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**Health Beliefs and Experiences of a Health Promotion Intervention Among Psychiatric Patients With Substance Use
An Interview Study**

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ABSTRACT

We aimed to explore beliefs about physical health from the perspective of patients with concurrent mental illness and substance use and to explore how a health promotion intervention influenced their personal agency for changing health-related behaviour. Our findings were that patients' beliefs were focused on their present day state of health and that patients had strategies to normalize their health and health-related behaviour. Health promotion to this group of patients should be tailored to fit their particular beliefs. Health measurements were experienced as providing tangible insight into their health and appeared to prevent patients from minimizing physical health problems.

Keywords: Attitude to Health, Diagnosis, Dual (Psychiatry), Health Promotion, Interview as Topic, Qualitative Research

INTRODUCTION

Patients with concurrent mental illness and substance use disorder (dual diagnosis) constitute challenges to mental health services. Their treatment needs to integrate management of both their psychological problems and their drug dependence (Munro & Edward 2008). The complexity of effectively treating patients with dual diagnosis is further complicated by a high prevalence of physical comorbidities. In comparison to patients with mental illness without concurrent substance use disorder, patients with dual diagnosis have a higher likelihood of contracting infectious, gastrointestinal and respiratory diseases (Dickey et al. 2002, Frasci et al. 2013), and additionally a higher likelihood of dying prematurely (Aagaard et al. 2016, Steingrimsdottir et al. 2016). These heightened somatic morbidity and mortality rates are partly caused by overdoses and accidents resulting from substance abuse (United Nations Office on Drugs and Crime 2012) and partly by inadequate physical health care and the adverse effects of treatment with psychotropic medication (Osborn 2001). Additionally, dually diagnosed patients are more likely to adopt unhealthy behaviour like tobacco smoking (Drake & Green 2015) and poor engagement in physical exercise (Abrantes et al. 2011). Thus, developing and implementing new knowledge in clinical routines to improve physical health and lifestyle in these patients is warranted (Munk-Jorgensen et al. 2015).

Recently, interventions to improve physical health in patients with mental illness have been highly prioritized in clinical practice (Happell, Davies & Scott 2012, Hjorth et al. 2014, Haddad et al. 2016). Moreover, experiences of participating in health promotion interventions have been examined from mental health patients' points of view (Shiner et al. 2008, Aschbrenner et al. 2013, Roberts & Bailey 2013, Pearsall et al. 2014, Wardig et al. 2015, Yarborough et al. 2016). In general, patients were more likely to engage in health interventions, if they perceived a potential health risk from their health-related behaviour, if interventions were tailored to the patients' individual needs and capabilities and

if they received social support from peers or family members. Furthermore, experiencing both physical and psychological benefits from interventions and continual measurement of health indicators were emphasized as being important to maintaining patients' engagement in interventions.

Studies involving patient perspectives tend to focus on health behaviour change programs and interventions and to a lesser extent, on the meaning mental health patients ascribe to physical health (Happell et al. 2016). One recent study explored perspectives on health among mental health patients (Happell et al. 2016), and Villena and Chesla (2010) gave partial insight into perspectives on health among dually diagnosed patients (Villena & Chesla 2010). In both Happell et al. (2016) and Villena and Chesla (2010) contextual factors influenced how patients behaved and sought help with regards to potential physical health issues and how patients understood physical health. This emphasizes the importance of including an exploration of health beliefs when evaluating health promotion interventions. These insights are valuable in the designing of future appropriate interventions addressing health behaviour changes.

The aim of the present study was to explore beliefs about physical health from the point of view of dually diagnosed patients. In addition, we wanted to develop in-depth insight into the patients' experiences of participating in a health promotion intervention and of how they understood the intervention's influences on their personal agency for changing behaviour in regard to their health.

METHODS

Design

Semi-structured qualitative interviews. The interviews took place in February-April 2016, 2-4 months after concluding the intervention.

Theoretical perspective

We used Kleinman's (1981) concept of "explanatory models" to explore patients' perspectives on participating in the health promotion intervention. According to Kleinman, explanatory models are an individual's beliefs about health and illness that are shaped by the social and cultural values inherent in the individual's contextual reality. These beliefs are partly idiosyncratic and out of the individual's awareness, but also flexible and giving meaning to the individual's behaviour in maintaining health and in choosing and evaluating particular treatments (Kleinman 1981). An individual's explanatory model of an illness may include notions about (i) the etiology of the illness, (ii) reasons ascribed to time of onset, (iii) pathophysiology, (iv) the course of illness, including severity and sick role, and (v) the appropriate treatment of the illness. If there are wide discrepancies in the individual's and the health care professional's explanatory models, there are poor health outcomes, i.e. low adherence to advice about healthy lifestyle (Kleinman 1981, Kleinman 1988). By adapting the concept of explanatory model we explored patients' beliefs about physical health, notions regarding reasons for health problems and onset of symptoms, pathophysiology, course of their physical state of health and appropriate health actions including the health promotion intervention. The interview questions were then constructed around these dimensions (see Table 1 for an outline of the interview guide).

Table 1.

Outline of the interview guide

Explanatory model	Questions
Aetiology	How would you describe your physical health? Why do you think your physical health is like it is? Why do you think your physical health changed?
Timing and onset of physical health problems	What had happened when you first noticed the change in your physical health? How did you respond to this change? Where did you look for help?
Pathophysiology Course of physical state of health	What do you think good physical health is? How would you describe your present state of health? What will happen if your physical health remains as it is at present? What do you fear most with regard to your physical health? How do people around you respond to your physical health?
Intervention and treatment	What can help you to improve your physical health? Describe in detail what you experienced during the intervention? What did you get out of the intervention? Did the intervention help you to change your behaviour in regard to your physical health? How? Suggestions for improvement of the intervention

Participants

All patients who participated in the health promotion intervention and completed follow-up (N=40) were eligible for an interview. The intervention was conducted over a period of two years at a Danish outpatient mental health clinic specializing in the treatment of patients with dual diagnosis. The intervention consisted of individual monthly consultations, group sessions and optional participation in physical exercise in addition to treatment as usual. All patients attending the clinic during the period were offered to participate in the intervention, but a follow-up time of at least six months was required. The consultations were individually tailored and centred on helping patients to change

health behaviour. Consultations were planned in accordance with individual needs and capabilities and included guidance on diet, exercise and stopping smoking. During group sessions, patients were taught about healthy dietary habits and how to read and understand food declarations. In addition, patients were informed about accessible support for exercise and stopping smoking by consultants from the municipality. The group sessions were performed twice during the intervention period, however only ten patients agreed to participate in these sessions. Throughout the study, numerous physical health parameters were measured to assess the effect of the intervention, i.e. weight, waist circumference, body fat percentage, blood pressure, pulse, pulmonary function, and clinical laboratory measurements of serum lipids and average blood glucose. Patients were continually informed about these test results to enhance their motivation for changing or maintaining habits regarding their health. Results from this study have been published in another article (Juel et al. 2016). The first author provided all parts of the health intervention and was member of staff at the clinic during the intervention period.

All patients had: (a) an ICD-10 diagnosis of psychotic disorder (F20-29), affective disorder (F30-39), anxiety disorder (F40-49) or developmental disorder (F90-98); and (b) an ICD-10 diagnosis indicating harmful use or dependence on a substance – either illicit substances or alcohol (F10-19) (World Health Organization 2004). The purposeful sampling strategy entailed recruiting “information-rich” (Patton 1990) patients, from whom we could learn about the explanatory models of physical health and experiences of participating in the intervention. The selected patients were knowledgeable about all parts of the health intervention and had shown high adherence to the individual planned consultations. Of the 16 patients who were approached for an interview, 15 patients were interviewed (see a description of the sample in Table 2). Despite one patient accepting being interviewed, he did not respond to the subsequent requests from the interviewer.

Table 2.

Characteristics of interview participants

Characteristic	No. participants
Sex	
Male	12
Female	3
Age, average (range)*	37.2 years (23-64)
ICD10 diagnosis*	
F20-29	1
F30-39	8
F40-49	1
F90-98	5
Ethnicity	
Danish	14
Other European	1
Civil status	
Single	9
Cohabitee/married	4
In a couple living apart	2
Education	
Primary school	1
Upper secondary school/vocational college	10
Higher education	4
BMI, average (kg/m ²) (range)*	24.4 (17.8-33.9)
Reported substance use*	
Tobacco	11
Alcohol	6
Cannabis	8
Opiates	1
Cocaine	4
Amphetamine	3
Hallucinogenics	1

F20-29: psychotic disorders; F30-39: affective disorders; F40-49: anxiety disorders; F90-98: developmental disorders; BMI: body mass index

* at concluding consultation

Interviews and data collection

The first author conducted the semi-structured interviews. The interviewer performed the intervention and developed a relationship with the patients prior to the interview. The interviews were mostly performed at the patients' homes, or otherwise at the outpatient mental health clinic, where the intervention took place. The interviews lasted on average 60 min (range 36-85). By adopting and rephrasing the questions proposed by Kleinman (1981), the interview guide included open-ended questions about the patients' explanatory models of physical health as well as their experiences of participating in the health promotion intervention (see Table 1 for an outline of the interview guide). The transcription and reading of the first interview showed that the patient only put experiences of the intervention into words to a certain degree. The patient might have regarded this information as unnecessary, because the interviewer had already carried out the intervention. We therefore decided to include an additional question addressing the lack of a detailed description of patients' experiences during the intervention in the remaining interviews. The outline was to some extent used as a structuring format of the interviews, but was flexible if unexpected issues or topics emerged. The interviews were audio-recorded and transcribed verbatim by the interviewer and a research secretary leaving out nonverbal aspects of the interview, pauses, hesitations, sighs and laughing. The accuracy of the transcripts was checked against the recordings by the interviewer. Prior to the interview, patients were questioned about ethnicity, civil status and the highest completed level of education. Information about age and diagnoses were extracted from the patients' electronic patient records.

Data analysis

The thematic analysis consisted of three stages (Coffey & Atkinson 1996) and was carried out after all the interviews were transcribed. *The first stage* consisted of an open data-driven coding process, which took place after reading the interview transcripts in full. The aim was to familiarize the data and to get a sense of the transcripts as a whole. Then, each interview transcript was carefully read to

identify data involving physical health. These segments of text or significant words were assigned a preliminary category name, reflecting the general thematic content. The first author coded the transcripts. The last author independently coded significant parts of the data and differences and similarities in the codes were discussed with the aim of opening the inquiry into the dataset up. All preliminary categories were visually presented in a data display and grouped according to common properties. Lastly, interview transcripts were reread in full, to check for presence of preliminary categories within the whole dataset. Possible patterns between categories were noted. *The second stage* consisted of a theory-driven reorganization of preliminary categories according to the five dimensions of Kleinman's concept of explanatory model. However, it was only possible to link some of the categories with Kleinman's concept. We decided not to force the inductively derived categories to fit the concept, using it as a general organising principle in theorizing about the patients' health beliefs. The categories were then organized to answer the research question. *The third stage* consisted of an exploration of the meanings within categories and an interrogation of relationships between categories. This facilitated the conceptualization of broader conceptual categories and the development of a general coherent theoretical interpretation. The conceptual categories were verified by iterative dialogue with the original dataset and by exploring similarities and differences between patients. Finally, interview transcripts were reread in order to check for accuracy of the interpretation.

Ethics

The patients might have felt obliged to take part in the interview, because the interviewer had also provided the intervention. Acknowledging this, the interviewer emphasized that participation was voluntary, that confidentiality would be protected and that patients were entitled to withdraw at any point without consequences for their ongoing treatment. This was also noted in the information sheet that was provided to potential participants prior to the interview, which also explained the aim and

practicalities of the study. Written consent was obtained from all patients. The study was approved by the Danish Data Protection Agency (identification no. 2007-58-0010), and performed in accordance with the ethical principles set forth in the Declaration of Helsinki (WMA 2013).

RESULTS

The patients' understanding of health and how they perceived the intervention's influence on their personal agency in regard to health, will be presented under the following three headings: 1. Beliefs focused on present health, 2. Normalising health problems, and 3. Physical and mental health are intertwined.

1. Beliefs focused on present health

The first theme concerned patients' beliefs about their health and how these beliefs were focused on their present situation. In general, the patients described themselves as being in good health and stated that they were content with their health as long as they did not experience any bodily symptoms and were not dependent on help from others. They added legitimacy to their belief about being in good health by emphasizing that they did not experience any bodily symptoms from their present health behaviour. This point was made in particular with regard to their use of tobacco and other substances. The patients only voiced concerns about their health when it prevented them from engaging in the regular activities of their everyday life. For instance, most patients did not reflect upon how tobacco influenced their health, before they felt encumbered by their breathing when performing routine everyday activities, i.e. going up stairs. They only rarely imagined how their health was of importance or could be improved beyond these concrete everyday situations.

The patients' focus on here-and-now was particularly evident in descriptions of substance use. Their descriptions of how substances influenced their health were ambiguous, but in general they did not believe that the use of substances was of much significance to their health. A typical way of adding legitimacy to their arguments was to emphasize their choice of substance as 'healthier' than other substances. Participant 15 was a middle-aged male, who was diagnosed with an attention deficit hyperactivity disorder. He described an everyday life with no employment or home of his own. In the following data extract, he reflects upon a question about whether using amphetamine had affected his health:

Participant 15: *"I've, you know, made a day last about a week or so by being awake for 4-5 days and then sleep for 2-3 days. I think that when you've done this for, you know, 10 years in a row, I don't think I would have, you know, felt better if I hadn't done it. I don't feel any physical consequences of doing drugs. If you, you know, look at my father, he was told that if he did not quit drinking [alcohol], he would die from it because his pancreas or something would go bust. I mean, he's always been drinking a little but for a while it was like full throttle and it nearly ended badly. I don't think that it [amphetamine] is as bad as alcohol or cigarettes for that matter".*

In this account, participant 15 denied feeling any physical effects after taking amphetamine for a decade. He minimized the possible consequences of taking amphetamine by stating that he was unable to imagine that his health could have been better without amphetamine and by drawing a parallel to his father, who almost died from his alcohol intake. He concluded by adding tobacco [cigarettes] to the comparison, which had further added to reducing the danger of taking amphetamine.

The patients explained that the intervention made them reflect upon how their actions influenced their health. In this way, the intervention appeared to challenge their belief that substance use was of little significance to their health. Also, the patients explained that the intervention had inspired them to act more favourably with regard to their health generally. They described being more focused on their dietary intake, grocery shopping and making exercise part of their everyday life. Thus, the intervention appeared to challenge the patients' narrow focus on their present state of health. Some patients explained that the continuity of the consultations endorsed this focus and helped to make health-promoting actions more of a routine. Other patients explained that they had received counselling on stopping smoking during the intervention and that this helped them to decrease their tobacco use. They realised that their breathing was more than an immediate concern in their present everyday life.

2. Normalising health problems

The second theme concerned the different approaches that patients used to minimize the significance of the health problems they experienced. The patients' ways of responding to or viewing signs of ill health seemed to be ways of normalizing their present state of health and to be ways of minimizing the need for health-promoting action. The patients explained that they adjusted their everyday life according to their health and avoided situations that would provoke signs of health problems. Other patients normalised their health problems by explaining that they simply grew accustomed to their health problems, since health problems were age-related and therefore likely to appear. Typically, the patients reasoned that if they had once been athletic, it somehow prevented their health from further deterioration. Experiencing a health problem therefore rarely appeared to encourage them to change actions related to their health.

Several patients minimized the significance of health problems by arguing that health problems were temporary and would ease off without doing anything. This argument added to legitimizing not responding to symptoms of ill health and exemplifies their perspectives as being focused on here-and-now, as described above. For instance, some patients explained that they rarely sought medical attention for their health problem: *“Cause, if you go to the doctor every time it hurts a bit, it'll take up all of your time I reckon.”* (Participant 5). In this account, the patient minimized the significance of bodily pain by arguing that it would be absurd to consult a doctor each time he felt pain, as it would take a lot of his time.

Participant 4 was diagnosed with bipolar disorder and had used amphetamine and marijuana daily for several years. However, at the time of the interview he only smoked marijuana, which he regarded as self-medication for his insomnia. Leading up to the following extract, he had been talking about episodes with shortness of breath, which he described as having “a heart attack”:

Participant 4: *“I don't think I've made a huge effort about it [getting rid of the chest pain], because I felt that it would go away by itself. All my life I've had physical defects, haven't I, so I reckoned that this too would go away by itself. I mean, I had asthma once, but after a few weeks it went away, I reckoned, and after a while I stopped taking my medicine 'cause I didn't feel it anymore”.*

In this account, participant 4 explained that he had not acted in response to the signs of a possible heart problem. He explained that he had previously had asthma and which had appeared to heal itself without continual treatment. He used this experience to rationalise his lack of action with regard to his “heart attacks”. He further explained that he stopped taking the medication, when the signs of

asthma disappeared. Most noticeably, he did not understand this health intervention as being a means to prevent a similar health problem.

On the one hand, the patients' accounts of what was needed to improve their present health implicated relatively modest initiatives and actions on their own behalf. They rarely saw their health as being capable of improving beyond its present state. For instance, participant 9 regarded a weekly walk as sufficient to improve his health: *"I'm taking a course where I go for a walk once a week and that's basically all that I do. I believe being physically active once a week is enough for me"*. The patients legitimized their lack of health-promoting actions by arguing that they were engaged in doing other things e.g. full-time work or being a full-time addict, therefore they generally had no interest in exercise or had found previous actions useless. Other patients explained that uncertainty regarding employment or housing made actions to improve health less important. Some reasoned that their positive thinking had a positive impact on their health, rendering other health-improving actions redundant. On the other hand, several patients also accepted that there was a need for more substantial action to improve their health by describing their reflections with regard to stopping smoking or engaging in higher-intensity exercise.

All patients valued the health measurements in the intervention, because the measurements confirmed/disconfirmed their concerns about their health and provided tangible insight into their state of health. In this way, the measurements made it difficult for patients to minimize the significance of the health problems they experienced and to normalize their present state of health. They explained that it seemed difficult to achieve this insight without the measurements. They also valued the measurements because they enabled them to see that their health actions were useful.

3. Physical and mental health is intertwined

The third theme concerned patients' beliefs with regard to the links between psychological health and physical health. They explained that problems with regard to their mental health could lower their awareness of their physical health. They perceived psychological well-being as fundamental to the ability to improve their physical health, rendering physical health secondary to mental health. Pointing out psychological instability appeared to work as another strategy for patients to legitimize their lack of health-improving actions, as described above.

The patients understood substance use as a way of controlling their mental health. For instance, substances were interpreted as having a calming effect on psychological symptoms. Some patients valued tobacco smoking as it gave them a sense of fellowship with other smokers. Participant 2 refused to be categorized as a person suffering from alcoholism. He perceived alcohol drinking as natural when hanging out with colleagues, thus he experienced more aims for his alcohol intake:

Participant 2: "Because of my ADHD, my anxiety and social phobia, my mind is going at 100 miles an hour. But if I drink one, two three beers, everything calms down and I relax. That's why, when it happens, I refer to myself as a psychological alcoholic. But I don't drink alcohol every day".

In this account, participant 2 explained how he used alcohol to control his mental distress. He labelled himself as 'psychological alcoholic' and differentiated himself from 'normal alcoholics', by making his substance use appear more legitimate. By emphasizing that he did not drink alcohol on a daily basis, he further minimized the significance of his alcohol use.

However, more patients explained that exercising more and changing their dietary intake had a positive influence on their psychological health. This understanding appeared to create an image of the intervention as providing the patients with an alternative way of controlling their mental health. It appeared to be a self-perpetuating process, where their psychological well-being enabled even more health improvements, and enabled them to break with the standstill previously experienced with regard to their health. The design of tailoring the intervention to individual psychological problems appeared to endorse this process. In addition, the continual consultations contributed to the process by sustaining the patients' awareness of their physical health, despite some patients experiencing their motivation declining between meetings and suggesting more frequent consultations.

DISCUSSION

This study employed a qualitative research design to explore patients' beliefs about physical health and perspectives on the intervention's influences on their personal agency with regard to their health. The analysis indicated that they held a rather fixed mindset regarding their health and thus rarely believed their health to be capable of improvement beyond its present state. The patients employed several strategies to normalize their present health. These strategies appeared to minimize the significance of the health problems they experienced and the need for health-promoting incentives and actions. However, the intervention appeared to some degree to challenge the fixed mindset of the patients in several important ways.

Exploring concepts of health to understand and explain health behaviour have been the objective of other studies. Jensen (2013) explored perspectives on health among poorly educated women employed in unskilled jobs. The similarities in the health ideology of these women and the patients in the present study suggest that this health ideology could possibly be more general and distinctive

in the popular sector. According to Kleinman (1981), the popular sector is the lay, non-professional arena, in which illness is first defined and health care activities initiated. Despite the argument that this health ideology is fixed (Jensen 2013), our study indicated that engaging patients in a health promotion intervention could to some extent broaden their beliefs about health, because the patients included new health practices in their everyday life. This points to the relevance of continuing to provide similar health interventions to all patients from the popular sector accessing treatment in mental health settings.

All patients emphasized the importance of health measurements, because the measurements provided tangible insight into their state of health. In addition, the measurements appeared to prevent the patients from normalizing their physical health problems. This could indicate that the patients had accepted and adopted the bio-medical understanding of health deficiencies. The finding is consistent with Roberts and Bailey (2013), who emphasized the role of psychometric measures as key motivation for people with mental illness to engage in lifestyle changes. However, why patients favoured these measurements appears uncertain, because Roberts and Bailey (2013) never explored how these measurements bridged the health beliefs of their patients.

Future studies evaluating health-improving interventions for patients with mental illness may benefit from including an exploration of health beliefs, because this insight could enhance understanding non-adherence with health behaviour interventions. Healthcare providers would then be able to account for contextual and social factors when taking decisions on treatments, as emphasised in the study by Villena and Chesla (2010). Happell et al. (2016) recently contributed to this understanding and found views on health simply involved the ability to meet challenges of everyday life, similarly to the finding in the present study.

To add legitimacy to their substance use, some patients in our study made comparison to the substance used by other people. According to the theory of downward comparison (Buunk & Gibbons 2007), people who feel threatened on a particular dimension compare themselves to others who are thought to be worse off on the same dimension. For instance, the role of downward comparison was described within the context of a group-based intervention to improve self-care skills in people with chronic illnesses (Rogers et al. 2009). According to Rogers et al. (2009), chronically ill respondents compared themselves to other group members to feel better about their own situation and to legitimize their chosen approach for coping with the illness. In a similar way, the patients' use of downward comparison in the present study could be viewed as a coping mechanism to evaluate themselves and their substance use more favourably. In this way, patients' substance use became more acceptable to them and it enhanced their sense of being in good health.

Kleinman's concept of explanatory models proved to be a fruitful way of structuring the interview guide, but seemed less fruitful as an interpretative framework for exploring beliefs about health. The issues, that patients were concerned about with regard to health, were very distinctive from the concept's five dimensions. Kleinman's original view of explanatory models was focused on illness and the five dimensions resemble a biomedical understanding of illness. Most probably because he was teaching the cultural aspects of health and illness to medical students when he developed the concept. Opposed to models of health, illness models are probably more likely to comprise ideas of a defined onset and causality and thus, why most patients had difficulty in clarifying these notions in relation to their health. Other studies, exploring conceptions of particular illnesses (Pereira et al. 2007, Solimeo, Weber & Gold 2011, Buus et al. 2015), presented their findings more in line with the original theoretical structure of the concept in their interpretative description of illness beliefs.

However, by eschewing the concept's theoretical dimensions as an interpretative structure, we avoided committing a 'category fallacy' (Kleinman 1987), and succeeded in making a nuanced and coherent interpretation of the patients' cultural idioms of health. Furthermore, applying a qualitative methodology requires openness for generating new insights.

Adopting the concept of explanatory models was however advantageous in disclosing the flexibility and ambiguity of the patients' health beliefs (Kleinman 1981). This became particularly evident in their notions about the need for health-improving action and initiatives. The patients made arguments to legitimize them not acting with regard to their health, while simultaneously accepting the need for more substantial action to improve their health. This could indicate that they had adopted the health ideology of healthcare professionals and emphasized it in the interview context.

One argument could be that the patients, already being familiar with the interviewer, crafted their responses to be amenable to the interviewer (Miles, Huberman & Saldaña 2014). According to Kleinman (1981), laymen rarely reveal their beliefs about health as these beliefs might appear nonsensical from the health care professionals' viewpoint. However, more steps were taken to address this potential limitation to the data collection. First, the interview guide consisted of open-ended questions that enabled the patients to elaborate on their accounts and reveal aspects of their experiences that were not expected by the interviewer. Second, at the beginning of each interview the interviewer clarified that she was not looking for particular answers regarding their health, but was interested in recording the whole range of possible answers. Third, the interviewer continually reflected on following up unexpected responses from the patients. Overall, these steps tried to avoid the bias stemming from the interviewer's effect on patients' responses.

It should be considered, whether the health beliefs of selected patients were different from the beliefs of non-selected patients and thus might have had different experiences of the intervention. However, as indicated by Table 2, patients interviewed presumably did not differ from all intervention patients (Juel et al. 2016), e.g. non-selected patients could not be characterized as suffering from more severe mental illnesses or cognitive disabilities.

To ensure the trustworthiness of the interpretive process, the interpretations were systematically and rigorously challenged by: (a) asking patients for further descriptions and clarifications of meaning during interviews, (b) critically reviewing interpretations with the last author, aiming at an in-depth understanding of the meanings within conceptual categories, (c) confirming the representativeness of interpretations across the whole data set and actively seeking opposing evidence, and (d) exploring rival interpretations. Furthermore, the first author kept a detailed research log during data generation, coding and analysis, which enhanced the reliability of the research process.

CONCLUSIONS AND IMPLICATIONS

This study created knowledge about the health beliefs of patients with concurrent mental illness and substance use. Our findings suggested that the patients' focused on their present health, and that they used different approaches to minimize the significance of the health problems they experienced. Mental health professionals should tailor health promotion interventions to fit idiosyncratic health beliefs, ensuring that interventions are contextually anchored within patients' everyday lives. This could be a potential way of increasing adherence to lifestyle counselling. Further, our findings suggested that health measurements should be utilized regularly, as these measurements appeared to help patients change their health-related behaviour, because the measurements provided tangible

insight into their state of health. Finally, the measurements appeared to prevent them from normalizing their physical health problems. It has proved manageable to implement these health measurements into existing treatments and practices.

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