.

Обсуждение. В доступной литературе практически отсутствуют результаты исследований по изучению содержания цитокинов в сыворотке и параметров адаптивного иммунитета при непрерывном течении шизофрении в сравнении с эпизодическим. В представленной работе показано, что при непрерывном течении шизофрении наблюдаются признаки системного воспаления и хронической активации гуморального звена

адаптивного иммунного ответа, в то время как при эпизодическом течении — признаки системного воспаления и некоторой активации клеточного звена без существенных изменений гуморального ответа.

Заключение. Данные, полученные в рамках представленной работы, важны для последующих клинических исследований новых методов лечения, основанных на различных иммунофенотипах шизофрении.

Keywords: *adaptive immunity; cytokines; inflammation; innate immunity; schizophrenia.*
Ключевые слова: *приобретенный иммунитет; цитокины; воспаление; врожденный иммунитет; шизофрения.*

INTRODUCTION

Schizophrenia is a polymorphic mental illness, characterized by disorders of thinking, perception, impairments of memory, attention and executive functions. The prevalence of schizophrenia in Russia is around 1%, with most cases among young adults (peak incidences occur between the ages of 15 and 35). The socio-economic burden, associated with schizophrenia, is determined by a high percentage of disability and by high costs of treatment and maintenance.[1]

Signs of neuroinflammation, including chronic excessive activation of microglia and astrocytes, are found in schizophrenia.[2] According to the "mild encephalitis" hypothesis, low intensity neuroinflammation is a key pathogenetic mechanism in some patients.[2] It is suggested that neuroinflammation in schizophrenia can be attributed to infectious, autoimmune and traumatic factors, but its exact causes remain unknown.[2,4]

A series of evidence is being discussed relating to the role of systemic inflammation in the pathogenesis of schizophrenia.[3,5-10] There is a hypothesis that one of the leading components of the pathogenesis of this disease is immune dysfunction, associated with an increased risk of infections and autoimmune disorders (Figure 1). It has been shown that patients with schizophrenia have higher rates of exposure to pathogens such as toxoplasma gondii, cytomegalovirus and the human herpesvirus type 6. Patients with schizophrenia have an elevated risk of death from infectious diseases compared to controls, and a history of autoimmune disease has been associated with a 45% increase in the risk of developing schizophrenia.[4,11-14]

The role of immune disorders in the pathogenesis of schizophrenia is supported by epidemiological and molecular biological data. Thus, according to several studies, including meta-analyses, there are signs of increased activation of systemic inflammation among patients with schizophrenia, including elevated levels of the proinflammatory cytokines, including interleukin-1β (IL-1β), IL-8 and IL-6 in both blood serum and cerebrospinal fluid.[5-9] Schizophrenia is also characterized by an increase in the serum level of neutrophil activation markers that contribute to systemic inflammation (leukocyte elastase, a1-proteinase inhibitor), and the levels of these markers correlate with the activity of the disease.[10] In patients with nonpsychotic mental disorders, changes in the level of neutrophil activation markers are much less common.[15] In addition, the serum concentration of the chemokine, CCL2, which is involved in the migration of monocytes, memory T-cells and dendritic cells to the sites of inflammation, is increased in patients with schizophrenia.[16]

Certain studies have found associations of immune disturbances with clinical schizophrenia.[5,17-19] In the case of chronic schizophrenia, the proinflammatory cytokine profile was found to be different by comparison with acute schizophrenia, with increased levels of IL-1β and IL-6, however, no changes were evident with regard to other proinflammatory cytokines.[5] Increased CCL2 in schizophrenia is associated with treatment resistance, and high levels of C-reactive protein (CRP), an inflammatory marker, are associated with a more severe form of psychosis and a subsequent decrease in cognitive functions.[17-19] According to another study, the fluency of speech of patients with schizophrenia and schizoaffective disorder, that have elevated expression of the cytokines IL-1β, IL-2, IL-6, IL-8 and IL-18 in the blood, is significantly more impaired.[20] In addition, a 17% decrease in the volume of the left Broca's area was observed among patients with a high level of cytokines.[20]

Signs of neuroinflammation, most pronounced in the areas of the cortex that are most affected by the disease, are also found in studies of the post-mortal brain of patients with schizophrenia.[21,22] In the

prefrontal cortex of these patients, the mRNA level of the Interferon-Induced Transmembrane Protein (IFITM) is increased. One of the effects of the IFITM protein is the activation of the transcription factor NF-κB, which is a key factor in inflammatory cascades.[21] The expression of the proinflammatory cytokines, IL-1β, IL-6 and TNFα is also increased in the prefrontal cortex of patients.[22]

Among patients with schizophrenia, a number of changes in adaptive immunity are also present.[23-25] According to a meta-analysis of 16 works, the level of CD4 + T-helper cells, CD16 + CD56 + NK cells, naive B-cells and CXCR5 + memory T-cells, was increased among those with schizophrenia.[24,25] However, according to other data, the level of T-helper cells, as well as the ratio of CD4 + / CD8 + in schizophrenia are reduced, and the patients have impairments of T-cell activation.[23,26] Perhaps these contradictions are associated with different stages and forms of the disease of the examined patients.

There are data that suggest that the neutrophil/lymphocyte ratio, platelet/lymphocyte ratio and monocyte/lymphocyte ratio are higher during the relapse periods of schizophrenia, compared to the remission periods.[27] According to another study, inflammatory activation in schizophrenia, including excessive lymphocyte and monocyte activation, is currently independent of cardiometabolic risk factors.[28] Currently, studies of the effectiveness of anti-inflammatory drugs and immunomodulating agents in the treatment of schizophrenia are also of great interest.[29] Thus, research data indicate that there are numerous signs of systemic inflammatory response and dysregulation of the adaptive immunity in schizophrenia. However, in terms of the perplexity of the immune response (Figure 1), there is a lack of research into multiple immune parameters in schizophrenia[30] and their relationships in terms of the clinical course of schizophrenia and its outcomes; this is a promising aspect of the investigation shown in Figure 1.

Both the innate and the adaptive immune system involve a cell-mediated (immune cells) and humoral-mediated (immunoglobulins and complement) response. The activation of innate immune cells causes inflammation and stimulates the presentation of antigens to adaptive immune cells (T-lymphocytes and B-lymphocytes). When facing an antigen, the T-lymphocytes mediate cytotoxicity against the infected or altered cells and activate B-lymphocytes to proliferate and produce immunoglobulins. The activated immune cells are orchestrated by the variety of cytokines and produce acute phase proteins.

The goal of this research was to study the immuno-inflammatory changes among patients with various clinical symptoms of paranoid schizophrenia (episodic and continuous) compared with healthy controls. This was conducted in order to assess the associations of immunological changes with clinical symptoms and to provide a concurrent measurement of multiple immune parameters in both episodic and continuous schizophrenia.

MATERIAL AND METHODS

The study included 36 patients with paranoid schizophrenia (see Table 1) and 30 healthy volunteers with no mental disorders (13 men, 17 women), comparable in gender. The mean (± 95% confidence interval) age of the volunteers was 27.1±1.6 years, ranging from 23 to 33 years. The duration of maintenance antipsychotic therapy among patients, ranged from six months to two years; the duration of hospitalization before the assessment was three to four weeks. The compliance of the participants mental state at the time of the examination with the criteria for schizophrenia, according to ICD-10, constituted the inclusion criteria; informed written consent was also required to participate in the study. Patients with recurrent symptoms of schizophrenia (n=13) / first psychotic episode (n=7) (Group 1) and patients with continuous symptoms of schizophrenia (n=16) (Group 2) were included in the study. Continuous schizophrenia was defined clinically, according to DSM-5 criteria, by persistent symptoms fulfilling the diagnostic symptom criteria of the disorder that remained throughout the duration of the illness. Subthreshold symptom periods were very brief in relation to the overall symptoms and it was impossible to define distinct episodes. Among patients with episodic symptoms, the defect was stable and there were distinct psychotic episodes, with symptomatic remissions lasting more than six months. The exclusion criteria were severe somatic diseases, pregnancy, acute or exacerbated, chronic, infectious and inflammatory diseases during the two months preceding the examination or signs of drug or alcohol abuse.

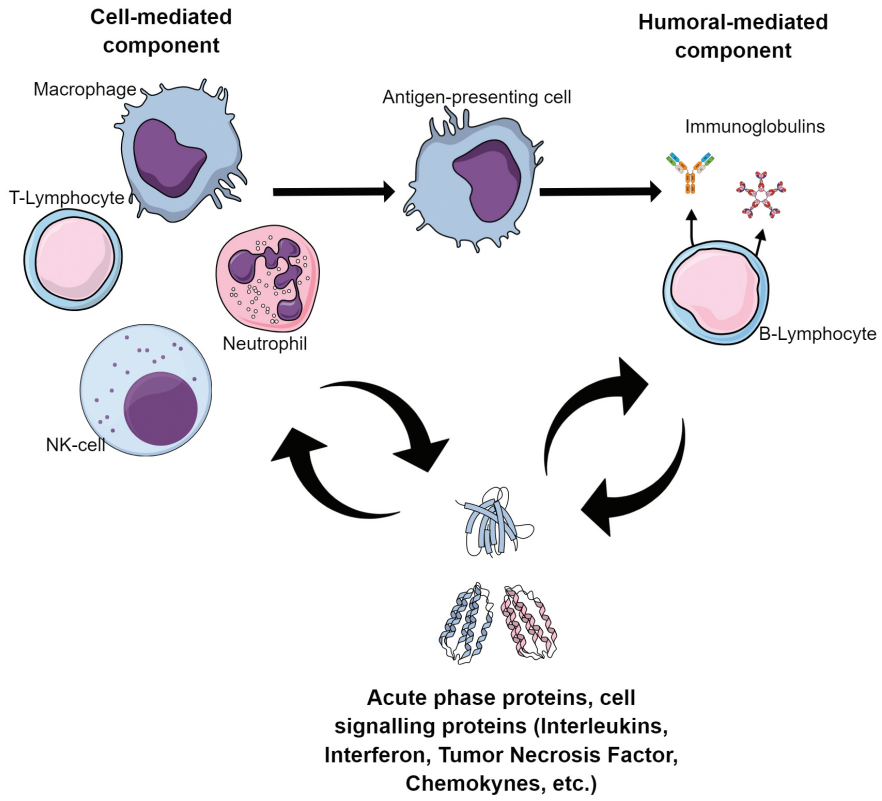

Figure 1. Key mechanisms of the immune response

The PANSS, BFCRS, Simpson-Angus Scale (SAS), Symptom Severity Scale of the DSM5 for schizophrenia (SS-DSM5) and the FAB scale were used in clinical assessments.[31]

We measured the parameters of humoral-mediated immunity (levels of Circulating Immune Complexes (CIC), immunoglobulins IgA, IgM, IgG), levels of signalling (IL-4, IL-6, IL-8, IL-10, IFNγ, TNFα) and acute phase (CRP) proteins. The parameters of the cell link of adaptive immunity were evaluated by multicolour flow cytometry, using monoclonal antibodies for the phenotyping of the differentiation antigens, CD3, CD4, CD8, CD16, CD19, CD25, CD45, CD56 and CD127 (Becton Dickinson, USA). To determine the concentration of proinflammatory cytokines (IL-4, IL-6, IL-8, IFNγ, TNFα), the pro-inflammatory acute phase protein CRP, the anti-inflammatory cytokine, IL-10, the markers of the humoral link of adaptive immunity CIC, the immunoglobulins (IgA, IgM, IgG) in blood serum by enzyme-linked immunosorbent assay (ELISA) and the commercial kits for ELISA by "Cytokine", "Vector Best" and "Hema" (Russia) were used.

For statistical processing, Excel software (Microsoft, 2010) and STATISTICA 10 (StatSoft, 2010) were used. The Shapiro-Wilk test was used to assess the normality of distribution. The results of immunological tests were presented as medians with an interquartile range. The Kruskell-Wallis test was used to assess the significance of differences between groups, with post-hoc, pair-wise comparisons conducted using the Mann-Whitney test. The results of the clinical assessment (age, duration of education and illness, results of clinical scales) demonstrated a normal distribution and were presented as means +- standard deviations. The Student's t-test was used to assess the significance of differences in the results of the clinical assessment between groups. The

frequencies distribution between groups was tested with the Chi-square test with continuity correction. The differences between groups were considered statistically significant at two-sided p <0.05. To estimate the correlations between variables, the Pearson correlation coefficient was used.

RESULTS

Table 1 shows the socio-demographic characteristics of the participants. The patients generally had fewer opportunities to progress to higher education or to be employed.

The clinical characteristics of patients are presented in Table 2. As can be seen, in the continuous course of schizophrenia compared with the episodic course, the patients exhibited a significantly greater severity of negative symptoms and cognitive disorders.

Table 3 summarizes the data on the immune parameters of patients with episodic and continuous symptoms, and those of the healthy control group. The assessment of the markers of systemic inflammation and adaptive immunity has shown that the levels in patients with schizophrenia differed significantly from those in the control group; these levels were characterized by pronounced heterogeneity and were affected by the course of the disease (Table 3).

Humoral component of immune system

There was a significant elevation of CIC in patients with continuous symptoms, by comparison with patients with episodic symptoms and healthy controls, whereas the levels of immunoglobulins did not differ.

Cell-mediated immunity

The levels of CD45+CD3+ lymphocytes (T-cells) differed between clinical groups, with higher values among those with episodic symptoms and lower values among those with continuous symptoms. Despite the fact that their levels in control group had intermediate values, there were no significant differences among the clinical groups of the controls. In addition, patients with episodic symptoms had significantly increased levels of CD45+CD3+CD4+CD25+CD127- regulatory T-cells. Finally, the level of CD45+CD3-CD19+ B-cells were significantly higher among the patients with continuous symptoms vs. patients with episodic symptoms and among the control groups.

Levels of cytokines and acute phase proteins

Both patient groups had higher than normal levels of CRP and IL-8, while the levels of other cytokines did not differ compared to the control group.

Correlations with clinical scores

Among patients with episodic symptoms, a moderate, negative correlation of the level of the anti-inflammatory cytokine, IL-10, with NSA-4 scale results was revealed ($r = -0.55$; $p < 0.01$).

Among patients with continuous symptoms, the level of CD45+CD3-CD19+ B cells and the level of the CIC showed a moderate, negative correlation with the FAB scale results ($r = -0.60$; $p < 0.01$), thus, a high level of activation of humoral immunity in this subgroup of patients, was associated with more pronounced cognitive impairment.

Therefore, the patients with continuous schizophrenia had an excessive activation of humoral immunity, that was associated with the severity of cognitive disorders and a moderate activation of systemic inflammation.

DISCUSSION

In this study we found multiple signs of immunological disturbances that differ, depending on the clinical course of schizophrenia. The main findings are summarized in Figure 2 below. While the levels of CRP and IL8 were increased in schizophrenia, irrespective of clinical groups, the patients with episodic symptoms demonstrated a significant increase of CD45+CD4+CD25+CD127-(/CD4+) cells, and patients with continuous symptoms had increased levels of CD45+CD3-CD19, B-cells and CIC vs. the control group. Interestingly, the numbers of CD45+CD3+ lymphocytes (T-cells) differed significantly among the clinical groups but not among the controls, were slightly increased among patients with episodic symptoms and were slightly decreased among patients with continuous symptoms.

Therefore, in summary, patients with episodic symptoms of schizophrenia were characterized by pronounced signs of systemic inflammation and a certain activation of cell-mediated immunity, without significant changes in the humoral link immunity. Conversely, patients with continuous schizophrenia had signs of active systemic inflammation and chronic activation of the humoral immune response.

An analysis of the literature shows that the relationship

Table 1. Socio-demographic characteristics of patients included in the study

Value/Groups	Continuous schizophrenia (n=16)	Episodic schizophrenia (n=20)	Control (n=30)	Statistics
Age on the date of assessment [1]	28.6 ± 6.8	27.6 ± 7.2	27.1 ± 1.6	t=-0.424; p=0.674
Gender distribution				
Male [2]	14 (88)	9 (45)	13 (43)	χ^2=9.264; p=0.01
Female [2]	2 (13)	11 (55)	17 (57)	
Family				
Married [2]	2 (13)	3 (15)	13 (43)	χ^2=8.277; p= 0.082
Divorced [2]	1 (6)	1 (5)	-	
Never married [2]	13 (81)	16 (80)	17 (57)	
Education				
Lower secondary [2]	1 (6)	3 (15)	-	χ^2=29.597; p<0.001
Secondary [2]	2 (13)	3 (15)	-	
Specialized secondary [2]	4 (25)	1 (5)	-	
Incomplete higher [2]	6 (38)	4 (20)	4 (13)	
Higher [2]	3 (19)	9 (45)	26 (87)	
Duration of education in years [1]	13.9 ± 1.5	13.6 ± 2.5	16.6 ± 1.0	t=-0.422; p=0.675
Labor status				
Student [2]	2 (13)	5 (25)	9 (30)	χ^2=29.545; p<0.001
Employed [2]	2 (13)	7 (35)	19 (63)	
Unemployed, pre-retirement [2]	5 (31)	7 (35)	-	
Disabled, absolute (%)	7 (44)	1 (5)	2 (7)	
Age of prodromal symptoms onset [1]	15.3 ± 3.8	20 ± 5.9	-	t=2.758; p=0.009
Age of manifest [1]	19.2 ± 5.2	25 ± 6.3	-	t=2.961; p=0.006
Age of first apply for medical help [1]	19.2 ± 4	25.7 ± 7	-	t=3.302; p=0.002
Age of first hospitalisation [1]	19.3 ± 4.1	25.7 ± 6.9	-	t=3.271; p=0.003
Duration of illness from the prodromal symptoms [1]	13.3 ± 6.2	7.7 ± 4	-	t=-3.281; p=0.002
Duration of illness from the manifest [1]	9.4 ± 6.3	2.7 ± 3.2	-	t=-4.144; p<0.001

p - values for t-test are provided for differences between the two groups.
[1] Results are presented as means (± standard deviation), statistics – as t and p (t-test)
[2] Results are presented as n (%), statistics – as χ^2 and p

Table 2. Clinical indicators of patients included in the study

Scale	Episodic schizophrenia (n=20)	Continuous schizophrenia (n=16)	t-test
PANSS total	89.9 [81.1, 98.7]	112.6 [105.5, 119.7]	t=4.075;p<0.001
PANSS P	24.1 [20.2, 28]	25.6 [21.4, 29.8]	t=0.550; p=0.586
PANSS N	20.6 [17.1, 24.1]	32.9 [30.3, 35.5]	t=5.675; p<0.001
PANSS G	45.2 [41.4, 49]	53.8 [50.2, 57.4]	t=3.397; p=0.002
BFCRS	6 [2.6, 9.4]	8.3 [3.3, 13.3]	t=0.830; p=0.413
NSA-4	13.7 [11.6, 15.8]	24.2 [21.7, 26.7]	t=6.837; p<0.001
Simpson-Angus Scale (SAS)	1.6 [0.7, 2.5]	2.4 [1.4, 3.4]	t=1.254; p=0.219
Symptom severity scale of the DSM5 for schizophrenia (SS-DSM5)	12.3 [11.1, 13.5]	15.4 [14.1, 16.7]	t=3.682; p=0.001
Frontal assessment battery (FAB)	15.1 [14.3, 15.9]	13.2 [12.1, 14.3]	t=-3.022; p=0.005

Results are presented as means [95% CI]

of systemic inflammation and dysregulation of adaptive immunity in relation to the clinical course of schizophrenia, have not been extensively studied. There are data which demonstrate that in patients with the first episode of schizophrenia, the level of IL-1β, IL-2, IL-8, IL-4, IFNα and TNFα increased, and the content of pro-inflammatory cytokines, IL-1β, IL-8 and TNFα remained increased even after eight weeks of antipsychotic therapy with risperidone or haloperidol.[32] A limitation of this work was that it did not include patients with repeated psychotic episodes and with continuous symptoms of the disease. Another study has shown that changes in the clinical blood test (neutrophil/lymphocyte ratio, platelet/lymphocyte ratio and monocyte/lymphocyte ratio) are more prominent during the relapse periods of schizophrenia, compared to remission periods.[27]

In our study there was no significant increase of TNFα among patients with episodic or continuous schizophrenia, although IL-8 was increased. Certain authors report an increase in serum TNFα among patients with schizophrenia. One possible reason for this discrepancy is that antipsychotic therapy reduces the production of certain proinflammatory cytokines in schizophrenia, including TNFα.[33] The extent of this effect has not been studied in detail and may be dependent on the duration of therapy and the drugs used.

According to *in vitro* studies, conducted by Ryazantseva et al. among patients with schizophrenia, there is an imbalance in the production of Th1 and Th2 cytokines by lymphocytes and signs of inhibition of the T-cell link of the immune system; these changes are most pronounced with regard to chronic symptoms of the disease.[34] The results are consistent with our data on the serum levels of these cytokines. According to a meta-analysis,[5] in acute schizophrenia, the levels of IL-6, TNFα and the receptor antagonist, IL-1RA are elevated, while in chronic schizophrenia, the same meta-analysis showed an increase in the levels of IL-1β and IL-6. Acute schizophrenia was defined as hospitalization in connection with a psychotic episode or chronic schizophrenia, following an examination of patients receiving outpatient treatment. It should be noted that comprehensive data on the serum level of the main cytokines and the characteristics of adaptive immunity among those with continuous symptoms of schizophrenia, by comparison with episodic symptoms, are practically absent in the literature. We have shown for the first time that in relation to continuous schizophrenia, changes in the adaptive immune response with a predominance of activation of its humoral link are of primary importance, although moderate signs of activation of systemic inflammation, do persist in patients. In particular, an increase in the content of CIC, which are formed as a result of the binding of exogenous or endogenous antigens by immunoglobulins (antibodies), indicates an inflammatory process with activation of the humoral link of adaptive immunity. The causes of this activation remain to be studied. It is possible that the activation of autoimmune

Table 3. Immunological parameters and systemic inflammation markers among patients with episodic schizophrenia (n=20), continuous schizophrenia (n=16) and among the controls (n=30)

Parameters		Episodic schizophrenia	Continuous schizophrenia	Controls
Humoral component parameters	**IgA**, [g/l]	2.97 (2.31; 3.35)	3.09 (2.17; 3.23)	2.79 (2.58; 3.09)
	IgM, [g/l]	1.43 (0.93; 2.09)	1.05 (0.73; 1.46)	0.9435 (0.71; 1.3)
	IgG, [g/l]	13.69 (9.73; 15.19)	13.62 (11.07; 15.81)	12.74 (10.15; 14.44)
	CIC, [units]	**73 (58; 104)****	**103 (84; 192)*,****	76 (54; 95.5)
Acute phase proteins, signalling proteins (cytokines)	**CRP**, [mg/l]	**5.48 (0.81; 20.33)***	**3.3 (1.93; 8.4)***	1.08 (0.38; 2.53)
	IL-4, [pg/ml]	2.33 (1.72; 4.61)	3.5 (1.06; 5.13)	4.19 (1.39; 8.31)
	IL-10, [pg/ml]	5.03 (2.62; 6.76)	5.91(3.03; 8.28)	4.28 (1.39; 8.31)
	IFNγ, [pg/ml]	44.69 (26.88; 138.78)	44.69 (19.38; 83.33)	28.5335 (20.31; 44.32)
	IL-8, [pg/ml]	**34.54 (11.19; 214.76)***	**40.16 (12.61; 94.15)***	11.81 (7.31; 23.59)
	TNFα, [pg/ml]	2.09 (1.75; 3.08)	1.62 (1.30; 2.23)	1.69 (1.40; 2.84)
	IL-6, [pg/ml]	6.27 (4.02; 67.20)	5.39 (2.55; 10.85)	4.262 (2.42; 8.27)
Cell-mediated component parameters	**CD45+CD3+**, [%]	**77.60 (74.60; 79.50)****	**71.05 (68.40; 74.20)****	75.95 (71.85;78.20)
	CD45+CD3+CD4+, [%]	44.00 (39.20; 47.70)	39.95 (38.10; 44.00)	43.65 (36.60; 48.40)
	CD45+CD3+CD8+, [%]	25.8 21.40; 31.20)	23.85 (22.00; 28.80)	26.3 (23.8; 27.00)
	CD45+CD3+CD4+CD25+CD127-, [%]	3.3(2.65; 3.45)	1.85 (1.40; 3.05)	2.45 (2.15; 3.30)
	CD45+CD3+CD4+CD25+CD127- % from CD45+CD3+CD4+ lymphocytes, [%]	**6.85 (6.05; 7.50)***	4.90 (3.6; 6.9)	4.75 (4.60; 5.55)
	CD45+CD3-CD16/56+, [%]	10.60 (7.10; 13.40)	11.90 (9.60; 16.50)	11.90 (8.30; 16.50)
	CD45+CD3+CD16/56+, [%]	3.40 (2.40; 6.40)	3.90 (2.60; 8.00)	4.9 (1.30; 7.50)
	CD45+CD3-CD19+, [%]	**10.40 (8.00; 13.00)****	**14.00 (11.00; 18.30)*,****	11.40 (9.70; 12.20)

The results are presented as Median (25 quartile; 75 quartile). * - differences with controls, p<0.05.
**** - differences between groups, p<0.05.**

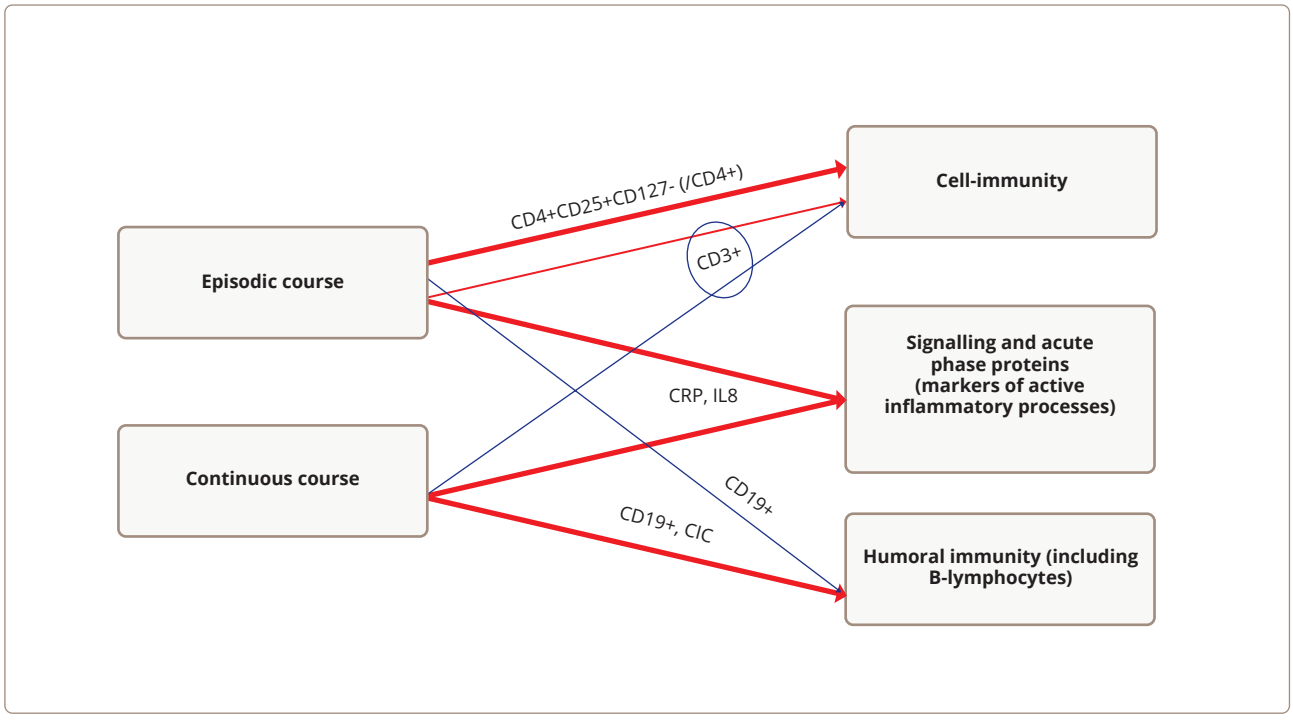

Figure 2. Key results of the study.

Note: red – increase vs. control, dark blue – decrease vs. control. Thick line – statistically significant difference vs. control; thin – non-significant difference vs. control; circle – difference between clinical groups.
CRP – marker of active inflammation; IL8 – proinflammatory chemokine; CD19+ - B-lymphocytes; CIC – CD3+ T-cells; CD4+CD25+CD127- (/CD4+) - regulatory T-cells (% from CD45+CD3+CD4+ lymphocytes)

processes may take place among certain patients

According to the literature (see, for example, a review[35]), in a number of schizophrenic patients, antibodies to NMDA receptors and other central nervous system proteins are detected in the peripheral bloodstream. Based on our results, it can be assumed that patients with continuous symptoms of the disease and signs of excessive activation of humoral immunity, are a risk group for the possible presence of autoimmune diseases, and an examination may be necessary in these patients to exclude a hidden autoimmune pathology.

According to our data, with regard to the episodic course of the disease, there was a pronounced complex activation of the mechanisms of systemic inflammation. An increase in CRP is a marker of acute and chronic inflammatory processes, both infectious and endogenous. In addition, there was an increase in the level of the pro-inflammatory cytokine, IL-8, which is involved in the chemotaxis of neutrophils, monocytes and lymphocytes to the site of the inflammatory reaction. There was also an increase in regulatory T-cells, which, taking into account the increased level of a number of markers of systemic inflammation, could indicate compensatory activation of immunoregulatory mechanisms. Further studies are required to determine the causes and clinical significance of these changes. At the same time, the activation of immunoregulatory mechanisms in certain patients may have a protective role and also requires further study.

A correlation analysis showed that among patients with continuous symptoms of schizophrenia, the severity of cognitive impairment was associated with a higher level of CIC and B-cells, and among those with episodic symptoms, the level of the anti-inflammatory cytokine, IL-10, was associated with clinical indicators; it negatively correlated with the severity of negative symptoms in patients. These novel data confirm the possible clinical and pathogenetic significance of the detected immune changes in various types of schizophrenia, and indicate the prospect of studying the effectiveness of various approaches to immunomodulating therapy, within the framework of the comprehensive rehabilitation of patients with schizophrenia, depending on the clinical course and immune disorders.

According to contemporary theoretical concepts, the heterogeneity of immunological changes in schizophrenia may reflect the presence of several immunophenotypes of the disease, with various pathogenesis features. Thus, it is assumed that there is an immunophenotype with a predominance of activation of systemic inflammation, the main marker of which may be an increased level of IL-6, and an immunophenotype with excessive activation of the humoral link of adaptive immunity, accompanied by an increase in the level of autoantibodies to NMDA receptors.[28] Schizophrenia immunophenotypes may have prognostic features and may require different approaches to therapy, but at the same time, an analysis of the available literature shows that their relationship with the clinical characteristics of the disease is not well understood, limiting the possibility of clinical data translation. Our results show that patients with an episodic course of schizophrenia differ in prevailing immune changes from patients with a continuous course. The data obtained may be important for the development of personalized approaches to immunotherapy in various variants of the clinical course of schizophrenia.

Discussing the limitations of this work, it should be noted that it is of interest to study immunological changes in other variants of the course of schizophrenia, that have not been studied in the framework of the present study. It should also be noted that the patients were enrolled into the study after three to four weeks of hospital treatment, and the immune parameters could be affected by antipsychotic treatment. In addition, it would be important to replicate the results in larger studies, applying the correction for multiple testing.

CONCLUSION

An analysis of available literature shows that studies providing a comprehensive assessment of the markers of the cell and the humoral link of adaptive immunity, in combination with the parameters of systemic inflammation in schizophrenia, are still lacking. Virtually no study has been undertaken regarding the level of immunoinflammatory markers, depending on the clinical dynamics of schizophrenia: in most studies, patients are considered within the general sample or a division into acute and chronic schizophrenia is carried out. Very few works are devoted to the study of immunoinflammatory disorders in schizophrenia, examining the nature of the course and the prevailing symptoms, as well as studying the relationship between immunological parameters and neurophysiological changes in patients. This study made it possible to obtain new data on the characteristics of the cytokine profile and the nature of the main changes in the immune response depending on the course of schizophrenia. This helped determine the relationship between multiple immunological and clinical changes among patients with continuous and episodic symptoms of schizophrenia. The data obtained are important for future clinical studies of new treatment methods, based on the medical and physical methods of correction of systemic disorders, in various immunophenotypes of schizophrenia.

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Suicides in the COVID-19 Pandemic — Are We Well Informed Regarding Current Risks and Future Prospects?

Самоубийства во время пандемии COVID-19 - хорошо ли мы осведомлены о текущих рисках и перспективах?

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ABSTRACT

Background. Suicides are predicted to drop in the acute phase of any crisis that poses a threat to the entire population, though data on this are inconsistent. A pandemic is the most severe global crisis one can imagine. There is an urgent need to identify objective trends in suicide rates across countries and populations in a real-time manner in order to be better informed regarding prospects and adaptation of preventive strategies.

Objectives. To evaluate suicidal behaviour in a metropolis immediately after the introduction of severe containment measures due to the pandemic.

Methods. Cases of completed suicides in St. Petersburg were obtained from the local city Bureau of Forensic Medical Examinations for the period 1 January 2016 to 31 July 2020. Data were accurately collected and monthly frequencies per 100,000 of the population in April-May 2020 (introduction of the most severe “stay at home” measures) were compared with corresponding data from 2016-2019. Confidence intervals were calculated according to Wilson.

Results. Suicide frequencies in the population of St. Petersburg in April 2020 did not go up, in contrast, they were 30.3% lower than the average for the previous four years. The decrease in April was more pronounced in males than in females (36.3% and12.4%, respectively). When looking at age groups it was found that the biggest drop in suicides was in older males (> 55 years). In this group, suicide indices were 58.5% lower than average for the previous four years. However, in females, there was a 50% rise in suicides in June, while in young males (15-34 years) there was an 87.9% rise in May. Total number of suicides for the first half of 2020 was very close to the average seen in previous years. None of the registered changes were statistically significant.

Conclusions. The analysis is preliminary and does not account for possible seasonality, however, we consider that the reduction in completed suicides immediately after crisis exposure deserves attention. It supports views that in the acute phase of the crisis, suicidal behaviour may decline, which may be quickly replaced by a rise. Such a rise in females and younger males points on possible risk groups and requires a response from society. More studies are needed to have a clearer picture of suicide dynamics in Russia during the different waves of the pandemic, and prevention should be prioritized regardless of the tendencies.

АННОТАЦИЯ

Обоснование. В острой фазе любого кризиса, представляющего угрозу всему населению, предполагается снижение числа суицидов, в то же время данные на этот счет неоднородны. Пандемия является наиболее тяжелым глобальным кризисом из всех возможных. Таким образом, в этот период представляется крайне важным в режиме реального времени проследить объективные тенденции уровня самоубийств в разных странах и популяциях для получения информации и своевременной адаптации профилактических мер.

Цель. Оценить суицидальное поведение в мегаполисе сразу после введения жёстких мер по самоизоляции в связи с пандемией.

Материал и методы. Городским Бюро судебно-медицинской экспертизы Санкт-Петербурга предоставлены данные о всех подтверждённых случаях самоубийств в Санкт-Петербурге с 1 января 2016 г. по 31 июля 2020 г. Получены данные по ежемесячной частоте суицидов на 100,000 жителей, результаты за апрель-май 2020 г. (период, когда действовали наиболее строгие ограничения) сравнивали с соответствующими данными 2016–2019 гг. Доверительные интервалы вычисляли по методу Уилсона.

Результаты. Частота самоубийств среди жителей Санкт-Петербурга не повысилась в апреле 2020 г., напротив, она была на 30,3% ниже, чем в среднем за предыдущие четыре года. Снижение частоты суицидальных случаев в апреле было более выраженным среди мужчин — 36,3% против 12,4% у женщин. Статистика самоубийств по возрастным группам продемонстрировала явное снижение их числа среди мужчин старшего возраста (>55 лет) — на 58,5%, чем в среднем за предыдущие четыре года. Частота самоубийств повысилась на 87,9% в мае среди молодых мужчин (15–34 года) и на 50% в июне среди женщин. Общее количество самоубийств в первой половине 2020 г. было очень близко к среднему за предыдущие годы. Ни одно из зарегистрированных изменений не было статистически значимым.

Заключение. Несмотря на то, что данный анализ является предварительным и не учитывает возможные сезонные факторы, мы считаем, что снижение количества завершённых самоубийств непосредственно после кризисной ситуации заслуживает внимания. Эти данные поддерживают представление о том, что в острой фазе кризиса может наблюдаться спад суицидального поведения, который затем быстро сменяется его ростом. Выявленный рост частоты самоубийств среди женщин и молодых мужчин указывает на возможные группы риска и требует реакции общества. Необходимы дальнейшие исследования, чтобы получить более чёткое представление о динамике самоубийств в России во время разных волн пандемии. Независимо от тенденций, приоритет должен отдаваться профилактике.

Keywords: *suicide; COVID-19; pandemic; crisis; acute phase; containment measures.*
Ключевые слова: *самоубийства; COVID-19; пандемия; кризис; острая фаза; самоизоляция.*

INTRODUCTION

The COVID-19 pandemic has dramatically changed the life of billions of people all around the world. Among the many anticipated negative health effects, there has been concern from psychiatrists and psychologists about the increasing risk of suicide.[1,2] Some of the authors have

even used the theory of a "perfect storm" for modelling possible consequences of a pandemic for suicidal behaviour.[3] There were concerns expressed that risk may increase due to the anxiety, depression and sleep disturbances during social isolation, economic stress and unemployment, fear of catching the disease, distress due to family members suffering from the disease, stigmatization of patients with COVID-19 and their families, as well as alcohol consumption and domestic conflict during quarantine.[4,5] Quickly-organized studies (mostly internet surveys) have revealed that feelings of being stressed, depressive symptoms and anxiety have increased during the harshest containment measures, especially in students, women, and medical staff.[6-8] Negative expectations were expressed widely, however objective studies are essential to evaluate the suicide risk in any specific crisis, social situation, or disaster, with regard to most vulnerable demographic, social and occupational groups.

Humanity has experienced several severe epidemics that may serve as quasi-experimental situations relevant in this sense. Therefore, the question is what can be learned regarding changes in suicide rates from previous cases? Quite surprisingly, the information appears to be limited and inconsistent. In the 1990s, American suicidologist Ira Wasserman, used official statistics to assess the impact on suicide deaths of three major social events in the USA in the period from 1910 to 1920: World War I (1914-1918), the Spanish flu pandemic (1918-1920) and the introduction of the "prohibition law" (since 1919). According to his analysis, the war did not have any effect, the pandemic led to an increase in rates of suicide, while alcohol restrictions led to a decrease.[9] Later, in a study from Hong Kong, where the SARS epidemic had caused high mortality between 1993 and 2004, authors have found a significant increase in suicide rates among older people (>65 years) once the peak of the epidemic had passed.[10]

This scanty list gives the impression that previous pandemics (or more local epidemics) did not attract much attention from suicidologists. However, attention was paid to other types of crises that confronted humanity across history, such as wars, natural catastrophes, and other disasters. Emile Durkheim, in his sociological study, has pointed out that such events usually lead to a lowering of suicide rates.[11] He discussed this from the point of view of the "pulling together" effect in society that unites people in the face of a critical threat. In support of this, several reports from different countries shortly after the announcement of the COVID-19 pandemic, have presented data that show that the number of suicide attempts and suicides did not increase, on the contrary, they seemed to go down during the introduction of "stay at home" orders.[12-14]

While this immediate effect may be understood from the point of view of sociological theory, further tendencies during a pandemic need much more attention and objective description. As a response to this challenge, an international initiative, COVID-19 Suicide Prevention Research Collaboration, was recently established. The initiative aims to monitor suicide rates and develop adequate prevention measures.[15] The initiative that now unites more than 30 countries, aims to provide a thorough analysis of the situation in a real-time manner. This implies better interdisciplinary interaction and communication, involving sociologists, psychologists, psychiatrists, forensic medicine specialists, and the law enforcement system. Here we provide our experience in establishing and developing such communication, which eventually resulted in some preliminary observations regarding the immediate change in suicide rates in St. Petersburg shortly after the introduction of the strict quarantine on 30 March.

MATERIAL AND METHODS

In the middle of April, the Ministry of Public Health of the Russian Federation issued a letter to the leading centres of psychiatric research requesting that they evaluate the possible evolution of risk for completed and attempted suicide in the pandemic. As a response to this request, V.M. Bekhterev National Medical Center of Psychiatry and Neurology, in collaboration with scientific and educational medical institutions in St. Petersburg, made an effort to collect relevant data. Our primary aim was to evaluate the possible changes in suicidal behaviour during the earliest phase of the crisis in St. Petersburg with the prospect of prolonging the observations and widening the catchment area. Numbers and demographic data of those who died by suicide from 1 January 2016 (first available year) to 31 July 2020 (the last point for confirmed suicides, previously referred to as "probable") were obtained from the St. Petersburg Bureau of Forensic Medical Examinations.

The initial data (suicide cases per month in absolute units) were recalculated as monthly frequencies per 100,000 of the population for the period 2016-2019 and were compared with corresponding months in 2020. The methods of Fisher, Clopper-Pearson, and Wilson were tested to calculate the confidence intervals (CI). Finally Wilson's method was selected. Demographic data on the population of St. Petersburg for the specified period were obtained from official sources (Rosstat).

RESULTS

In the current study, a set of suicide cases (n= 1.647) that occurred in St. Petersburg in the period from 1 January 2016 to 31 July 2020 is used. Of these cases, 427 were female and 1,220 male (M : F ratio = 2.857). Completed suicides for the whole population in the first seven months in 2016-2019 and separately in 2020 are presented in Fig. 1. A decrease in the frequency of suicides per month per 100,000 population can already be seen in March 2020. The frequency decreased by 18.3% (0.4446,

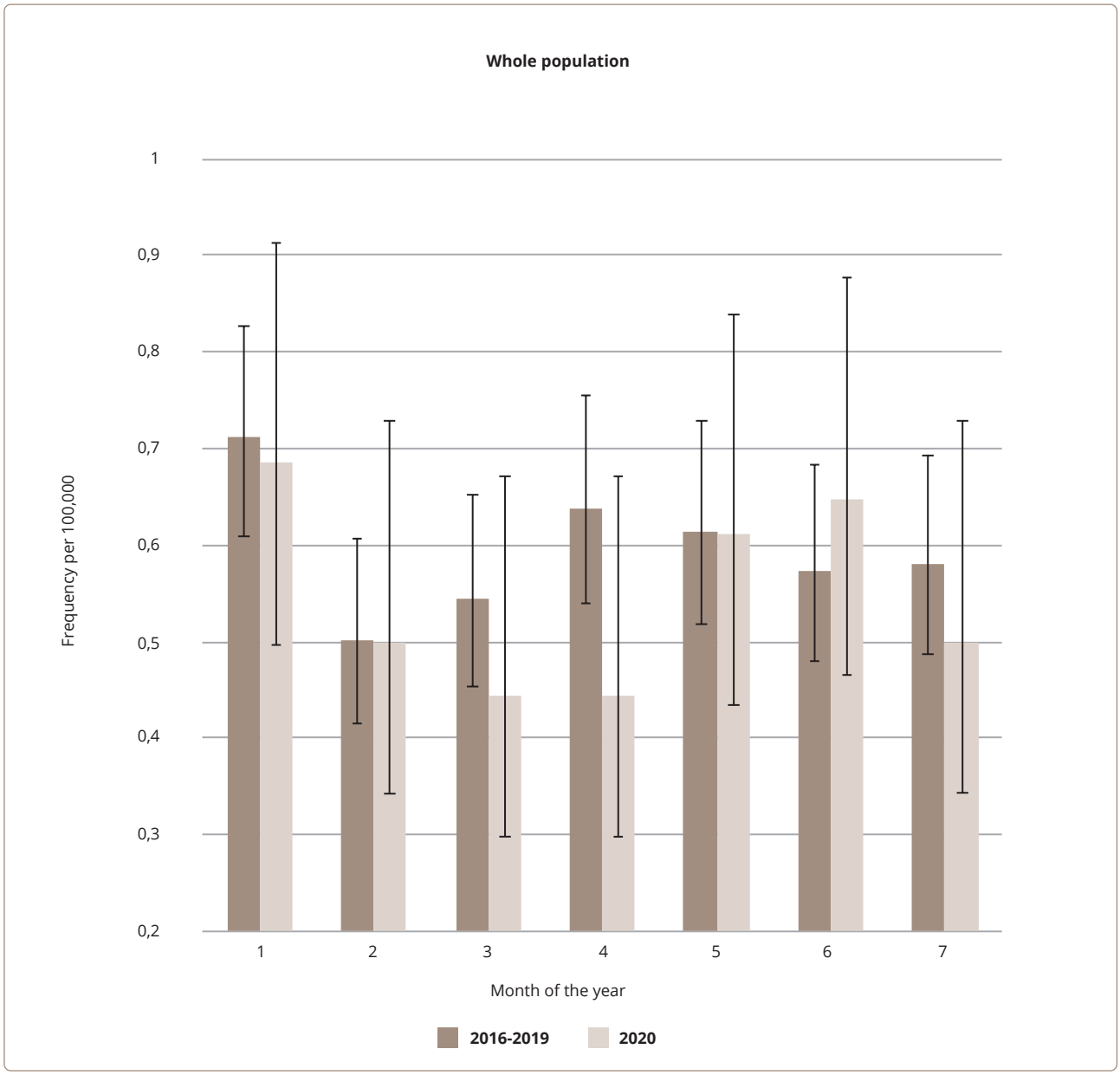

Figure 1. Suicide frequencies in St. Petersburg per 100,000 of the whole population in the first 7 months of the year 2020 in comparison to corresponding period average in 2016-2019

95% CI: 0.2988 – 0.6616 as compared with 0.5440, 95% CI: 0.4536 – 0.6525) with a more pronounced decrease in April of 30.3% (0.4446, 95% CI: 0.2988 – 0.6616) as compared with 0.6378 (95% CI: 0.5393 – 0.7544). However, this decline was not statistically significant. Subsequently, there was an increase of 13.3% in June and then a decrease of 14.0% in July. The total accumulated number of completed suicides in the first six months of 2020 constituted 93.8% of the average in the first six months in 2016-2019.

A closer look revealed that the decline in March and April 2020 was more pronounced among men (18.4% and 36.3%, respectively). For men, at the lowest point (April 2020) the frequency per 100,000 reached 0.5898 (95% CI: 0.3683 – 0.9446), though the fall was also insignificant. Among women, the decrease in the frequency of suicides per month in 2020 was 20.2, 12.4, and 23.8% in March, April, and May, respectively (the lowest level in May was 0.2293 (95% CI: 0.1161 – 0.4524). All changes were insignificant (Figures 2 and 3). The total number of male cases in the first six months of 2020 was 88.7% of the average for the same period in 2016-2019, whilst among women it increased by 10.2%.

It can be seen that after a short decline in the suicide frequency for males, the trend reversed in May, whilst

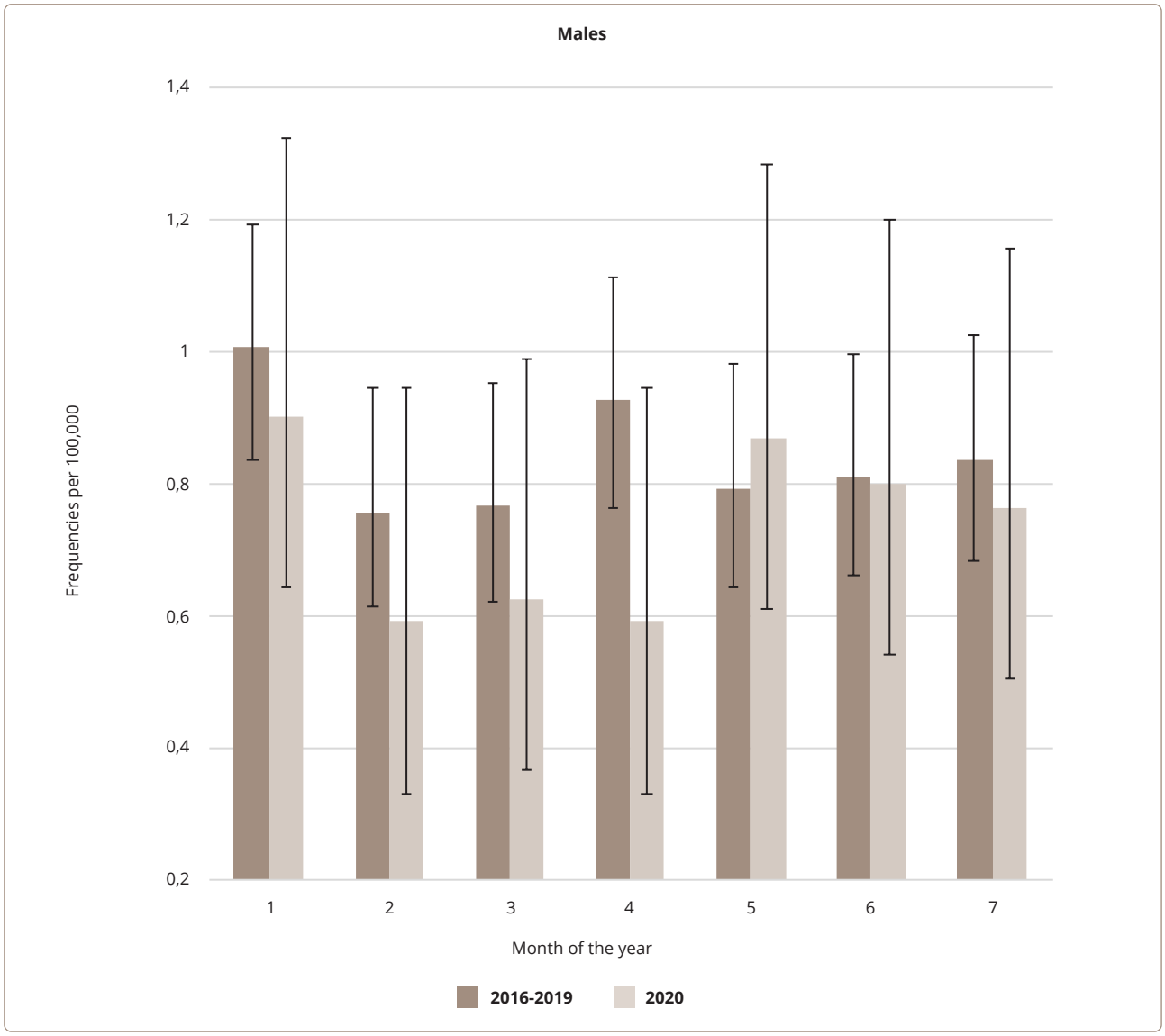

Figure 2. Suicide frequencies in St. Petersburg per 100,000 male population in the first 7 months in 2020 in comparison to corresponding period average in 2016-2019

for females, there was a 50% rise in June. None of the observed fluctuations in rates were significant. Since the most pronounced changes were seen in the male population, the fluctuations in the frequency of suicides in different age groups of men were scrutinized. Given the comparatively small number of cases per month, the following wide age groups were chosen: young (15-34), mature (35-54), adults (55-74), and seniors (>75). It was found that from January to March, among men of different age groups, the suicide rate changed direction, while in April a decrease was observed in all groups, with the most pronounced (58.3 and 58.7%) among men aged 55-74 years, and 75 years and over, respectively. By May, this decline gave way to a rise (87.9%), which was most pronounced among young men aged 15-34.

DISCUSSION

There is almost complete agreement in suicidology that in the acute phase of any crisis (war, terrorist violence, natural disaster, or mass infection) suicides usually go down.[16] The recent coronavirus crisis in this sense is a "perfect storm" – it is global rather than local, like a tsunami or an earthquake, and more dangerous than war conflict due to the inability to escape or identify the source of danger.[17] Since Durkheim, the main explanation for this effect is that the number of suicides goes down

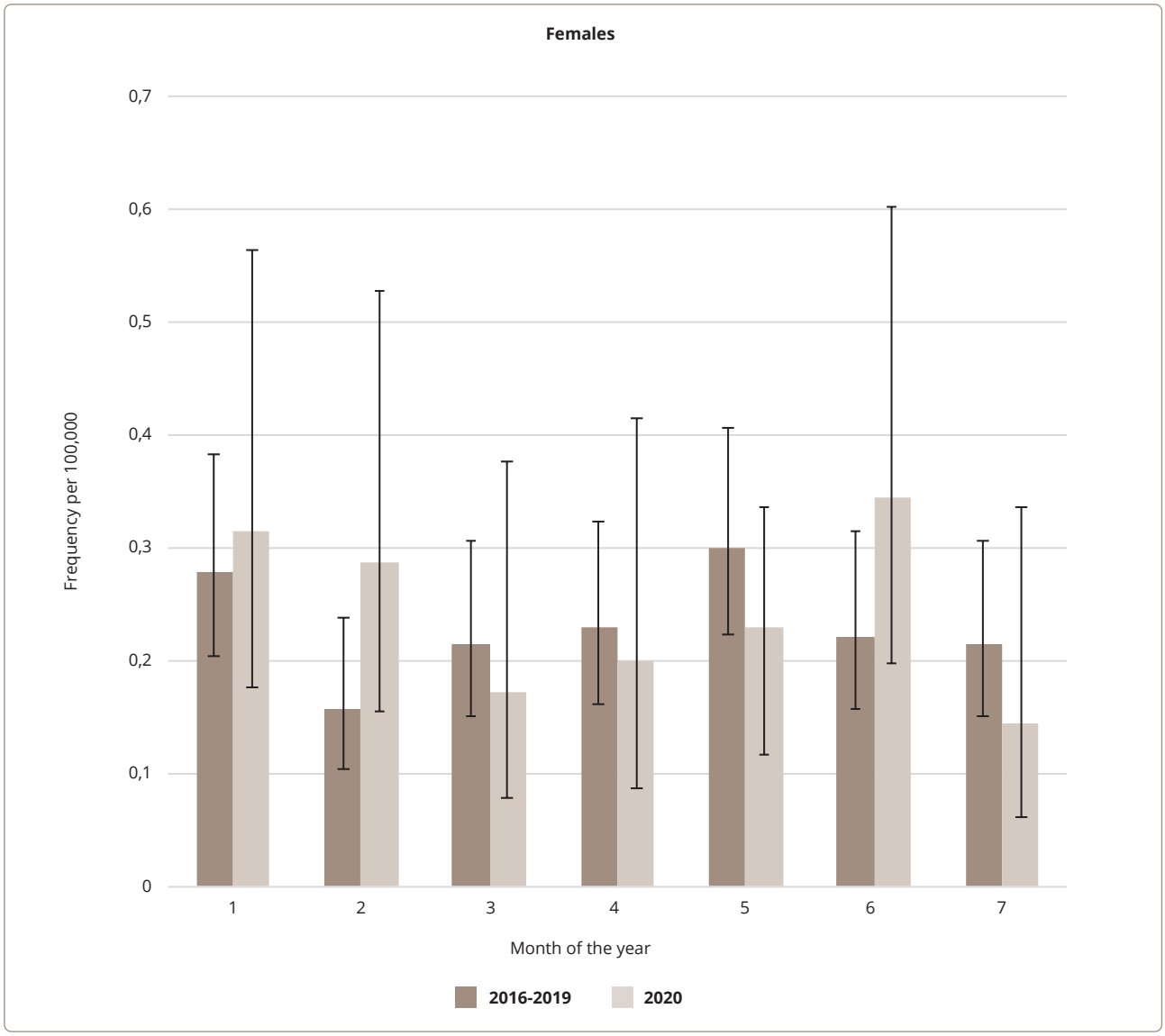

Figure 3. Suicide frequency in St. Petersburg per 100,000 female population in the first 7 months in 2020 in comparison to corresponding period average in 2016-2019

due to social integration and strengthening of the invisible links that make societies more united in the face of a danger to the whole population.[11]

Our results are consistent with these studies that find or predict a drop in suicide incidence in the acute phase of a crisis.[12-14] We have used a blunt method of evaluation of suicide incidence change known as excess mortality – comparison between incidence during the fixed period (i.e., April) in four to five previous years and in the index year, and covering adjusted periods. April is the best period from this point of view, since government containment measures had just been introduced, and they were rather harsh and severe (described by some authors as Draconian).[18] This can provide further explanations for the drop in the number of suicides. In this sense, it is necessary to mention that not only did the number of completed suicides fall, but also the number of attempted suicides, hospitalizations and referrals to mental health providers, as well as psychiatric emergency consultations.[19] This is confirmed by observations from St. Petersburg ambulance service, which registered a substantial drop in the number of self-intoxications in April, and by specialists in the clinical departments at the V.M. Bekhterev Center. Therefore, not only actualization of vital (adaptive) tendencies and societal cohesion, but also a decline in psychological (and even psychiatric) problems, may contribute to the observed tendency.[20]

Our evaluations have several limitations, including the inability to encounter and eliminate fluctuating seasonal peaks and falls and the influence of the general trend (over the last seven to ten years, suicide rates in Russia have been slowly, but consistently going down). However, we consider that our findings deserve some attention. The objective studies regarding suicide rates during a pandemic are still scarce and every piece of knowledge may be important. In each country, given the unique political, economic, social, and cultural situation, the change in suicide rates may differ. Moreover, within professional circles and the general public, our results may serve the goal of raising awareness regarding suicide.

These preliminary results should not become a reason for complacency and denial of a possible increase in suicides in the future. We would like to draw special attention to the quick reversal to a decrease in suicide rates in May in young males and in June in females. With the complete results from 2020, a clearer picture will appear, however, it is already necessary to develop more efficient (or adjust existing) preventive measures with an eye to future periods of the development of the pandemic situation. This is important in view of the possible accumulation of economic problems within families (in spite of all the compensatory measures taken by the government), such as rising unemployment, the bankruptcy of small businesses, as well as academic stress affecting young people who seem to be less resilient to global shocks and who have found themselves in a dramatically changed educational environment with online education.

The pandemic is not over, and new emerging waves are rather unpredictable. Several studies from other sites have already registered a disturbing evolution of suicides, for instance, in Japan after a reduction in suicide numbers (14%) in the first six months of the pandemic (February to June 2020), the monthly suicide rate increased by 16% during the second wave (July to October 2020), with a larger increase among females (37%) and children and adolescents (49%).[21] Some researchers are returning to records of mortality during the Spanish flu pandemic 100 years ago. For instance, in a study from Taiwan it was shown that during the first wave, when about 22% of the population were infected, suicide rates were no higher than expected, while in the second wave at a time when only 4.3% were infected, there was an increase in suicide indexes (33-35%) at the beginning of this wave.[22]

In a pandemic, new efforts are needed to organize and implement suicidal prevention measures. We fully agree with the statement that while we are waiting for a clearer picture, prevention measures must be prioritized.[23] Existing evidence-based studies provide a set of relevant strategies that require careful adaptation and tuning to be implemented in a pandemic situation. In Russia, along with the use of all the accumulated world experience, it would be reasonable to pay more attention to educational technologies, raising the status of suicidology as an academic discipline and generalizing the existing regional experience in suicide prevention.

CONCLUSIONS

We are providing preliminary evidence that during the period of most severe restrictions due to the COVID-19 pandemic in a metropolis of 5.5 million people in the north-western region of Russia, suicidal behaviour did not increase, on the contrary, it seems to have fallen.

This observation is consistent with the point of view that during the acute phase of a crisis, the number of suicides usually goes down. However, we are still not sufficiently informed regarding the situation with suicides across the huge territories and diverse ethnic and cultural groups of the Russian Federation. Further monitoring and data accumulation from wider populations and federal entities are needed to draw more informed conclusions regarding the impact of COVID-19 on suicide rates in Russia, with special attention to specific age groups. The decrease may turn into an increase when long-lasting effects accumulate, therefore even more effort is needed to enhance prevention activities.

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Mental Health in Australia and the Challenge of Community Mental Health Reform

Психическое здоровье населения Австралии и проблемы реформирования амбулаторной психиатрии

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ABSTRACT

Australia was one of the first countries to develop and implement a national mental health plan, 30 years ago. This national approach belied the country's federal structure, in which the federal government takes responsibility for primary care while state and territory governments manage acute and hospital mental health care. This arrangement has led to significant variations across jurisdictions. It has also left secondary care, often provided in the community, outside of this governance arrangement. This article explores this dilemma and its implications for community mental health, and suggests key steps towards more effective reform of this vital element of mental health care.

АННОТАЦИЯ

Австралия была одной из первых стран, в которой 30 лет назад была разработана и внедрена национальная программа по психическому здоровью. Такой национальный подход противоречил федеральной структуре страны, согласно которой федеральное правительство несёт ответственность за оказание первичной врачебной медико-санитарной помощи, а правительства штатов и территорий — за экстренную и стационарную помощь в области психического здоровья. Такая схема привела к значительным расхождениям между юрисдикциями. Кроме того, вторичная (специализированная) помощь, часто оказываемая в амбулаторных условиях, осталась за рамками этого механизма управления.

Данная статья исследует описанную дилемму и её последствия для амбулаторной психиатрической службы, а также предлагает ключевые шаги к более эффективной реформе внебольничной психиатрической службы.

Keywords: *community mental health; mental health planning; mental health systems.*

Ключевые слова: *амбулаторная психиатрическая служба; планирование психиатрической службы; система охраны психического здоровья.*

INTRODUCTION

Australia can point to repeated evidence ranking its health care system as one of the most effective in the world.[1] However, such assessments typically do not take mental health care into account. More recent analysis of international comparative data suggests the performance of Australia's mental health system is mixed at best.[2] One of the key reasons for this mixed performance has been a limited commitment to community mental health care.

As this article will demonstrate, despite early promising beginnings, Australia's approach to mental health care

has become increasingly fragmented and chaotic. While responsibility between governments is clear in relation to primary and tertiary levels of care, secondary care, typically provided in the community, has languished. As a result, for people with mental health problems deemed too complex for primary care, there is often little choice but to go to hospital and they may not receive community mental health services unless they are either acutely or severely unwell. A recent Victorian Auditor General report confirmed that area public mental health services only see 'the most unwell' people, creating significant service problems in other parts of the mental health 'system'.[3] A national approach to hospital avoidance and early intervention in the community has failed to emerge. This has resulted in large service gaps.

This article will review how this situation has developed. It will first provide an overview of the complicated arrangements by which Australia's nine governments share responsibility for different aspects of mental health care. The article will then give an overview of developments in community mental health care, particularly in the early stages of national commitment to mental health policies and plans. We will then provide an explanation of the current problems affecting community mental health care and point to some of the key issues to be resolved if progress is to be resumed. There is little doubt that the development of a robust and well-organized system of community mental health care is central to future national mental health reform efforts.

It is not possible to understand the Australian context without some appreciation of its political system. There are eight state or territory governments and one federal (national) government. Responsibility for health care, including mental health care, is split between state/territory and federal governments. The federal government is responsible for the national system of public health insurance, the Medicare Benefits Scheme (MBS) and the Pharmaceutical Benefits Scheme (PBS), which subsidizes medications. The MBS covers primary and allied health care in the community, particularly those services provided by general practitioners. The states and territories manage hospital-based health care, including emergency, inpatient and outpatient services. Australia's constitution provides the states and territories with autonomy in relation to health care, including mental health.[4] This has given rise to some variation between jurisdictions, for example, the mental health system of New South Wales (NSW) looks different to that of Victoria. Part of this difference is about how jurisdictions respond to their geography and demography, but it also reflects policy, funding and service choices made over time. Despite these regional differences, it is possible to see some important national trends in relation to community mental health. These will be the focus of this article.

MENTAL HEALTH CARE IN AUSTRALIA

Australian community-based mental health care developed gradually in the twentieth century, especially after World War Two.[5] This period saw the uncoordinated development of community clinics as well as community psychosocial support services, emerging from the charitable and welfare sectors. Australia was one of the first countries to embark on a national mental health strategy, with the first National Mental Health Policy published in 1992.[6] This progressive document referred to several key principles, including the rights and civil liberties of consumers and carers. A key goal was to enable the states and territories to close the long-term psychiatric institutions, thus permitting people with persistent mental illness to live in the community.

For this to occur, it would be necessary to close the old asylums and replace them 'with a mix of general hospital, residential, community treatment and community support services'.[6] In order to implement this policy, Australia subsequently agreed to five national mental health plans, the latest of which was signed by all jurisdictions in 2017.[7] A second National Policy was also produced.[8]

Despite this apparent commitment to reform,[6] it is worth noting that in 2017-18 there were still 1613 beds in psychiatric hospitals spread across five states, costing $565 millions or just under 10% of total state spending on mental health. Half of the remaining institutional beds are in NSW.[9] It is also notable that the current Fifth National Plan does not provide a definition of community mental health care and makes no reference to the term 'hospital avoidance'. Recent changes to the way health services are funded have compounded confusion regarding the desired, ultimate goal of mental health reform. The application of tools such as Activity Based Funding has been seen by some to incentivize admitted care over other forms of care, including in relation to community mental health.[10] Others have even suggested that a core problem is in fact a lack of acute mental health hospital beds.[11]

Across the country, the average length of stay in a mental health unit at a public hospital has been reducing, from 15.1 days in 2010-11 to 13.1 days in 2017-18.[9]

As a final contextual matter, it is important to understand that despite repeated policy concern and attention since 1992, expenditure on mental health has remained largely unchanged, from 7.3% of total health spending in 1992-93 compared with 7.6% in 2017-18.[12] Data suggest that mental illness represents around 12% of the total burden of disease. While this gap between disease burden and expenditure may not entirely explain Australia's systemic mental health problems, compared to other areas of health and given its contribution to Australians' total burden of disease, mental health has clearly received relatively less funding. This makes the task of mental health reform more difficult.

COMMUNITY MENTAL HEALTH IN AUSTRALIA

In the absence of a nationally agreed approach to community mental health, different perspectives or models have emerged. From the point of view of most states and territories, community mental health services typically comprise health professionals working in teams. These services, which might include psychiatrists, clinical and registered psychologists, mental health nurses and allied health professionals (such as occupational therapists and social workers), operate under a variety of names, such as community crisis teams, home care teams, (such as those based on the Assertive Community Treatment model), early psychosis intervention teams, youth mental health teams and residential rehabilitation units.

Effective community-based treatment typically entails the following: ready access to 24-hour crisis intervention and ongoing care, assertive and intensive community case management, professionally supervised residential treatment and rehabilitation in the community as an alternative to confining people to psychiatric institutions and real recovery-oriented vocational opportunities for individuals with mental illnesses.[13] There is evidence to suggest that community-centred health care of this nature is both more cost-efficient and cost-effective than hospital-centred care, particularly where community services are physically placed in the community and linked closely to both primary health care and hospital-based services.[14]

In addition to this rather clinical definition, consumers (service users) and carers have also repeatedly expressed their views about a more holistic vision for the role community mental health care should play,[15] including:

- actively managing medical and non-medical treatment for extended periods as required, with a focus on recovery;
- skilling people with mental illness to live independently in the community;
- providing access to and supporting accommodation and fulfilling employment opportunities, and other social and recreational activities;
- establishing and maintaining mental health centres or facilities that offer a range of support services and information;
- providing outreach services and home based assistance;
- providing case management that acknowledges the episodic nature of mental illness;
- providing timely access to graduated levels of assistance and intervention;
- services that respond quickly when someone is entering an episode of acute illness; and
- recognizing and offsetting the significant burden on families and carers through respite care.

Variations in spending and trends

Spending on mental health is reported by the Australian Institute of Health and Welfare.[12] Drawing on these data, Table 1 shows state and territory spending on mental health care since 2007-08, by the percentage each key service component represents of total spending.

Some trends are clear. The first is that spending on public acute services is an increasingly important element of spending nationally, now accounting for more than 35% of all spending. There are jurisdictional differences, which are further highlighted when considering public psychiatric hospitals as well as mental health services provided in general public hospitals. For example, in 2017-18, NSW spent 54% of total mental health expenditure on admitted care, while Victoria only spent 34%. The states also vary markedly in their approach to community residential spending. Key differences between jurisdictions in 2017-18 are circled in Table 1 for ease of reference.

Ambulatory services also vary between jurisdictions. However, analysis here is complicated by the fact that this label refers to a mix of services, including those provided

Table 1. Variations in percentage spending between Australian states and territories across key mental health service components

Years	NSW*	VIC	QLD	WA	SA	TAS	ACT	NT	Aust Average
Public psychiatric hospital									
2017-18	14.6	**4.0**	6.9	10.9	**15.0**	–	–	–	9.4
2011-12	17.0	4.0	10.9	15.3	18.6	-	-	-	11.9
2007-08	17.5	4.9	12.5	16.9	29.2	-	-	-	13.5
Public acute hospital									
2017-18	**39.7**	30.5	31.5	35.3	30.6	**28.9**	37.3	37.1	34.3
2011-12	36.5	27.1	30.0	28.8	21.5	37.7	24.5	32.9	30.7
2007-08	32.9	27.5	35.7	28.3	21.8	37.1	26.7	33.5	30.6
Total admitted patient									
2017-18	**54.2**	34.5	38.3	46.2	45.6	**28.9**	37.3	37.1	43.7
2011-12	53.5	31.1	40.9	44.0	40.1	37.7	24.5	32.9	42.5
2007-08	50.3	32.5	48.2	45.2	51.0	37.1	26.7	33.5	44.1
Community residential									
2017-18	**0.5**	14.1	4.0	3.7	7.3	**25.5**	10.5	10.0	6.2
2011-12	0.9	16.2	-	3.7	5.4	18.5	13.9	3.1	5.6
2007-08	1.5	16.3	-	2.3	2.3	21.0	12.4	1.3	5.7
Ambulatory									
2017-18	32.4	37.0	**44.7**	38.7	37.6	**30.8**	41.4	41.6	37.3
2011-12	35.7	38.9	45.0	41.3	42.2	31.9	44.7	47.9	39.7
2007-08	35.9	37.8	40.1	43.7	35.8	31.7	45.2	47.1	38.3
Non-government organizations									
2017-18	7.0	8.0	7.3	**5.8**	6.8	**11.0**	7.9	7.5	7.3
2011-12	5.0	8.3	7.8	5.5	9.8	6.1	13.3	7.3	6.9
2007-08	5.8	8.2	6.3	5.3	8.9	5.1	10.2	11.0	6.8
Indirect									
2017-18	5.8	**6.3**	5.6	5.5	2.7	3.8	**2.9**	3.9	5.5
2011-12	4.9	5.5	6.2	5.5	2.5	5.9	3.5	8.8	5.2
2007-08	6.4	5.2	5.3	3.4	2.1	5.2	5.5	7.0	5.2

** NSW - New South Wales, VIC - Victoria, QLD - Qeensland, WA - Western Australia, SA - South Australia, TAS - Tasmania, ACT - Australian Capital Territory, NT - Nothern Territory*

in a range of hospital outpatient clinics, telephone calls, community visits and other matters. It is not possible to clearly divide those services listed as 'ambulatory' between those actually provided at hospital versus those genuinely available in the community or people's homes.

While the percentage of total expenditure associated with ambulatory services has gone down over the past decade, the number of recorded services has grown appreciably from 5.66 millions in 2005-06 to 9.7 millions in 2018-19. However, the proportion of these ambulatory services taking less than 15 minutes per client has risen over this same period, from 38.6% to 44% and overall,

the average duration of each recorded community mental health service has declined from 45 minutes to 35 minutes.[16]

Interactions of this brevity suggest that an increasing proportion of so-called ambulatory care is in fact short, regular visits by patients to hospital outpatient clinics or telephone calls, rather than home visits or genuine community-based care. These data may reflect workforce capacity restrictions and growing demands on overstretched services, highlighted elsewhere.[3] They may also be consistent with recent trends in some jurisdictions, such as Victoria, to provide fewer home care and outreach services in the form of Assertive Community Treatment.

Table 1 also clearly demonstrates the peripheral nature of non-government organizations (NGOs) as part of the mental health service landscape. Unlike other places, for example, New Zealand, where spending on NGOs has been as high as 30% of total expenditure on mental health,[17] in Australia this sector has languished at around 7%. This has deprived Australia of a range of psychosocial rehabilitation and support services, as alternatives to or as a means of minimizing prolonged or avoidable hospitalization. One explanation for this stunted growth is the early split between clinical and psychosocial support services, which arguably led to greater fragmentation of community-based services and less visibility for the important complementary role of these support services.[18]

One practical manifestation of this split has been a reluctance to invest in a peer workforce in mental health. While these roles have become commonplace in other countries,[19] in Australia in 2017-18, consumer workers in paid roles represented just 6.4 out of every 1,000 Full Time Equivalent employee in mental health, and carer workers 2.4 out of every 1,000.[9] Australia's response to mental illness continues to depend heavily on trained health professionals.

Again, unlike other countries,[20] Australia maintains quite a strict and unhelpful delineation between clinical and non-clinical mental health services, with separate professional training arrangements. This makes holistic, comprehensive and multidisciplinary care less likely.

In addition to the state and territory resources described above, the federal government had begun to demonstrate greater interest in community mental health. Since 2006, it has made a large investment in public access to psychology services (now costing around $16 millions a week[21]) and in other programmes, like Partners in Recovery and Personal Helpers and Mentors, which aimed to improve access to and coordination of community-based services for Australians with mental health problems.[22]

However, investment in community mental health by all Australian governments has now been affected by the implementation of the National Disability Insurance Scheme (NDIS). Akin to Australia's investment in a national public health insurance scheme (Medicare), the country recently chose to address the lifelong costs associated with permanent and severe disability through a similar national insurance arrangement. Mental health was a late addition to the discussion about how to design the NDIS. Its eventual inclusion has not been straightforward.

Of most relevance to this analysis, however, was the decision by all nine governments to shift the funding associated with psychosocial mental health support services to the NDIS, as part of the initial set-up of the Scheme.

Australia's psychosocial support service sector has always been a marginal element of the service landscape. Even in places like Victoria and the Australian Capital Territory (ACT), where the investment has been appreciably larger than in other jurisdictions, at their zenith these services only represented around 15% of total spending on mental health care. In NSW, it was more like 7%. However, the vast bulk of this spending has now been transferred to the NDIS and then to individualized care packages.

Community-managed organizations, some of which had been providing psychosocial community support services for decades, found that without the traditional block funding arrangements, they were not able to offer sustainable employment contracts to their staff.[9] Ironically, while the NDIS has brought more and new funding to disability services, its impact in mental health care has been to lessen choice and availability of specialist psychosocial services, effectively excluding some people with manifest psychosocial disabilities.

Key challenges for reform

Mental health remains a critical area of political and community concern, with widespread appreciation

of systemic deficiencies. It is one of the most investigated areas of public policy in Australia; there were 32 separate statutory inquiries between 2006 and 2012 alone.[23] With three current Royal Commissions and one Productivity Commission inquiry underway or about to be completed, this trend continues.

A common finding of these past inquiries has been chronic underfunding of community-based mental health services. For example, the 2006 report by the Australian Senate suggested in response to this finding that Australia build around 200 community mental health centres.[15]

While it is possible to point to some of these major trends affecting the development of community mental health services across the country, again it should be stressed that the picture varies between jurisdictions. At some periods, most jurisdictions have established some level of community mental health care. However, as shown in Table 1 and as reported recently by the Productivity Commission, efforts have generally been uneven, uncoordinated and unsustained.[9] Hospital-centred services continue to dominate. This has implications for the country's mental health workforce and whether they have the training, skills, attitudes and motivation required to work in community settings.[24]

While the Australian community and successive inquiries have identified the need for much greater investment in community mental health services, blending both clinical and psychosocial elements of care, the prevailing reality of 'community-based care' is limited, increasingly restricted to brief episodes and overly clinically-focussed compared with the needs and expectations of the community. There is evidence of a retreat from, or even dismantling of, community mental health services.[14] Too many services are being collocated with hospitals or provided out of hospitals, rather than in community settings. Opportunities for early intervention are lost.

Perhaps the first and most important thing Australia can do to arrest this costly and often traumatic situation is to re-assert the vision originally described in 1992, of a shared goal to enable people with mental illness to wherever possible, live with dignity in the community. Re-dedicating policy and funding efforts towards this shared goal would see home and community-based mental health care prioritized above hospital-based care. It would also see a better balance established between clinical and psychosocial needs,[25] with the emphasis being on earlier intervention.

To this renewed vision should be added more practical pathway-type data, clearly demonstrating when and how community mental health care fits with primary and tertiary care. These data are not currently available and this lack of role clarity contributes to the vulnerability of community mental health services. The recent reallocation of responsibility for mental health planning to regional networks offers some new opportunities to develop this pathway.[26]

However, reform must be supported by the right financial incentives, enabling community care to be prioritized over hospital-based mental health care and waiting times in Emergency Departments. Indeed, this would recognize that good community care can decrease re-admissions to hospital.[27] Regional reform must also seek to integrate funding from different sources, including the NDIS, in order to ensure that all components of community mental health care are available and can flourish.

Lastly, it would be prudent to ensure that this new prioritization of community mental health is supported by an effective and comprehensive process of accountability and governance.[3] Current systems are weak and do not permit a detailed understanding of the impact of care on the patient's quality of life.[28] For the purpose of impelling systemic quality improvement in mental health, it is vital service providers can determine whether the care provided has resulted in effective outcomes and recovery.

More than 25 years after Australia's first national mental health plan was produced, the establishment of a vibrant community mental health system remains the county's greatest and most urgent challenge.

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Community-based Mental Health Services in Norway

Внебольничная психиатрическая служба в Норвегии

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ABSTRACT

Community-based mental healthcare in Norway consists of local community mental health centres (CMHCs) collaborating with general practitioners and primary mental healthcare in the municipalities, and with psychiatrists and psychologists working in private practices. The CMHCs were developed from the 1980s to give a broad range of comprehensive mental health services in local catchment areas. The CMHCs have outpatient clinics, mobile teams, and inpatient wards. They serve the larger group of patients needing specialized mental healthcare, and they also collaborate with the hospital-based mental health services. Both CMHCs and hospitals are operated by 19 health trusts with public funding.

Increasing resources in community-based mental healthcare was a major aim in a national plan for mental health between 1999 and 2008. The number of beds has decreased in CMHCs the last decade, while there has been an increase in mobile teams including crisis resolution teams (CRTs), early intervention teams for psychosis and assertive community treatment teams (ACT teams). Team-based care for mental health problems is also part of primary care, including care for patients with severe mental illnesses. Involuntary inpatient admissions mainly take place at hospitals, but CMHCs may continue such admissions and give community treatment orders for involuntary treatment in the community.

The increasing specialization of mental health services are considered to have improved services. However, this may also have resulted in more fragmented services and less continuity of care from service providers whom the patients know and trust. This can be a particular problem for patients with severe mental illnesses. As the outcomes of routine mental health services are usually not measured, the effects of community-based mental care for the patients and their families, are mostly unknown.

АННОТАЦИЯ

Внебольничная психиатрическая служба в Норвегии состоит из местных центров психического здоровья (МЦПЗ), сотрудничающих с врачами общей практики, первичной психиатрической службой в муниципалитетах, а также психиатрами и психологами, ведущими частную практику. МЦПЗ были сформированы в 1980-х годах для оказания широкого спектра услуг по охране психического здоровья на подведомственных им территориях.

Центры располагают амбулаторными клиниками, выездными бригадами и стационарными отделениями. Они обслуживают большую группу пациентов, нуждающихся в специализированной психиатрической помощи, а также сотрудничают с психиатрическими службами на базе больниц. МЦПЗ, как и больницы, управляются 19 здравоохранительными трестами, которые финансируются государством.

Увеличение ресурсов внебольничной психиатрической службы было важной целью национальной программы психического здоровья с 1999 по 2008 г. За последнее десятилетие на фоне снижения количества больничных коек в МЦПЗ наблюдается рост числа выездных бригад, в том числе кризисных бригад, бригад по раннему вмешательству при психозе, а также ассертивных бригад. Бригадная помощь при проблемах с психическим здоровьем также является частью первичной медико-санитарной помощи, включая помощь пациентам с тяжёлыми психическими заболеваниями. Недобровольная госпитализация в основном происходит в больницах, однако МЦПЗ могут обеспечивать преемственность такой госпитализации, а также назначать недобровольное амбулаторное лечение.

Считается, что с увеличением специализации психиатрической службы улучшается её качество. Однако увеличение специализации также может повлечь за собой бóльшую фрагментированность услуг и отрицательно повлиять на непрерывность оказания помощи специалистами, с которыми пациенты знакомы и которым доверяют. Это может представлять собой особую проблему для пациентов с тяжёлыми психическими заболеваниями. Поскольку результаты оказания стандартной медицинской помощи обычно не измеряются, действие внебольничной психиатрической службы на пациентов и их семьи остаётся по большей части неизвестным.

Keywords: *community-based mental healthcare; mental health services; community mental health centres; community psychiatry; Norway.*
Ключевые слова: *внебольничная психиатрическая служба; психиатрическая служба; местные центры психического здоровья; внебольничная психиатрия; Норвегия.*

THE MENTAL HEALTH SYSTEM IN NORWAY

Norway has a population of 5.4 million and 11 counties. Most people live in cities or towns, while the remainder live in small municipalities in scarcely populated, rural areas, with many having to travel long distances to access mental health services. The mental health services are public and are organized together with general health services at two organizational levels, with separate financing. The municipalities run the primary healthcare, including general practitioners (GPs), team-based primary mental health and substance abuse care. Hospitals and specialized mental health services were previously run by the counties. However, since a reform in 2002, they have been run by 19 health trusts, which are owned and instructed by four regional health authorities on behalf of the state, as owner of the specialized public health services.

The specialized mental health services for adults comprise CMHCs as secondary care; the clinics of mental health and substance abuse services with hospital wards and other specialized units, constitute tertiary care. Each health trust runs one or more general hospitals, including mental health clinics, and two or more CMHCs. The hospitals and CMHCs serve catchment areas with a defined population, but the service user is free to seek non-emergency healthcare outside the catchment area. Specialized psychiatric inpatient wards are in general hospitals and in buildings of former psychiatric hospitals. These consist of acute wards, specialized wards for psychosis, high security wards and departments for the elderly. Studies comparing CMHCs and hospitals have shown that patients with severe psychosis, severe aggressive behaviour or the need for coercion, were treated in hospitals, while patients with severe depression were divided equally between CMHCs and hospitals.[1,2] There are no forensic hospitals in Norway. Certain private service providers of mental healthcare are primarily financed through commissioning with the regional health authorities.

Reports from the Norwegian Patient Register have documented changes in the utilization of mental health

services during the development of community-based, mental healthcare, and the data reported below have been sourced from three of these reports [2-4].

Parallel to the development of community-based mental healthcare, the use of specialized, inpatient mental health services per 100,000 adult inhabitants over the age of 18, has gradually been reduced by 53%, from 176 beds in 1998 to 86 in 2017. Of these, the number of hospital beds per 100,000 adult inhabitants totalled 91 in 1998 and 46 in 2017, while the number of CMHC beds was 81 (including 41 beds in psychiatric nursing homes) in 1998 and 36 in 2017 (when there were no remaining psychiatric nursing homes). During the last decade, 40% of the inpatient beds which provide mental health services for adults, have been in CMHCs.

The pattern of inpatient stays has also changed over the last 20 years, with an increase in the number of admissions (including an unknown increase of readmissions) and a decrease in the length of stays. The number of admissions per 100,000 adults was 860 in 1998 (620 in hospitals, 170 in CMHCs and 70 in psychiatric nursing homes) and 1290 in 2017 (690 in hospitals, 590 in CMHCs and 10 in other institutions). The combination of an increasing number of admissions, a reduction in the length of stays and a rather stable, total number of inpatients, indicates that the number of admissions per patient has increased. Local data in certain health trusts have identified a new group of "heavy users" with a high number of brief stays, which indicates that the increase in admissions per patient, varies among subgroups of patients.

Community-based mental healthcare must follow the same professional, ethical and judicial rules and regulations as other health services. National guidelines specify assessment and treatment for major patient groups, and special guidelines define priorities and acceptable waiting times for various mental disorders. New guidelines have now been developed for care pathways for major patient groups.

Child and adolescent mental health services are also part of the specialized health services, operated by the health trusts. Most patients are seen by the child and adolescent outpatient clinics, which are community-based clinics, usually with the same catchment area as a CMHC. Certain adolescents with severe disorders, may have treatment in adolescent inpatient units, however, children tend to be treated in their homes and rarely in inpatient units. Mobile teams meeting the child/adolescent and the family in their home, are part of the community-based child and adolescent mental health services.

Addiction and substance abuse services consist of outpatient clinics as a part of the mental health services in health trusts, and of primary health and social services run by the municipalities. The addiction and substance abuse departments in the health trusts also have inpatient wards, with various programmes for detoxification and treatment. With the high comorbidity of mental disorders and substance abuse problems, there has been an increasing emphasis on treatment of both types of problems concurrently by the same services. There are also several private addiction and substance abuse clinics, run by private organizations. The use of addiction and substance abuse services are not described further in this paper.

The total budget for the specialized mental health services for all age groups, was 48,000 euros per 100,000 inhabitants in 2017 [4]. This equated to 6.9% of the total health budget, which was 10.4% of the gross national product [5]. In Norway, the specialized health services are financed through the health trusts; GPs and primary healthcare are financed through the municipalities. This division of financing may increase the risk of fragmentation of services, as well as a lack of coordination if priorities are different at the two service levels.

GPs are an important part of primary healthcare. A GP reform in 2001 assigned each citizen to a GP of their choice, to secure accessibility and continuity of healthcare. The municipalities are also responsible for all primary healthcare, including primary mental healthcare and local substance abuse care. A reform in 2006 integrated social services, employment services and social security as services given by local units of the new governmental agency, New Employment and Welfare Administration (NAV). As the municipalities have GPs on call 24/7, and the primary care services are given in the home of the patient when necessary, primary care is an important part of the outreach services in Norway, even for patients with severe mental illness.

THE DEVELOPMENT OF COMMUNITY-BASED MENTAL HEALTHCARE

In Norway, community-based mental healthcare is mainly provided by the CMHCs (referred to in Norway as the District Psychiatric Centres (DPS)), operating as part of the specialized mental health services, run by 19 health trusts.

The CMHCs collaborate with the GPs and the primary mental healthcare services in the municipalities.[6-8]

The development of the CMHCs in Norway started in the 1980s, by combining psychiatric outpatient clinics with local psychiatric wards (either new wards or nursing homes adapted to become active, long-term inpatient wards). The outpatient clinics were previously in general hospitals, along with intermediate-term inpatient wards for patients with more moderately severe mental disorders, following a hospital reform in 1950.[6] Psychiatric nursing homes had also been established from the 1950s to provide care for patients with severe mental disorders, who still required care after treatment in psychiatric hospitals. The development of CMHCs was an important part of Norway's 10 years national Mental Health Plan 1999-2008, focusing on a major increase in funding and a revision of the organization of services. Other central features included increasing the specialized child and adolescent mental health services, and establishing primary mental healthcare teams, day centres and supported housing in the municipalities.[9,10] National guidelines for CMHCs were published in 2001 and 2006.[11,12]

The CMHCs established small, local inpatient wards for short term treatment. These were closer to home than the acute psychiatric and intermediate-term wards in the hospitals. In the 1980s, CMHCs began to develop generic, mobile, psychiatric rehabilitation teams, without a specified model. This development has continued over the last two decades, with more specific types of mobile teams serving special patient groups or purposes.

COMMUNITY MENTAL HEALTH CENTRES

A CMHC serves the population in a local specific catchment area. The catchment areas of the current 66 CMHCs have an average population of 65,000 adults (range 20,000-130,000) adapted to geography and population density.[3] Each centre consists of outpatient clinics, mobile teams and inpatient wards. Inpatient CMHC wards, which are not common in other countries with CMHCs, offer short-term stays during crises, and longer stays for treatment and rehabilitation.[8] The number of CMHCs has increased from a limited number in the 1980s to 66 CMHCs throughout Norway, but with considerable variations in staffing and available services.[13]

Altogether 3050 persons per 100,000 adult inhabitants, were CMHC patients in 2017, and of these 31% had an affective disorder, 36% had an anxiety (or related) disorder, 7% had a personality disorder and 9% had schizophrenia.[3]

Outpatient clinics were developed from the 1950s when public mental health services were introduced in general hospitals. The purpose of these clinics was to serve patients with non-psychotic disorders, who were not served by the psychiatric hospitals, established over the last 100 years. The outpatient clinics increased in capacity and type of treatment in the following decades, and especially during the period of the national Mental Health Plan 1999-2008 and the subsequent decade. The number of annual outpatient consultations in mental health services increased threefold from 13,980 per 100,000 adults in 1998, to 41,860 in 2017.[2] The percentage of outpatient consultations which were provided at CMHCs, increased from 53% to 86%, showing that only a small proportion of outpatients are currently being treated in hospitals. Psychiatrists and clinical psychologists in private practice also provide outpatient treatment, and they have financial support from the regional health authority. In 2018, there were six psychiatrists and 12 clinical psychologists working in private practices per 100,000 inhabitants.[14] In 2017, the number of outpatient consultations with psychiatrists and psychologists in private practices was 15,060 per 100,000 adults.

The growth in CMHC resources during the last decade, has mainly occurred in mobile teams, and in 2017 the number of team members per 100,000 adult inhabitants was 20 in the mobile teams, compared to 65 in outpatient clinics. Early intervention teams for psychosis were established in many CMHCs, inspired by a Norwegian research project,[15,16] and in many CMHCs these teams were organized together with teams for the long-term treatment of individuals with psychosis. CRTs have been established in almost all CMHCs in Norway,[17,18] and they meet twice a year in a national network for acute mental health services. A multi-centre study reported the implementation of the CRT model, but also demonstrated a considerable variation in team practices. However, overall, a significant clinical improvement was noted during crisis intervention, and with a high level of patient satisfaction.[19] An earlier study indicated that CRTs with extended opening hours, may prevent admissions for patients with moderately severe mental disorders.[20] The first 12 ACT teams established in Norway, were implemented well[21] and contributed to a great reduction

in the use of inpatient wards[22] and to highly satisfied patients.[23] During the last few years, many new Functional ACT teams (FACT teams) have been established, based on a model from the Netherlands.[24] This model integrates individual and less intensive case management during stable periods, and a more intensive ACT team follow up during periods of crisis. This may provide better continuity of care from the same team across stable and unstable periods; and with a wider target group, the FACT teams may serve a larger number of patients and be more suitable in areas with lower population density.

The CMHCs have multidisciplinary clinical staff with psychiatrists, clinical psychologists, mental health nurses and several other professional groups. Psychiatrists/physicians and psychologists constitute 56% of the personnel in outpatient clinics and 29% in mobile teams, while mental health nurses and other staff make up 31% of the personnel in outpatient clinics, 64% in mobile teams and majority of the personnel in CMHC inpatient wards. In Norway, psychiatrists and clinical psychologists will have specialized in their specific discipline over a five-year period, after their six years of study in medicine or psychology. Mental health nurses and other professionals will have spent four years in education at university colleges, but they are also increasingly expected to have a master's degree.

Several institutes and training programmes have offered further training for clinicians and health workers in community-based mental health services. These include institutes and training programmes in various types of psychotherapy and group therapy, as well as in treatment of specific patient groups. One large national programme with governmental support has, over the last 20 years, run two-year, local, multidisciplinary clinical training programmes throughout Norway, for health workers in CMHCs and primary care, working with patients with severe mental illnesses in community-based mental healthcare.[25,26]

CMHCs are expected to assess and treat patients with the most common mental disorders, including severe mental illnesses. Patients needing more specialized outpatient treatment or inpatient treatment in wards with special competence or higher staffing, may need a referral to other departments in the health trust or for treatment at the regional level. One challenge is to encourage the use of mental health services among immigrant populations. In spite of a slightly higher prevalence of mental problems, immigrants use such services less than native Norwegians.[27,28]

The type of assessments and treatments given by the CMHCs have become more differentiated and comprehensive, with growing staffing and with an increasing number of models for specific assessments and treatments for different groups of patients. In larger CMHCs with higher staffing and greater population numbers in the catchment area, there may be specialized teams or programmes for assessment and treatment of early psychoses, bipolar disorders, personality disorders, obsessive compulsive disorders or eating disorders. A network of CMHC teams for day treatment and group treatment of individuals with personality disorders, has documented the treatment effect of such teams in many CMHCs.[29] This is an example of a network between similar teams across CMHCs.

The CMHCs are secondary care services, interacting and collaborating both with GPs, the primary care teams of the municipalities and with tertiary hospital services. Clinicians at many CMHCs visit GPs and the primary care teams, either on a regular or an ad hoc basis for collaboration or to have joint meetings with patients. Many of these meetings are organized in so-called "responsibility groups" where individuals from various services meet a patient to plan and coordinate services for him or her. Demands from health authorities to documented efficiency (such as the high number of sessions or short waiting times) are limiting the amount of time that clinicians in the CMHC may use visiting primary care. The CMHCs also have regular or ad hoc interaction and collaboration with various hospital wards, for the mutual referral of patients with changing needs.

The national health authorities have put an increasing emphasis on the involvement of service users and their families in the development of community-based mental health services. User councils are now established in the health trusts, and user and family organizations receive financial support from the government. Clinicians are learning to focus more on personal recovery and patient preferences. However, there is still a long way to go before recovery-oriented services and shared decision-making with the patient, is routine practice for all clinicians in all CMHCs.[30] Patient-controlled brief admissions (self-referrals) to CMHC inpatient wards is a model

innovated in a Norwegian CMHC,[31] and this model was implemented in 52 of the 66 CMHCs, in 2017.[3]

The quality of the CMHCs has been rated in national surveys, in which GPs rated the local CMHC regarding workforce, competence, discharge letters, help in emergency situations and guidance for GPs. In 2006, the average CMHC quality was rated as medium, but with a large variation among CMHCs.[32] A similar national survey of outpatients' experiences with the CMHCs showed medium to high positive associations with GP's ratings of the CMHCs, and that patients were generally more satisfied than GPs.[33] The most important aspect for the patients was interaction with the clinicians and being met with respect. The most important factors for GPs were ensuring that the CMHC operated at an adequate level of competence, had a low rejection level of referrals and a short waiting time for patients. The effect of CMHCs and other community-based mental healthcare cannot be reported, as clinical outcome is not measured routinely in the mental health services in Norway.[34]

STRENGTHS AND WEAKNESSES OF THE COMMUNITY-BASED MENTAL HEALTHCARE

The CMHCs and other elements of community-based mental healthcare have greatly improved access to mental healthcare, by bringing the services closer to where people live, increasing the capacity of the services and developing more differentiated and comprehensive services to meet a diversity of needs.

However, surveys and resource statistics indicate that there are substantial variations in capacity and the quality of care across CMHCs. Leaders and clinicians must use effective strategies to identify local needs for improvement and to apply necessary implementation support, to change clinical practice and to provide more beneficial and effective mental health services.

Increasing specializations contribute to more comprehensive assessments and treatments of mental disorders. However, increasing specialization may also contribute to more fragmented services and less continuity of care. Pressure to increase efficiency by shortening treatment time in mental health services, may be a threat to developing and maintaining a trusting relationship between a patient and a clinician. This is especially important for patients with severe mental illnesses, the recovery of whom may take several years, and where the continuity of a long-term relationship with one person is often a key factor. Several recent studies on patient experiences have shown the importance of such long-term relationships and continuity of processes.[35-37]

Community-based mental healthcare in Norway is serving a large group of individuals with mental health disorders, but most of the resources are still spent on inpatient services. Compared to several other countries with highly developed community-based mental healthcare, Norway uses more resources in inpatient services.[7] Analysing our health system and learning from other countries may show how we could use our resources in an even better way.

FUTURE DEVELOPMENTS

Current national health policies aim to increase the percentage of healthcare given by primary care, and to increase competence in primary care. An ongoing merging of small municipalities into larger ones, may increase resources and the possibility that primary care may be able to take on larger responsibilities. It has also been suggested to pilot a transfer of CMHCs to primary care, by allowing certain larger municipalities to run CMHCs. However, many people in the CMHCs are worried about this possible development, and fear that the quality of the services will be lower.

In rural areas, with a low population density and long travelling times to access mental health services, web-based portals and other types of electronic communications with patients, are already being used by certain CMHCs in assessment and treatment. These forms of communication will probably be increasingly used in the future.[38]

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Organization of Community Psychiatric Services in Finland

Организация амбулаторной психиатрической службы в Финляндии

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ABSTRACT

Background. The Finnish psychiatric treatment system has undergone a rapid transformation from operating in institutional settings to a adopting a community-based approach, through implementation of national plans; this process was carried out quickly, due to a severe economic recession in the early 1990s.

Methods. This paper is a narrative review, based on relevant documents by national authorities, academic dissertations and published scientific literature, between 1984 and 2018, as well as the interviews of key experts in 2019.

Results. The municipality is currently the primary organization, responsible for all health services. Municipalities may also work together in organizing the services, either through "unions of municipalities" or hospital districts. Services are to a great extent outpatient-oriented. The number of beds is one fifth of the previous number, around four decades ago, despite the increase in population. In 2017, 191,895 patients in total (<4% of Finns) had used outpatient psychiatric services, and the number of visits totalled 2.25 million. Psychotherapy is mainly carried out in the private sector by licensed psychotherapists. Homelessness in relation to discharged psychiatric patients has not been in evidence in Finland and deinstitutionalization has not caused an increase in the mortality rate among individuals with severe mental disorders.

Conclusion. Psychiatric patients have, in general, benefitted greatly from the shift from institutions to the community. This does not preclude the fact that there are also shortcomings. The development of community care has, to date, focused too heavily on resource allocation, at the expense of strategic planning, and too little on methods of treatment.

АННОТАЦИЯ

Обоснование. Система оказания психиатрической помощи в Финляндии в связи с серьёзным экономическим кризисом в начале 1990-х годов прошла быструю трансформацию от институционального к внебольничному функционированию за счёт реализации государственных программ.

Материал и методы. Обзор основан на релевантных документах органов государственной власти, академических диссертациях и научной литературе, опубликованной с 1984 по 2018 г., а также интервью экспертов 2019 г.

Результаты. В настоящее время основной административно-территориальной единицей, ответственной за оказание всех услуг здравоохранения в Финляндии, является муниципалитет. Муниципалитеты могут сотрудничать между собой в организации здравоохранения посредством объединения муниципалитетов либо больничных округов. Услуги в большей степени ориентированы на амбулаторный режим. Несмотря на рост числа населения, количество коек на сегодняшний день составляет 1/5 их количества за предшествующий

40-летний период. В 2017 г. всего 191 895 пациентов (<4% жителей Финляндии) пользовались амбулаторной психиатрической помощью, а общее количество приёмов составило 2,25 млн. Психотерапия в основном проводится частным образом лицензированными психотерапевтами. В Финляндии отсутствует проблема бездомности среди выписанных психиатрических пациентов. Кроме того, деинституционализация не привела к повышению смертности среди людей с тяжёлыми психическими заболеваниями.

Заключение. Польза психиатрическим пациентам от перехода с институционального на местный внебольничный уровень в целом очевиднаю Но это не означает отсутствие недостатков. На сегодняшний день развитие внебольничной психиатрии слишком сильно связано с перераспределением ресурсов в ущерб стратегическому планированию и разработке новых методов лечения.

Keywords: *community psychiatry; development; outcome; use of services.*
Ключевые слова: *внебольничная психиатрия; развитие; результат; использование услуг.*

INTRODUCTION: FROM COMMUNITY TO INSTITUTIONS

Originally, individuals with severe mental disorders were cared for by relatives or by the church in Finland. During Swedish rule, there was no specific legislature regulating the "care of the delirious". In 1840 during Russian rule, Czar Nikolai I issued a decree relating to the care of "mental diseases" and their treatment. The decree ruled that the state was the responsible organization of hospital care, and that several hospitals were to be built. The first hospital, established solely for the care of mental disorders, was opened in 1841 in Helsinki (Lapinlahti Mental Hospital). In 1880, a new decree, issued by Czar Alexander II, came into force, ruling that municipalities are responsible for the care of chronically mentally ill individuals, released from hospital. Specialist departments for the mentally ill were established thereafter in municipal homes, that provided housing and care for citizens, unable to care for themselves. These were functional until the establishment of "B-mental hospitals" (hospitals for chronically ill patients with psychoses) in the 1950s. The first outpatient office was founded by the Finnish Association for Mental Health in Helsinki in 1927.[1,2]

During Finnish independence, and since 1917, the first "law on mental illness" came into force in 1938. Municipalities were instructed to take more responsibility for the organization of psychiatric services, with economic support from the state. Several mental hospitals with a defined regional catchment area were built. According to the "law on mental illness", close relatives or a legal guardian of a person, could apply for treatment in a mental hospital or a municipal home. Release from the hospital was often dependent on those, who had applied for the treatment. Commitment and use of involuntary measures were not yet explicitly regulated. A reform of the law on mental illness was issued in 1952.[1] A comprehensive coverage of good services based on access to hospitals was a central aim for service development at the time. Mental departments in municipal homes were closed, and B-hospitals for the chronically ill were established around the country. In addition, the municipalities were obliged by law to establish "care offices" for patients, discharged from the hospitals. In 1977, a partial revision of the law on mental illness regulated the process of commitment and discharge in more detail than previously, making physician the sole responsible agent according to this act.[2]

MATERIAL AND METHODS

This paper is a narrative review, based on relevant documents by national authorities, academic dissertations and published scientific literature between 1984 and 2018, as well as information from key experts in 2019.

FROM INSTITUTIONS TO COMMUNITY

At the end of the 1970s, before the deinstitutionalization process began in Finland, there were a total of 4.2 beds per 1,000 inhabitants in psychiatric hospitals, which at the time, were managed by 21 mental health districts. In Europe, only Ireland had a higher rate of beds.[2] Progress regarding outpatient-oriented care was

initiated by the National Board of Health in 1978, and largely carried forward by mental health professionals from the early 1980s to the early 1990s. Resources for outpatient care were increased according to plans formulated in the 1980s, and the number of hospital beds decreased considerably around the turn of the decade. The number of hospital beds were reduced in greater numbers and over a shorter time period than originally planned, and the number of staff transferred from hospitals to outpatient care, was actually lower than originally anticipated. Until the 1980s, elderly patients with severe forms of dementia and individuals with mental retardation, were treated in psychiatric hospitals. These patient groups were transferred to other services during the deinstitutionalization process.[2,3]

In 1991, a new Mental Health Law came into force. The principles of the new law were largely outlined by psychiatrists, working at the time in the National Medical Board. Outpatient services were defined as the front-line of care and included both health centres as well as psychiatric outpatient clinics. The health centres took care of patients with common mental disorders and assessed the needs of patients for specialized psychiatric care. In addition, compulsory care and the use of coercive measures, such as seclusion and restraints, were increasingly regulated. Subsequent revisions have included more detail in this regulation.[4,5]

Additionally, two other important new laws came into force in the early 1990s.[4,6] A law for specialized healthcare integrated the previously separate mental health districts, responsible for psychiatric hospital treatment, with 21 healthcare districts. An additional law provided guidance in relation to the funding of public services, to compensate for the differences between the municipalities in demographic and economic conditions. This law strengthened the independence of the municipalities, and as a result, the health services in Finland became very decentralized. The regional variation of organization and the quality of the health services increased greatly.[4,5]

Services in the 21st century

Municipal social welfare and healthcare services, implemented with government support, form the basis of the social welfare and healthcare system. Private companies also provide services in addition to the public sector. Furthermore, Finland has a wide range of social welfare and healthcare organizations, providing services both free of charge and for a fee. The Ministry of Social Affairs and Health prepares legislature and steers its implementation. Policy guidelines are defined and reforms are prepared, guided and coordinated by the ministry. Agencies and institutes within the ministry oversee research and development (the Finnish Institute for Health and Welfare, THL and the Finnish Institute of Occupational Health), sanctioning medications (the Finnish Medicines Agency, Fimea) and radiation safety (Radiation and Nuclear Safety Authority, STUK).

Finland is divided into 21 hospital districts, which organize general hospital treatment and psychiatric hospital treatment for most of the municipalities. Finland comprises 310 municipalities, with a total population of circa 5.5 million. The number of inhabitants in a municipality varies from 690 to over 650,000, which has led to versatile administrative arrangements. Municipalities may organize primary healthcare and psychiatric outpatient care services independently, provided they have a sufficiently large population base to ensure fiscal sustainability. Municipalities may also work together to organize primary healthcare services and psychiatric outpatient care, either as a member of "unions of municipalities" or hospital districts. The districts are governed by representatives from the municipalities, and the districts receive their funding mainly from the municipalities. Municipal social services are responsible for home services, rehabilitative work activities and housing and community rehabilitation services, which, for the most part are currently run by private companies and non-governmental organizations (NGOs).

Primarily in the larger cities in Finland, hospital services have been organized by the cities themselves. Likewise, certain municipalities have also organized their outpatient care, whereas in other municipalities, outpatient care has been organized by hospital districts. Therefore, until the turn of the century, the organization and administration of the services have varied in a manner that renders a simple description cumbersome. Manpower varies greatly in psychiatric services, and there are currently no concerted data relating to this issue. There are roughly 1,800 physicians, specializing in one of the psychiatric disciplines. More than 1,000 of these specialists are of working age. By comparison with most European countries, Finland has a greater ratio of psychiatrists and psychiatric nurses per inhabitant. There are more than

Table 1. Levels of organization and corresponding responsibilities

Ministry of Social Affairs and Health	Health Districts	Municipalities	A-Clinics Ltd.	Private sector	NGO´s
• Legislature and its implementation • Policy guidelines • Reforms of services • Agencies and Institutes: the Finnish Institute for Health and Welfare (THL), and the Finnish Institute of Occupational Health (ICH), the Finnish Medicines Agency (Fimea), Radiation and Nuclear Safety Authority (STUK) • Guidance and cooperation; prevention and promotion	• Five separate university hospitals that comprise specific areas of responsibility • Hospital services: general and psychiatric, adolescent psychiatric and child psychiatric, (in certain districts) detoxification units • Outpatient psychiatric services, adolescent psychiatric and child psychiatric outpatient care • Outsourced psychotherapy services • Social services • Offices providing educational services or advice for families with under-age children • Home services, rehabilitative work activities, housing and community rehabilitation services	• Primary healthcare and social services • In larger cities: hospital services, general and psychiatric, adolescent and child psychiatric services • In larger cities: psychiatric, adolescent psychiatric and child psychiatric outpatient care • Outsourced psychotherapy services • Youth clinics • Prevention and promotion	• Alcohol and substance abuse services • Addiction hospitals • Detoxification units • Opiate dependence substitution treatment • Outpatient and digital services • Housing services • Family and youth services	• General outpatient health services, operative hospital services • Psychiatrists' surgeries • Psychotherapy services • Housing services • Rehabilitation • Addiction services	• MIELI: Mental health prevention and promotion • FINFAMI: promotion of mental health • Union of Mental Health: peer-support and other activities • Nyyti: student mental health promotion • Other smaller NGOs: mental health promotion, rehabilitation funded by SII

5,600 psychologists in Finland, however, some of these work in areas other than mental health services. Around 4,000 of them work in services run by the public sector.

There is no longer specialized treatment for geriatric psychiatry, although patients older than 65 or 68, depending on the region, are treated in separate wards and outpatient units. Child psychiatry, adolescent psychiatry and general psychiatry are separate disciplines in Finland. Therefore, the treatment of children, adolescents and adults is carried out in separate units. The Mental Health Law stipulated that adolescents under the age of 18 are not to be treated in the same wards as adults. Outpatient care is also carried out in separate units. The upper age limits in psychiatric outpatient care, separating children, adolescents and adults vary between regions: children from 12 to 14 years, adolescents from 19 to 22 years and adults from 20 to 23 years.[4,6,7] Additionally, social services within the municipalities or unions of municipalities, have offices providing educational services or advice for families with under-age children.

If there is a reason why a suspect is not criminally responsible for a violent crime (manslaughter or homicide), the defence lawyer or the court may request an assessment of the psychiatric condition of a suspect. This assessment is conducted either in a state mental hospital, a psychiatric hospital for prisoners, or in a forensic department of a university hospital clinic, if such an institution exists. Should the perpetrator, suspected of having committed manslaughter or homicide, be deemed not to be criminally responsible, he/she will receive forensic psychiatric care in one of two state mental hospitals (Vanha Vaasa and Niuvanniemi). Additionally, psychotic patients with severe behavioural problems, who are difficult to treat and who are unable to be treated in the psychiatric hospitals themselves, are sent to state mental hospitals.

Psychotherapy is primarily carried out in the private sector by licensed psychotherapists, who have received a specialized education, lasting between four and six years. The key methods used are cognitive-behavioural, psychodynamic, solution-focused and trauma therapy. The Social Insurance Institution (SII) will reimburse around 60 to 80% of the fees of the psychotherapists – depending on how much they charge – for up to three years. Psychotherapy is funded by the SII as rehabilitation, to avoid disability or to promote a return to work-life. A statement by a psychiatrist is necessary to gain access to psychotherapy as rehabilitation. Currently, more than 50,000 individuals receive psychotherapy as rehabilitation annually (Metsä, personal communication). Access to psychotherapy tends to vary greatly within the country, as most therapists work in cities that have a university with a medical faculty. Psychotherapy services are also provided in the private sector in terms of outsourced psychotherapy, in larger cities and health districts.

NGOs provide mental health services free-of-charge and for a fee. Mental Health Finland (MIELI) has e.g., organized a national network of voluntary crisis counsellors, who work on telephone helplines. FINFAMI (Finnish Central Association of Families of People with mental illness) provides support with its member associations for families of people recovering from mental illness. Peer-support and activities are provided by the Mental Health Union, together with its member associations. Nyyti is an NGO which promotes the mental health of students in Finland.

Addiction services

Treatment for psychiatric disorders and alcohol abuse has been carried out for decades in separate systems. Over the past three decades there has been an increasing effort to encourage integration. Currently, the primary care providers for individuals suffering from alcohol abuse are health centres and the A-Clinic Ltd., which is a non-governmental and non-profit organization, owned by the A-Clinic Foundation. A-Clinics offer a wide range of addiction services, such as outpatient therapy, detoxification units, housing services and hospital care in Järvenpää Addiction hospital. Health centres mostly screen patients with addictions, treat patients with milder forms of addiction and assess patients' needs for specialized care, either within psychiatric services or within A-Clinics Ltd.

Addiction psychiatry units have been founded within psychiatric services. These units may take care of both hospital and outpatient care or solely the outpatient care of patients with illicit drug abuse. Previously, patients with alcohol delirium were treated in psychiatric hospitals, however, these patients are now treated in the detoxification units of general hospitals or, if necessary, in intensive care units. The primary responsibility assessment of opiate dependence is carried out by the addiction psychiatry units. If a patient is accepted into opiate substitute care, the treatment may be delegated

to the A-Clinics or primary healthcare. Patients suffering from severe withdrawal states or psychoses due to drug abuse, are treated in psychiatric hospitals. For under-age patients with addictions, there are youth clinics, organized by municipalities or unions of municipalities. There are counsellors in schools, and education services may also provide psychological services to a certain extent.

Costs of services

All public health and social services are primarily funded by municipal taxes and to some extent state taxes (state funding compensates the inequalities between municipalities and special state funding in terms of training and research for hospitals). The municipalities have always paid for the treatment, using funds from municipal taxation and to a lesser extent from state subsidies, irrespective of whether the services were organized by the municipalities themselves, by the unions of municipalities, by the hospital districts or by state mental hospitals. Health districts and state mental hospitals bill the municipalities for the number of patients treated (taking into account the number of visits and days in hospitals). If the municipalities cannot afford to pay for all treatment given, the hospital districts cover the missing portion of the payments. Mental healthcare costs are circa 9% of all healthcare costs in Finland.

Patients using the private sector can be reimbursed to a certain degree by the SII,[4,5] which constitutes funded state taxes. Patients may also receive reimbursements for rehabilitative psychotherapy and medications, prescribed by a physician. Psychiatric outpatient care visits are free-for-charge, with the exception of an appointment not being cancelled on time. The only out-of-pocket expense for a patient in public outpatient care, is payment for approximately half the medication required. Hospital care is to a lesser extent covered by the patients themselves, and if they cannot afford the payments, social services will lend a helping hand.

NEW DEVELOPMENTS

A major, current trend regarding both psychiatric outpatient and hospital services, has been a move towards a larger population base. Hospital and specialized psychiatric outpatient care, previously organized by certain municipalities, has been or is being integrated into hospital districts. The government of Finland has outlined a plan to shift the responsibilities of health and social services from the municipalities to larger areas or provinces, which would reduce the diffuse ways of arranging and administrating healthcare. Social and healthcare services would also be more integrated as a result, than they are currently.

Around a decade ago, the authorities took the decision that the old mental hospitals, treating psychiatric patients exclusively, would be closed, and psychiatric hospital treatment would be integrated with general hospitals. There were two key motivations for this undertaking. Firstly, the quality assurance of the patient's treatment as a whole, was considered of utmost importance. Psychiatric patients have a higher rate of mortality, due to somatic illnesses and they do not receive as much care as the general population for their illnesses.[8] For instance, imaging and laboratory services were not available in separate mental hospitals, and intensive care units are at times necessary e.g., for patients in severe delirious states. Secondly, an attempt to decrease stigma was also an important factor. Psychiatric patients would not in the future be segregated from other patients, although they would continue to have their own department. Many new hospital units are, therefore, being built today in Finland, but at the same time, there will be a further decrease in the number of beds.

During the past decade, service development has been outlined in two mental health plans, Mind2009 and Mind2015.[9] Presently, a new plan is being drafted. One main aim of Mind2009 is to integrate addiction and psychiatric services. Although cooperation between the services provided for these patient groups is improving, and the quality of treatment is of a higher standard, there are still shortcomings in relation to their integration. This is largely due to the fact that addiction services have been operating separately from other mental health services for decades. Mind2015 focuses on emphasizing patient-centredness, the promotion of mental health and abstinence, the integration of somatic and psychiatric care, the integration of administration and the development of a means for measurement-based administration.

A new innovation, that of a model of triadic cooperation, was developed for occupational health services and health centres. In this treatment model, nurses are trained to provide either group or individual psychotherapeutic treatment for patients.[10] An occupational healthcare physician or general practitioner takes care of prescribing medication, and a psychiatrist is available for consultation,

if the treatment does not proceed as planned. The method has not been in use throughout the country, however, Etelä-Pohjanmaa hospital district has been able to close a ward due to a decrease in demand for psychiatric hospital care (Lassila personal communication).

USE OF SERVICES IN 2017

In 2017, there were 195,406 patients within specialized psychiatric services, including both outpatient and inpatient care. The number of patients who received hospital care was 24,495 and the number of treatment episodes was 37,705. Within the past decade there has been a slight decrease in the number of patients. The number of patients treated in psychiatric hospitals has decreased greatly during the past three decades, and treatment episodes are considerably shorter. Even within a decade, from 2006 to 2017, the rate decreased by more than 20%.[11] More than half of the patients have hospital treatment episodes that last less than two weeks, while less than 1% receive hospital treatment for more than a year. The latter group primarily comprises patients in state mental hospitals, who benefit from forensic psychiatric services and who constitute difficult-to-treat patients.

The number of outpatients has increased within the past decade by ca. 65,000. In 2017, 191,895 patients in total had used outpatient psychiatric services, and the number of visits was 2.25 million.[11] On the other hand, these numbers do not include visits to private psychiatric or psychotherapeutic services. Around a fifth of working age psychiatrists work in the private sector. In recent years, the number of referrals to psychiatric outpatient care and the use of psychiatric services, has increased without any reliable indication of a coinciding increase in the incidence of mental disorders. The stigma due to mental disorders has decreased dramatically within the past few decades. Another important factor may be that many health centres have lacked qualified general practitioners, thus limiting the access to primary healthcare on time.

There is a large variation in the use of services in Finland, and the prevalence of use does not follow the prevalence of disorders. Variation in terms of access to services is one key factor, which is dependent on the availability of adequate services. The rate of treatment episodes is relatively evenly distributed but the length of hospital stays per episode, varies greatly. Previously, in the 1980s and 1990s, the length of stays correlated with the availability of outpatient services.[12,13]

During the 1990s, due to increasing decentralization, the development of treatment and rehabilitation methods, and the settings for individuals with severe mental disorders began to vary. Most housing services are run by private companies or NGOs, some of which also provide adequate rehabilitation services. The quality of supported housing and rehabilitation to be carried out in these units, currently varies greatly. There are more than 7,000 people with severe mental disorders who live in these units, and the level of service they receive may sometimes be of a lower quality than the service provided some decades ago in the hospitals for chronically ill psychiatric patients (Kärkkäinen, personal communication).

In a recent study, the European Service Mapping Schedule-Revised (ESMS-R) tool was used to classify the adult mental health service (MHS) structure in southern Finland (population 1.8 million, 18+ years).[13] The diversity, including various types of day-care and outpatient services, of the MHS was found not to be associated with hospitalization. Only a general index of mental health needs was associated with an increased use of inpatient treatment. The researchers concluded that strategic planning is quintessential in service-planning and that an increase in the number of resources in outpatient services, is not sufficient to decrease the need for hospital care, as inpatient care is associated with factors relating to population and the healthcare system. In the same research project, it was also found that the diversity of services is dependent on the size of the population base. A minimum of 150,000 inhabitants are needed to justify a diverse mental healthcare system and to satisfy the multiple needs of psychiatric patients.[14]

CERTAIN VIEWPOINTS RELATING TO OUTCOME

A suicide prevention project was carried out in Finland between 1987 and 1996. Firstly, psychological autopsy studies were conducted. The studies showed that two thirds of individuals who committed suicide, suffered from a clinically significant depressive illness that was often under-treated. After the study phase, an intervention was planned, implemented and subsequently, evaluated. During this project physicians received training on the identification and treatment of depression.[15] At the same time, new antidepressants became available and their use

increased greatly even until the 2010s. During the 1990s, the rate of suicides decreased dramatically, and one factor seems to be the increased use of antidepressants among the male population, who previously had not received adequate treatment for their condition.[16]

Homelessness in relation to discharged psychiatric patients has not been in evidence in Finland and deinstitutionalization has not increased mortality among individuals with severe mental disorders. In fact, a seminal study showed that in those regions of Finland, where the coverage of outpatient services was high, the rate of suicide was lower than in regions where the treatment system was more hospital-oriented.[17] However, there is an excess mortality among patients with severe mental disorders. In psychoses, excess mortality was found to be 3.5-fold and in psychoactive substance abuse, 5.3-fold, by comparison with the general population. Overall, the mortality of the population and patients with severe mental disorders has decreased between 1996 and 2010.

In 2000, in a population-based sample, 31% of those who had experienced a major depression episode, received pharmacological, psychotherapeutic or both types of treatment. Slightly less than a fifth of those suffering from depression received treatment that was barely adequate. However, only a third of individuals with major depression, made use of the health services for mental healthcare. The treatment coverage was considerably better among the service users, as 76% received antidepressants, psychotherapy or both. Under-treatment is thus primarily a problem of objective needs, not resulting in the use of services. The majority of those using health services for mental reasons were of the opinion that the care had been quite or very helpful. The level of satisfaction was even higher among those who had received psychotherapy. In the same sample, most (80%) of those with anxiety disorders, who used health services for mental health reasons, received pharmacotherapy, however, less than half received any form of psychosocial or psychotherapeutic treatment.[18,19]

Among the employees of 10 Finnish municipalities, psychotherapy, funded as a means of rehabilitation was considered an effective form of treatment. Patients with major depression, who had long absence periods from work due to mental health issues (>21 days) before psychotherapy or antidepressant treatment, reported a significant decrease in the ratio of sickness absence at the end of the entire follow-up, compared with absence from work before or during the treatment. During the follow-up, healthy controls noted an increase in sickness absence. Psychotherapy and antidepressant treatment were associated with a substantial decrease in sickness absence for at least six years after the end of treatment.[20]

All outpatients were routinely asked to fill in questionnaires on symptoms and their health-related quality of life at the baseline and after three, 12 and 24 months in a research and development project on outpatient psychiatric care, at Satakunta Hospital District in Finland between 2010 and 2014. The project found that for most patients, recovery was highly clinically significant and was defined as a change in the health-related quality of life. Recovery after one- and two-year follow-ups depended to a large extent on the recovery at three months. This result emphasizes the importance of measurement-based psychiatry. Quality of life could be a useful generic outcome measure. Following the patients´ state routinely by an outcome measure, could provide benefits for the treatment of those patients, in particular, who do not recover at all or who recover slowly during the first three months.

DRAWBACKS OF THE SERVICES

Schizophrenia patients who are difficult to treat are increasingly referred to state mental hospitals, which are the only psychiatric hospitals, in which the number of wards and beds have increased. A similar development has been found in Denmark.[21] Moreover, access to the rehabilitation of individuals with severe mental disorders may be somewhat arbitrary, as the quality of services in supported housing seems to vary greatly. If the governing principle is simply inexpensiveness, then the companies have an incentive to retain the residents and not rehabilitate them to achieve independence. However, currently, there are improving trends in relation to rehabilitation and housing services.

Outpatient care in community clinics seems to lack intensity and continues over too long a period of time, resulting in new patients not having timely access to intensive treatment. Less than a fourth of patients in community clinics receive visits on a weekly basis, over a two- to six-month period. In the case of 75%, the mean frequency of visits is below 0.6/week. Yet, this care,

based on infrequent visits, may continue for a number of years. A large proportion, even around 50% of the input staff in outpatient clinics, is focused on treating patients, who have been receiving treatment for several years (Horjamo personal communication). Additionally, outpatient services, generally, do not provide evidence-based, time-limited, psychotherapeutic treatment for patients in the acute phase. To date, the only choice has been rehabilitation psychotherapy, funded by the SII. There is an increasing consensus that evidence-based psychotherapy should be included as a key component of outpatient care in future development plans.

The health benefits of a large proportion of the visits to outpatient clinics may, thus, be questionable, due to the lack of intensity and specified treatment plans. Therefore, new patients may not receive care that is adequately intensive and comprehensive, which again may result in shortcomings in terms of recovery, sickness absence or disability. The effectiveness of the treatment and the feedback from patients are not measured routinely. Should such monitoring not be carried out, it is very difficult or perhaps impossible to understand which needs must be addressed. Cost-effectiveness is, likewise, not followed-up, which hinders the development of a fiscally sustainable plan.

CONCLUSION

Psychiatric patients have, in general, benefitted greatly from the shift from institutions to the community. This does not preclude the fact that there are also shortcomings. The development of community care has, to date, focused too much on resource allocation at the expense of strategic planning, and too little on the type of treatment. Furthermore, since attention has been focused on shifting resources from hospitals to outpatient care, there has not been a similar development of treatment, carried out in the hospitals.

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