ASSOCIATED FACTORS OF NURSE-SENSITIVE PATIENT OUTCOMES: a multicentred cross-sectional study in psychiatric inpatient hospitals.

RELEVANCE STATEMENT

In addition to the importance of measuring nurse-sensitive patient outcomes, understanding the factors that are associated with these outcomes is important for tailoring future psychiatric/mental health nursing interactions to the diverse needs of patients. To investigate 'what' factors are associated with outcomes for people with mental health problems in response to the nurse-patient relationship, we selected patient characteristics and relational-contextual factors. To investigate the patients' perspective, we let patients report the outcomes. Since the scale we used is a nurse-sensitive outcome scale focusing on the nurse-patient relationship, the results of the study give insight into what patients experience as facilitating and hindering features of the nurse-patient relationship. These insights can support nurses in designing future-proof nurse-patient relationships.

ACCESSIBLE SUMMARY

What is already known:

- The nurse-patient relationship in mental health care is an important focus of mental health nursing theories and research.
- There is limited research on factors associated with nurse-sensitive outcomes of the nurse-patient relationship.
- Patient-reported outcomes are relevant in the evaluation of mental health care

What this paper adds to existing knowledge:

- It seems to be the first study to examine associations between nurse-sensitive patient outcomes of the nurse-patient relationship and a range of patient characteristics and relationship-contextual factors.
- In this study we found that gender, age, hospital characteristics, nurse availability when needed, nurse contact, and nurse stimulation were associated with the scores on the nurse-sensitive patient outcome scale.

What are the implications for practice:

- Having insight into the factors associated with nurse-sensitive patient outcomes of the nurse-patient relationship can help nurses, nursing students, nursing management and also patients to enhance the nurse-patient relationship, trying to influence outcomes of nursing care.

ABSTRACT

Introduction:

Nurse-sensitive patient outcomes have the potential to improve mental health care. There is a lack of evidence on patient characteristics and relational-contextual factors influencing nurse-sensitive patient outcomes of a nurse-patient relationship.

Aim:

To measure nurse-sensitive patient outcomes of the nurse-patient relationship and to explore the associations between nurse-sensitive patient outcomes and a range of patient characteristics and relational-contextual factors.

Method

In a multicenter cross-sectional study, 340 inpatients from 30 units in five psychiatric hospitals completed the Mental Health Nurse-Sensitive Patient Outcome-Scale. Descriptive, univariate, and Linear Mixed Model analyses were conducted.

Results:

Participants displayed moderate to good average total scores (4.45) and domain scores (≥4.15). Female participants, nurse availability when needed, more nurse contact and nurse stimulation were associated with higher scores. Age differences were observed for some of the domain scores. Scores also varied across hospitals but were not related to the number of times patients were hospitalized or to their current length of stay in the hospital.

Discussion

The results may help nurses to become more sensitive and responsive to factors associated with nurse-sensitive patient outcomes of the nurse-patient relationship.

Implications

The nurse-sensitive results can support nurses in designing future-proof nurse-patient relationships.

KEY WORDS

Psychiatric nursing, mental health recovery, patient outcome assessment, cross-sectional studies, surveys and questionnaires

INTRODUCTION

Transitions in mental health care from inpatient to community-based care, from biomedical to recovery-oriented practice, and from deficit-oriented to strength-oriented support are well documented (Barker, 2017; Chow et al. 2019; Forchuk, 2021; Lorien et al. 2020; Stuart et al. 2017; van Weeghel et al. 2019). To ensure safe and effective mental health care, responsive to the evolving societal values of care, there has been an elevated interest in improving health outcomes, particularly from patients' perspectives (Kilbourne et al. 2018; Kersting et al. 2020; Pathare et al., 2018; Scheid & Wright, 2017; Shaw et al., 2019). These patient-reported outcomes have the potential to capture information about whether and to what degree health care is effective from the perspective of the patient (Kampstra et al., 2018; Kynoch et al., 2022, Vanhaecht et al., 2021). Patient-reported outcomes refer to the patient's health status or condition (e.g., symptoms, treatment effects, or functional status) and are collected directly from the patient without interpretation of the patient's responses by a clinician or other person (De Bienassis et al., 2021; Weldring & Smith, 2013). Patient-reported outcomes have the potential to improve current and future mental health care (Cook et al., 2017; Coster et al. 2018, Steel et al., 2020).

Nurse-sensitive patient outcomes (NSPOs) are defined as variable conditions, behaviors or perceptions of patients measured in response to nursing intervention(s) (Discroll et al. 2017; Moorhead et al. 2018). Therefore, NSPOs provide empirical evidence on nurse-sensitive measures linking nursing input and interventions to patient outcomes (Coster et al., 2018, Stalpers et al. 2015). NSPOs can be measured by valid and reliable scales to monitor patient outcomes with nurses' scope and domain of practice (Doran, 2011; Desmet et al., 2021, Kilbourne et al., 2018, Veldhuizen et al. 2021).

Although research has shown that therapeutic relationships have a great impact on outcomes, NSPOs of psychiatric and/or mental health nursing are often focused on one distinct nursing role or distinct nursing intervention e.g. crisis interventions or Protected Engagement Time such as Time Together intervention (Gabrielsson et al., 2021; Martine et al., 2022; Molin et al. 2018).

Current evidence on outcomes of nurse-patient relationships is limited. However, the interpersonal relationship connecting two humans, a nurse and a patient, is described as crucial in mental health nursing. It is conceptualized by H.E. Peplau's Theory of Interpersonal Relations and important nursing authors such as Phil Barker, John Cutcliffe, Kathleen Delaney, Cheryl Forchuk, and Kathleen Wheeler (Callaway, 2002; Deproost, 2018; McAllister et al. 2019; Moreno-Poyato, 2016; Santos & Cutliffe, 2018). The nurse-patient relationship, as crux of psychiatric and/or mental health nursing, influences patients' treatment and leads to improved recovery of the patient. It is a cause of change as well as vehicle for change in a personal-subjective recovery process (Barker, 2017; Feo et al. 2021; Forchuk, 2021; Hartley et al. 2020; Lakeman et al. 2022; Peplau, 1991; Norman & Ryrie, 2013; Stickley & Wright, 2014; Wheeler, 2014)

Patient outcomes of the nurse-patient relationship are rarely measured and the scales are often focused on clinical outcomes of nursing and other psychotherapists' activities (e.g. Rosenberg Self-Esteem Scale, Beck's Depression Inventory, Brief Psychiatric Rating Scale BPRS) (Boateng et al., 2018; Deproost, 2018; Dickens et al., 2019; Kilbourne et al., 2018; Montgomery et al., 2009; Xu et al., 2020; Valderas et al., 2008).

Recently, the Mental Health Nurse-Sensitive Patient Outcome-Scale (MH-NURSE-POS) was developed and psychometrically evaluated to measure NSPOs of the nurse-patient relationship in psychiatric hospitals. The MH-NURSE-POS is patient-reported and consists of 21 NSPOs divided into four domains. Each NSPO is rated by a six-point Likert-scale ('fully disagree' to 'fully agree') (Desmet et al. 2021). NSPOs that evaluated the most 'meaningful' nurse-patient relationship during hospitalization were measured through the MH-NURSE-POS in a multicentred cross-sectional study. Participants displayed moderate to good average scores for the MH-NURSE-POS total (4.42 SD=0.89) and domain scores (ranged between 4.09 SD=1.20 and 4.61 SD=1.08) This shows that patients perceive the nurse-patient relationship as contributing and meaningful to their treatment. However, the variations in scores imply contrasting perceptions of outcomes of the nurse-patient relationship. Considering how the variations in the MH-NURSE-POS scores are affected can be helpful for psychiatric and/or mental health nursing to enhance the outcomes of the nurse-patient relationship (Desmet et al., 2023).

In research on psychotherapy outcomes, variation is mostly associated with patient and therapist characteristics, features of the therapeutic relationship, and the treatment context e.g. gender, age, health beliefs, therapists' interpersonal skills, number of hospitalizations over a lifetime, and the current length of admission (Andersen, 1995; Beutler et al., 2016; Beutler et al., 2018; Burr & Richter, 2021; Gonzalez-Blanc et al., 2021; Holdsworth et al. 2014; Johns et al., 2019; McAllister et al. 2019; Simo et al. 2018).

Research on outcomes of nurse-patient relationships is primarily qualitative and shows that a number of relational-contextual factors articulated in patients' narratives are associated with the outcomes e.g. proximity and closeness, time spent together, small talk, invitation to engage in individual or group sessions on a daily basis, active participation in the plan of care, and characteristics of the setting (Barker, 2017; MacDonald, 2016; Molin et al., 2019, Santos & Cutcliffe, 2018; Sharac et al., 2010; Wood & Alsawy, 2016).

Combining the MH-NURSE-POS with patient characteristics and relational-contextual factors identified as important for the outcomes of the nurse-patient relationship can give insight which factors influence patient-reported outcomes of nurse-patient relationships. These insights can be valuable to improve nursing care in mental health care (Gonzalez-Blanc et al., 2021, Moorhead et al. 2018; Coster et al., 2018). It can support the planning, delivering, and quality assessment of future-proof psychiatric and/or mental health nurse-patient relationships (de Bienassis et al., 2022; Desmet et al., 2022). To

ensure person-centered and strength-based nursing, measuring associated factors of patient-reported outcomes of nurse-patient relationships can help nurses to understand the black-box of processes of interpersonal change by psychiatric and/or mental health nursing to guide clinical shared decision-making (Forchuk, 2021; Deproost, 2018; Peplau, 1991; Santos & Cutcliffe, 2018). Moreover, the insights can be essential to ensure resources are well-spent and have the potential to increase the value of nursing as a profession and discipline (Kynoch et al., 2022; Lorien et al., 2020; Moorhead et al., 2018; Prentice et al., 2021).

AIM

This study measures nurse-sensitive patient outcomes and identifies associated factors through the Mental Health-Nurse Sensitive Patient Outcome-Scale. The aim of this study was two-folded: (1) to measure nurse-sensitive patient outcomes of the nurse-patient relationship and (2) to explore the associations between the nurse-sensitive patient outcomes and a range of patient characteristics and relational-contextual factors.

METHODS

Study design

A multicentred cross-sectional study was performed. The STROBE statement checklist was used for reporting (Von Elm et al., 2007).

Setting & participants

Given the predominance of inpatient mental health care in Belgium, we focused on inpatients in psychiatric hospital units. With 1.37 beds per 1000 inhabitants, the Belgian healthcare system has the second highest ratio of inpatient psychiatric beds per inhabitant among member countries of the Organization for Economic Cooperation and Development (OECD). Hospitalization units in psychiatric hospitals provide specialized treatment and care for patients with severe psychiatric and/or mental health problems (e.g. addiction, psychosis, depression). In addition, most professional psychiatric and/or mental health nurses work as employees in psychiatric hospitals (Mistiaen et al., 2019).

In our study we used purposive sampling, also called judgment sampling, a nonrandom technique with sound judgment to concentrate on people with particular characteristics to achieve the depth of understanding (Etikan et al., 2016). Hospitals were selected from the total population of Belgian psychiatric hospitals with inpatient units. Selection criteria focused on obtaining a representative sample of hospitals taking the following variables into account: the size of the hospital (number of beds n:72-288), the degree of urbanization of the site, the geographic distribution across the different provinces of Flanders, and the type of psychotherapeutic care and treatment provided (e.g. admission wards, observation and active treatment wards, short- and long-term treatment wards, social rehabilitation wards, cognitive behavioral treatment wards, psychodynamic therapy wards). Subsequently, in each

hospital, individuals admitted to one of the psychiatric wards were eligible to participate in the study if they were 18 years of age or older, had been admitted to an inpatient psychiatric hospital at least two weeks previously, and spoke Dutch. Exclusion criteria included patients admitted to crisis wards (voluntary or compulsory) and patients with intellectual disabilities.

Based on a standard written instruction protocol received from the investigators, which included information about the study and the inclusion criteria, ward managers informed participants about the aim and procedure of this study. They were also informed when a researcher would come to the ward to collect the data. Patients participated in the study during their admission and treatment at the ward.

A total of 353 participants in 30 wards of five psychiatric hospitals completed the questionnaire between February 2016 and March 2017. The data were checked to minimize acquiescence bias or the tendency to agree with items regardless of content. After removing 13 questionnaires with more than 30% missing answers and cases with repetitive response patterns (long-string responses), a total of 340 completed questionnaires from inpatients were retained for further analysis (Kam & Meyer, 2015).

Variables and measurement

Data were collected using the validated Mental Health Nurse-Sensitive Patient Outcome-Scale (MH-NURSE-POS) (Desmet et al. 2021) and questions about patient characteristics and relationship contextual factors. The MH-NUSE-POS is a recently developed and validated scale to measure NSPOs of the nurse-patient relationship in psychiatric hospitals. The MH-NURSE-POS was developed based on a literature review, independent experts' advice, and an expert panel. The content validity was tested in a two-round Delphi procedure and focus groups with patients. A pilot test, based on cognitive interviews, confirmed the feasibility of the MH-NURSE-POS. The factor structure (Kaiser–Meyer–Olkin measure of sampling adequacy 0.924; Bartlett's test of sphericity $v2 = 4162.537$; $df = 231$; $p < 0.001$), convergent validity by the Individualized Care Scale (Pearson correlation 0.660; $p < 0.001$), and reliability (Cronbach's Alpha 0.854) were evaluated. The MH-NURSE-POS consists of 21 NSPOs divided into four domains. The 21 items of the MH-NURSE-POS were explicitly linked to the overarching stem 'Due to the nurse…'. The first domain 'growth' refers to a sense of personal agency (8 NSPOs). The second domain 'expression' refers to attunement/mentalization and coping with personal emotions and/or problems (4 NSPOs). The third domain 'control' refers to self-control in risk-taking, establishing and making safe and meaningful contacts (5 NSPOs). The 'motivation' domain focuses on the personal motivation for self-change (4 NSPOs) (Desmet et al. 2021). Each nurse-sensitive patient-outcome is rated by a self-reported six-point Likert-scale ('fully disagree' to 'fully agree'). Only for the NSPOs in the domain 'control', which pertain to items about safety, participants could select 'not applicable', as this may not apply to every participant, except for 'through, the nurse I build valuable contacts with others'. Patients had the opportunity to add suggestions through an open-ended question after completing the questionnaire.

We were interested in exploring the impact of patient characteristics most commonly cited in outcome research as factors associated with change: gender, age, number of hospitalizations, and time of current admission. The hypothesized relational-contextual factors for change, were operationalized to assess proximity and closeness, time spent together, small talk, the invitation to engage in individual or group sessions on a daily basis, and active participation in their plan of care. More concrete, patients were asked to rate the following statements: availability when needed ('Nurses are available when I need closeness') and stimulation ('Nurses stimulate me to do things my way') on a five-point scale from never to always. Contact ('I have contact with nurses') was measured using a five-point Likert scale, with response categories ranging from 'too little' to 'too much'. Inpatient psychiatric hospitals are referred to as 'hospital' in this manuscript.

To minimize non-response bias and social desirability, questionnaires were completed in a separate room on the ward in the presence of a researcher who was not affiliated with the care team and in the absence of the care team.

Data-analysis

Statistical analyses were performed using SPSS version 26.0. For each individual patient in the final sample (n=340), mean scores were calculated for the MH-NURSE-POS total score (21 NSPOS) and the four domains. Cronbach's alpha was estimated to present the internal consistency of the scale and four domains. A Cronbach alpha higher than 0.70 is considered as ‘acceptable’, and higher than 0.80 as ‘good’ (Polit & Beck, 2012).

The normality of continuous variables was checked using skewness and kurtosis, Kolmogorov-Smirnov test, a histogram, a Q-Q plot, and by comparing the mean and median. These data showed a right-skewed distribution. Individual characteristics and contextual factors were tested individually against the dependent variable and rescaled based on clinical relevance in the existing literature and/or insufficient number of degrees of freedom within the variable. To examine possible associations, univariate analysis was first conducted using the Mann-Whitney U test for dichotomous variables and the Kruskal-Wallis test for categorical variables. In this study, the two-sided p-value of $p < 0.05$ indicated statistical significance. Variables with $p < 0.05$ in the univariate analyses were combined in a Linear Mixed Model analysis. We could not include the ward level due to potential misclassification as the exact ward was not recorded during data-collection. Backward selection ($p<0.05$) was selected to determine which data best explain the data. Tests for collinearity of statistically significant variables from the univariate analysis yielded a variance inflation factor (VIF) of ≤ 4 (1.012-1.887) and tolerance values greater than 0.4 (0.533-0.988) for all variables (Yoo et al., 2014).

Ethical approval

The study was approved by the Ethical Review Committee of XXX and the ethics committees of the participating hospitals (XXX-XXX). All participants received written and oral information about the purpose of the study and its procedure and gave written consent.

RESULTS

Patient characteristics

The questionnaire was completed by 340 patients. The mean age was 44.7 years and 52.7% of the participants were female. More than one-third (35.9%) of the participants were hospitalized for the first time, and a substantial number were admitted for four months or longer (39.4%). Detailed patient characteristics are shown in Table 1.

Mental Health Nurse-Sensitive Patient Outcome-Scale

Table 2 gives an overview of the MH-NURSE-POS total and domain scores. Overall, the average total score and average domain scores ranged between 4.15 (SD=1.20) and 4.65 (SD=1.10), respectively. There were no additional suggestions on the open-ended question found after a critical reflection by the researchers. In the domain 'control' the lowest score was found for the item 'due to the nurses I build valuable contacts with others' (mean 3.77, SD=1.47). In the domain 'motivation' the highest score in all rated NSPOs was observed for the item 'due to the nurse I remain committed to my treatment' (mean 4.99, SD=1.23). The total score (Cronbach's α 0.941) and domain 'growth' (Cronbach's α 0.935) had excellent internal consistency. All other domains had good internal consistency (Cronbach's α between 0.822 and 0.858.

Associations of NSPO with patients' characteristics and relational-contextual factors

Univariate analysis revealed that female participants scored statistically significantly higher on both the total score MH-NURSE-POS and the four domains (Table 3). Participants aged 65 years or older scored higher than participants aged 25 years or younger and aged 25 to 65 years in the domains MH-NURSE-POS, 'growth,' 'control,' and 'motivation,' but not in 'expression.' Readmitted patients scored statistically significantly higher on 'growth' than patients admitted for the first time. Time of admission was not statistically significantly related to mean scores on the overall test MH-NURSE-POS or any of the four domains.

Univariate analysis showed that the relationship contextual factors 'availability when needed', 'contact', and 'stimulation' were statistically significantly associated with the mean score of MH-NURSE-POS and the four domains. Statistically significant differences were found between hospitals for most subdomains, except for 'expression' (Table 3).

In Linear Mixed Model analysis, four variables remained statistically significantly associated with the overall score of MH-NURSE-POS and the four domains (Table 4): female participants; 'availability

when needed: always/mostly yes', 'contact: too little/not too little', 'stimulation: always/mostly yes'. Hospital 4 was also statistically significantly associated with all scores, but not for the 'expression' domain. In addition, participants who were 65 years or older were statistically significantly associated with higher scores for the overall index MH-NURSE-POS and the domains 'growth' and 'expression'. Admission to hospital 2 was statistically significantly associated with worse scores in the domain 'expression'.

DISCUSSION

This is the first study to measure NSPOs and identify factors associated with NSPOs through the MH-NURSE-POS. We measured NSPOs of the nurse-patient relationship and explored the associations between these NSPOs and a range of patient characteristics and relational-contextual factors.

In this study, the moderate to good patient-reported scores do not address patient-reported experiences of the nurse-patient relationship but patient-reported outcomes of the nurse-patient relationship (Coster et al., 2018; de Bienassis et al., 2021; Kynoch et al. 2022; Moorhead et al., 2018, Steel et al. 2020). The scores were collected directly from the patient with no interpretation from anyone other than the patient (Kampstra et al., 2018; Kingsley & Patel, 2017; Wolff et al., 2021).

Our results on associated factors are helpful to understand and interpret the scores on the MH-NURSE-POS (Burr & Richter, 2021; Gonzalez-Blanch et al., 2021; Kynoch et al., 2022). Identifying facilitating and impeding factors of the nurse-patient relationship by measuring patient-level associations is a first step to understanding the black box of processes of interpersonal change. Our results can support nurses to guide clinical practice in psychiatric hospitals, support future directions in nursing education, improve quality assessment of the nurse-patient relationship, ensure cost-effective nursing care, and pinpoint important directions for future outcome research (de Bienassiss et al., 2022; Kynoch et al., 2022, Lorien et al., 2020; McAllister et al. 2019; Prentice et al., 2021; Wheeler, 2013; Vanhaecht et, al. 2021).

Our results on associations of patient characteristics appear to validly reflect the predisposing sociodemographic characteristics and enabling resources defined in Andersen's Expanded Behavioral Model of Health Service Use (Andersen, 1995). Our gender- and age-related findings confirm documented evidence of predisposing sociodemographic characteristics as conditions for the likelihood of health service use (Simo et al. 2018). Female gender and older age are generally associated with higher utilization of professional services, including mental health support (Burr & Richter, 2021). Interestingly, our findings on the number of hospitalization during lifetime and the current length of admission as not associated factors are inconsistent with findings in the literature on mental health services. However, in this study, the two highest scores of all NSPOs assessed from the MH-NURSE-POS were observed for the outcomes 'due to the nurse, I remain committed to my treatment' (mean 4.99,

SD =1.23) and 'due to the nurse, I am motivated to follow my therapy program' (mean 4.82, SD = 1.28) in the domain 'motivation'. Therefore, it is likely that positive treatment experiences, defined in Andersen's model as a strong enabling factor for health service utilization, indicate that the patient's experience of being encouraged in the existing need is more important than the previous experience with the caregiver during prior need (Pathare et al. 2018, Simo et al. 2018).

The study findings on relational-contextual factors also appear to validly reflect the evidence for organizational factors as enabling resources in Andersen's model. Understanding NSPOs in context recognizes that the external environment interacts with health outcomes (Andersen, 1995). Study findings on the significant associated factors - 'availability when needed,' ' stimulation by nurses' and 'contact'- on NSPOs fit well with previous findings on nurses' knowledge and awareness of their distinct therapeutic contribution in mental health care (Barker, 2017; Lakeman & Molloy, 2018; Peplau, 1991). Specifically measuring characteristics of the nurse-patient relationship and its treatment context using NSPOs opens the door for psychiatric and/or mental health nurses in clinical practice to promote recovery within the nurturing space (Gabrielsson et al., 2020; Harley et al., 2020; Molin et al., 2019). Therefore, defining essential unrecognized, unarticulated, but deeply rooted role behaviors in inpatient care is a critical strategy to revitalize the concept of interpersonal engagement in relationship-based nursing (Delaney et al., 2017). Although we do not define nursing as 'psychotherapy', our findings are consistent with previous studies of the primacy of powerful 'common factors' in therapy. The so-called 'common factors', which refer to the main active ingredients of therapy, are inextricably linked to all therapeutic relationships and are not dependent on any particular psychotherapeutic model (Delaney, 2017; Gabrielsson et al., 2020, Moreno-Poyato et al., 2016; Wheeler, 2013). However, our study findings on relational-contextual factors suggest future research on developed skills and individualized application by psychiatric and/or mental health nursing to the application of 'common factors' to meet the evolving needs and expectancy of people with mental health problems (Dziopa & Ahern, 2014). Scores also varied across hospitals. However, a detailed rationale for the differences between hospitals based on selection criteria cannot be fully provided. The high urbanicity in the area where Hospital 4 is located may be an influence. The literature suggests that living in an urban area may affect access to health services (Vlahov & Galea, 2002). However, further research is essential to gain insights into key hospital characteristics and their influence on health outcomes (Chow et al., 2019; Lorien et al., 2020; Stievano et al., 2019).

Study Limitations

Several critical considerations must be made about this study.

First, based on the comment that "numbers are easier to check than their origin," referring to the dominance of statistics to scrutinize patients' stories into numerical data of assessment in psychotherapy research, our findings should be interpreted with caution and the use of the MH-NURSE-POS should

not be considered as a routine tool for outcome measurement or quality measurement in clinical settings (Desmet et al. 2023; Hyde, 2004). Currently, there is a tension between collecting patient-reported data for knowledge expansion through research and the desire to collect data for optimizing the clinical treatment of individual patients through feedback systems. The MH-NURSE-POS is a specifically developed and psychometrically tested outcome-scale for the nurse-patient relationship and not a valid and reliable scale to evaluate patients' clinical outcomes. The MH-NURSE-POS measures patient-reported outcomes of a nurse-patient relationship and is not accurate to measure changes in health status or condition of the patients in their recovery process. Therefore, the MH-NURSE-POS has the potential to support nurses in clinical practice to search for factors positively influencing the nurse-patient relationship, thus hoping to influence the patient outcomes. Longitudinal research during, throughout, and after admission can bring more clarity on this. When properly facilitated, the scores on the MH-NURSE-POS can be used during in-depth clinical supervision sessions to promote nurses' reflection on clinical practice. In e.g. a peer-led group reflection method, such as clinical intervision, the scores can stimulate the theoretical and interpersonal reflection of nurses on their role as psychotherapists or change agents. Collecting more research data on the various factors that contribute to or hinder the relational component of person-centeredness and power sharing in psychiatric and/or mental health nursing is central to understanding the effect(s) of the nurse-patient relationship from the patient's perspective.

Second, an important limitation of this study is the cross-sectional design, which precludes the identification of causal relationships among the different variables. Furthermore, recognizing hospitalization as a purely temporal phase in the personalized journey and the nonlinearity of recovery for people with mental health problems is fundamental to understanding NSPOs as individual values to avoid the unintended consequence of promoting a neoliberal narrative of responsibility (Deegan 1988, Stuart et al. 2017). We hypothesized that a multicenter research study would improve the reliability and validity of the effect(s) of the temporal nurse-patient relationship.

Third, diagnostic categories derived from DSM-5 or ICD are often considered to be associated with treatment outcomes (Hilsenroth & Tanzalli 2018, Vanheule et al. 2019, Veldmeijer et al. 2023, Osorio et al. 2019). Given the General Data Protection Regulation (GDPR) and ethical standards, we were not able to include patients' diagnoses from medical records. It was therefore very difficult to impossible to link the individual diagnosis available in medical records to the anonymized questionnaire of each patient.

Fourth, the recruitment of participants in this study could be biased. To strive for a representative sample of inpatients, we set up a multicentred study on 30 wards of five psychiatric hospitals. However, a limitation of sample control is the absence of the response rate per ward and in total. To reduce the risk of participation bias, the researcher's written instructions to ward managers were critical to minimizing selection bias. When collecting the data on the wards, the researchers informed patients and facilitated

their participation to the study. Most patients present at the wards wanted to participate in the study. No patients explicitly refused participation because the patients who did not want to participate did not come to the room where questionnaires could be filled in. Because of ethical reasons the researchers did not contact or encourage patients who did not participate. As there is no precise response rate available, it is difficult to estimate the participation bias.

Fifth, all data in this study were collected via self-report and questionnaires. To reduce the risk of common method bias, respondents were assured and given clear instructions that participation in the study was voluntary and anonymity of responses was guaranteed. Also, questionnaires were completed on the ward during hospitalization in the absence of the care team. In addition, the researchers emphasized that there were no right or wrong answers and that respondents should answer the questions as honestly as possible (Roberts et al. 2018).

Finally, when interpreting the results of the MH-NURSE-POS, the influence of the Belgian context (Flanders) must be illuminated to consider the external validity of the study results. Belgian community mental health care is still in its infancy, and the skill mix of the Belgian nursing workforce through the training of professional and bachelor's degree nurses and a small group of advanced practice nurses with master's degrees should be considered (Mistiaen et al. 2019). The impact of a different skill mix on NSPOs and role change is well documented (Aiken et al. 2017; Spilsbury et al. 2001).

CONCLUSION

In this study, we found that female participants, nurse availability when needed, more nurse contact and nurse stimulation were associated with higher scores on the total MH-NURSE-POS and the four domains. Patients aged 65 years or older and hospital were found to be associated with some of the total/domain scores of the MH-NURSE-POS. The number of hospitalizations during a lifetime and the current length of admission was not associated with differences in scores on the MH-NURSE-POS. The demonstration of distinct outcomes as well as facilitating and hindering features of a nurse-patient relationship by a specifically developed and psychometrically evaluated NSPOs scale may be useful not only to nurses but also to patients when considering the actions and interactions of the nurturing space within the nurse-patient relationship.

RELEVANCE FOR PRACTICE

Applying research-based NSPOs and associated factors of the nurse-patient relationship using the MH-NURSE-POS may provide some new insights and help nurses in clinical practice to increase their reflection on their actual and potential power as psychotherapists or change-agents. Reflection during e.g. in-depth clinical intervision sessions can enhance nurses' sensitivity for and responsiveness to their

role in the nurse-patient relationship and the treatment context, both fundamental to person-centered care (Desmet et al. 2023; Wheeler, 2013).

Expanding consciousness and awareness of helpful interactions and healing responses related to an effective nurse-patient relationship, such as nursing closeness and proximity, suggests that nurses' self-knowledge and self-awareness of facilitating the nurse-patient relationship may be considered essential to improving NSPOs. (Delaney, 2017; Peplau, 1991). Associated-specific findings support nurses' primary focus on forming a therapeutic alliance to facilitate interpersonal change (Barker, 2017; Hartley et al., 2020; Wheeler, 2013). Therefore, incorporating research-based predictors to the outcomes of the nurse-patient relationship may be essential to identifying and understanding differences in unmet nursing care needs, particularly in light of study findings on associations of patient characteristics (Recio-Saucedo et al., 2018). Understanding associations related to the outcomes of the nurse-patient relationship can help nurses and nursing management create optimal conditions for designing the "other 23 hours" to meet the therapeutic responsibility of "being in the here and now, side by side, co-constructing" as future-proof care that addresses the evolving needs of patients with mental health problems (Delaney et al., 2017; Santangelo et al., 2018; Stickley & Wright, 2013; Santos & Cutcliffe, 2018; Stievano et al., 2019).

The MH-NURSE-POS is a promising NSPOs-scale to collect more comparative patient-reported data that provide new insights into the outcome(s) of psychiatric and mental healthcare nursing by identifying key characteristics of safe, effective, and responsive nursing interactions and interventions in inpatient psychiatric hospitals. The ability to capture and validate associated factors through NSPOs-scales such as MH-NURSE-POS may provide new information on a broader conceptualization of nursing care in mental health care (Gabrielsson et al., 2020; Santangelo et al., 2018; Shaw et al., 2019).

Study findings on the effects(s)of psychiatric and/or mental health nursing may also contribute to the quest to (re)discover a clearly defined and specific nursing identity as part of a natural, evolving systemic transformation of a nursing professional identity (Ayala, 2020; Lakeman & Molloy, 2018: Scheid & Wright, 2017). Creating nursing visibility by measuring NSPOs and their associations can facilitate clearer communication about nursing professional identity to the public (Godsey et al., 2020; ten Hoeve et al., 2014). Increased visibility within and outside of mental health care may positively impact nurses' self-image, the socialization process of prospective nurses, overcoming the associated stigma of nurses in mental health care, the reciprocal relationship between self-efficacy and academic achievement, and enhancing nurses' accountability in micro-, meso-, and macro-level policy making in a changing mental health care environment (Coster et al., 2018; Hartley et al., 2020; Moorhead et al., 2018; Verhaeghe & Bracke, 2012).

Given the complexity of patient-reported outcomes in psychotherapy and mental health care, various strategies for understanding and measuring associated factors of the impact(s) of psychiatric and mental health care reflect their complexity and speak to the core of what it means to be a nurse (Barker, 2017;

Santos & Cutcliffe, 2018; Peplau, 1991). Based on the metrics-driven study findings of associated factors from the nurse-patient relationship, a comprehensive literature review of the 'common factors' of a therapeutic relationship and the key characteristics of the nurse-patient relationship can help illuminate the nurturing space between a nurse and patient (Delaney, 2017, Gabrielsson et al., 2020). Co-designing with patients or peer workers in an effort to improve the NSPOs of the nurse-patient relationship may present an opportunity for future nursing outcomes research (Elg et al. 2012). Therefore, future mixed-methods studies using a sequential explanatory design, measuring associated factors of NSPOs, and incorporating qualitative analyzes of in-depth interviews with inpatients exploring various contributing nursing factors may be a must to understand the black box of underlying processes of interpersonal change through the nurse-patient relationship (McAlister et al. 2019; Wheeler 2013).

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TABLES

TABLE 1: Patient characteristics (n=340)

number of individuals (n) and valid percentages (%)

Age (years)		
Mean	44.7	
SD	15.4	
Minimum	18.0	
Maximum	96.0	
	n	*(%)*
Gender		
Female	179	*(52.7)*
Male	161	*(47.3)*
Number of hospitalization during a lifetime		
1	122	*(35.9)*
2	65	*(19.1)*
3	54	*(15.9)*
4	31	*(9.1)*
5	18	*(5.3)*
≥ 6	48	*(14.1)*
Missing	2	*(0.6)*
Current length of admission (months)		
< 1	55	(16.2)
1 - < 2	48	(14.1)
2 - < 3	55	(16.2)
3 - < 4	45	(13.2)
≥ 4	134	(39.4)
Missing	3	(0.9)

Table 2 results of the Mental Health Nurse-Sensitive Patient Outcome-Scale Total participants (n=340) are presented as number of individuals (n) and valid percentages (%)

Items **DUE TO THE NURSE**	(1) Fully Disagree n (%)	(2) Disagree n (%)	(3) Partially Disagree n (%)	(4) Partially agree n (%)	(5) Agree n (%)	(6) Fully agree n (%)	Missing n (%)	Not applicable n (%)	Mean (SD)
Growth									**4.48 (0.99)**
I get hope again to continue	9 (2.6)	24 (7.1)	17 (5.0)	81 (23.8)	129 (37.9)	80 (23.5)	-		4.58 (1.25)
I can set personal goals	8 (2.4)	20 (5.9)	21 (6.2)	75 (22.1)	148 (43.5)	68 (20.0)	-		4.59 (1.19)
I can pursue my personal goals step by step	10 (2.9)	18 (5.3)	19 (5.6)	74 (21.8)	145 (42.6)	74 (21.8)	-		4.61 (1.21)
I can achieve my personal goals	10 (2.9)	25 (7.4)	33 (9.7)	87 (25.6)	119 (35.0)	65 (19.1)	1 (0.3)		4.40 (1.27)
I have insight in my strengths and possibilities	7 (2.1)	19 (5.6)	32 (9.4)	101 (29.7)	136 (40.0)	45 (13.2)	-		4.40 (1.13)
I have insight into my limitations and pitfalls	9 (2.6)	21 (6.2)	21 (6.2)	103 (30.3)	133 (39.1)	52 (15.3)	1 (0.3)		4.43 (1.17)
I can further develop my strengths and possibilities	6 (1.8)	19 (5.6)	26 (7.6)	104 (30.6)	133 (39.1)	51 (15.0)	1 (0.3)		4.45 (1.12)
I can cope with my limitations and pitfalls	10 (2.9)	21 (6.2)	29 (8.5)	102 (30.0)	131 (38.5)	46 (13.5)	1 (0.3)		4.36 (1.18)
Expression									**4.61 (1.04)**
I can cope with my emotions	13 (3.8)	28 (8.2)	27 (7.9)	100 (29.4)	106 (31.2)	63 (18.5)	3 (0.9)		4.33 (1.31)
I can speak openly about my daily problems	6 (1.8)	16 (4.7)	19 (5.6)	53 (15.6)	155 (45.6)	91 (26.8)	-		4.79 (1.15)
I can speak openly about my emotional problems	10 (2.9)	13 (3.8)	22 (6.5)	66 (19.4)	140 (41.2)	88 (25.9)	1 (0.3)		4.70 (1.20)
I can speak openly about my relational problems (with my partner of others)	11 (3.2)	17 (5.0)	24 (7.1)	65 (19.1)	133 (39.1)	83 (24.4)	7 (2.1)		4.62 (1.26)
Control									**4.15 (1.20)**
I behave in a way that does not put my own safety at risk	17 (5.0)	22 (6.5)	29 (8.5)	62 (18.2)	96 (28.2)	71 (20.9)	3 (0.9)	40 (11.8)	4.38 (1.43)
I behave in a way that does not put the safety of others at risk	18 (5.3)	18 (5.3)	15 (4.4)	43 (12.6)	104 (30.6)	73 (21.5)	3 (0.9)	66 (19.4)	4.54 (1.45)
I know which situations are riskful to react impulsively	12 (3.5)	31 (9.1)	24 (7.1)	60 (17.6)	107 (31.5)	55 (16.2)	2 (0.6)	49 (14.4)	4.33 (1.38)
I can keep control over my impulsive reactions	14 (4.1)	43 (12.6)	25 (7.4)	71 (20.9)	96 (28.2)	36 (10.6)	3 (0.9)	52 (15.3)	4.05 (1.41)
I build valuable contacts with others	32 (9.4)	48 (13.8)	52 (15.3)	76 (22.4)	103 (30.3)	30 (8.8)	-		3.77 (1.47)
Motivation									**4.65 (1.10)**
I am motivated to take my medication	22 (6.5)	27 (7.9)	11 (3.2)	40 (11.8)	114 (33.5)	115 (33.8)	11 (3.2)		4.65 (1.52)
I am motivated to follow my therapy program	14 (4.1)	15 (4.4)	11 (3.2)	49 (14.4)	139 (40.9)	110 (32.4)	2 (0.6)		4.82 (1.28)
I remain committed to my treatment	11 (3.2)	13 (3.8)	9 (2.6)	38 (11.2)	129 (37.9)	137 (40.3)	3 (0.9)		4.99 (1.23)
I succeed to carry out the daily activities	23 (6.8)	34 (10.0)	34 (10.0)	81 (23.8)	118 (34.7)	49 (14.4)	1 (0.3)		4.13 (1.42)
TOTAL SCORE									**4.45 (0.89)**

Table 3 Descriptive and univariable associations between patient characteristics / relational-contextual factors and scores of the MH-NURSE-POS

Total participants (n=340) are presented as number of individuals (n) and valid percentages (%), (* = p<0.05, **=p<0.01 and *** = p<0.001)

Sociodemographic variables	n (%)	**Total score** mean (SD)	**'Growth'** mean (SD)	**'Expression'** mean (SD)	**'Control'** mean (SD)	**'Motivation'** mean (SD)
Gender						
Female	179 (52.65)	4.60** (0.83)	4.63* (0.91)	4.74* (1.02)	4.31* (1.17)	4.83** (1.01)
male	161 (47.35)	4.28 (0.93)	4.30 (1.05)	4.45 (1.06)	3.98 (2.23)	4.46 (1.17)
Age						
≤25y	37 (10.88)	4.28** (0.78)	4.23** (0.91)	4.62 (0.93)	3.89*** (1.09)	4.55* (0.94)
25y-65y	275 (80.88)	4.43** (0.89)	4.47* (0.97)	4.58 (1.03)	4.11*** (1.21)	4.62* (1.13)
≥65y (ref. cat.)	28 (8.24)	4.89 (0.98)	4.81 (1.21)	4.85 (1.35)	4.93 (0.97)	5.08 (0.85)
Number of hospitalization during life						
1	122 (36.09)	4.39 (0.90)	4.33 (1.00)	4.62 (1.00)	4.10 (1.25)	4.62 (1.06)
≥2	216 (63.91)	4.49 (0.90)	4.55* (0.96)	4.59 (1.06)	4.20 (1.17)	4.70 (1.12)
Current length of admission						
≤1month,	103 (30.56)	4.51 (0.75)	4.52 (0.87)	4.75 (0.86)	4.10 (1.17)	4.70 (1.00)
>1month and < 4month,	100 (29.67)	4.45 (0.83)	4.52 (0.87)	4.65 (0.87)	4.11 (1.18)	4.60 (1.10)
≥4month	134 (39.76)	4.41 (1.04)	4.40 (1.16)	4.44 (1.25)	4.25 (1.25)	4.66 (1.16)
Hospital						
1	102 (30.00)	4.32* (0.80)	4.43* (0.83)	4.55 (0.96)	3.82*** (1.22)	4.44* (1.06)
2	70 (23.33)	4.28* (1.03)	4.31* (1.27)	4.27 (0.77)	4.18** (1.11)	4.49* (1.11)
3	42 (12.35)	4.40* (0.76)	4.40* (0.87)	4.88 (0.72)	3.95*** (1.11)	4.54* (1.19)
4 (ref. cat.)	65 (19.12)	4.94 (0.60)	4.87 (0.70)	4 .92 (0.77)	4.83 (0.88)	5.26 (0.59)
5	61 (17.65)	4.39* (1.07)	4.39* (1.14)	4.56 (1.13)	4.10* (1.35)	4.61* (1.29)
Availability when needed						
Always/mostly yes (ref. cat.)	245 (72.06)	4.45 (0.89)	4.48 (0.99)	4.61 (1.04)	4.15 (1.20)	4.65 (1.10)
Sometimes yes/no	82 (24.12)	3.87*** (0.86)	3.91*** (1.01)	3.98*** (1.03)	3.54*** (1.10)	4.10* (1.21)
Mostly not /never	13 (3.82)	3.51*** (1.00)	3.61*** (1.12)	3.41*** (1.48)	2.88*** (1.02)	4.03*** (1.41)
Contact						
Too/not too little (ref. cat.)	92 (27.06)	3.79 (0.90)	3.78 (1.10)	3.84 (1.18)	3.58 (1.19)	4.08 (1.23)

Just enough	186 (54.71)	4.68*** (0.77)	4.71*** (0.80)	4.89*** (0.80)	4.30*** (1.19)	4.82*** (1.01)
Not too/ too much	62 (18.23)	4.76*** (0.72)	4.79*** (0.83)	4.90*** (0.92)	4.58*** (0.94)	4.99** (0.80)
Stimulation						
Always/mostly yes,	220 (64.70)	4.70*** (0.77)	4.74*** (0.84)	4.86*** (0.87)	4.42*** (1.13)	4.87*** (0.98)
Sometimes yes/no	96 (28.24)	4.18*** (0.86)	4.19*** (0.96)	4.28*** (1.11)	3.84*** (1.09)	4.47*** (1.04)
Mostly not /never (ref. cat.)	24 (7.06)	3.26 (0.85)	3.16 (1.08)	3.64 (1.32)	2.97 (1.35)	3.38 (1.34)

Table 4: Multivariable analysis for the associations between scores of the MH-NURSE-POS and patient characteristics / relational-contextual factors

			95% confidence interval for B	
	Estimate	P-value	Lower bound	Upper bound
Total score				
(Constant)	3.853	<0.001	2.956	4.750
Female	0.270	<0.001	0.113	0.426
≥65y	0.288	0.044	0.008	0.568
Hospital 4	0.315	0.015	0.061	0.569
Availability when needed: always/mostly yes	0.505	<0.001	0.313	0.698
Contact: too little/not too little	-0.547	<0.001	-0.737	-0.357
Stimulation: always/mostly	0.345	<0.001	0.170	0.519
'Growth'				
(Constant)	3.859	<0.001	1.629	6.088
Female	0.276	0.003	0.097	0.456
Hospital 4	0.284	0.015	0.056	0.512
Availability when needed: always/mostly yes	0.441	<0.001	0.220	0.663
Contact: too little/not too little	-0.631	<0.001	-0.851	-0.411
Stimulation: always/mostly	0.414	<0.001	0.212	0.616
'Expression'				
(Constant)	4.390	<0.001	2.265	6.515
Female	0.329	0.003	0.545	0.113
Availability when needed: always/mostly yes	0.485	<0.001	0.218	0.752
Contact: too little/not too little	-0.470	<0.001	-0.734	-0.205
Stimulation: always/mostly	0.318	0.011	0.712	0.752
'Control'				
(Constant)	3.240	<0.001	1.307	5.173
Female	0.281	0.015	0.055	0.508
≥65y	0.639	0.002	0.231	1.048
Hospital 4	0.634	<0.001	0.346	0.922
Availability when needed: always/mostly yes	0.634	<0.001	0.353	0.915
Contact: too little/not too little	-0.329	0.020	-0.606	-0.052
Stimulation: always/mostly	0.365	0.005	0.111	0.915
'Motivation'				
(Constant)	3.978	<0.001	3.012	0.944
Female	0.347	0.002	0.132	0.554
Hospital 4	0.590	<0.001	0.322	0.857
Availability when needed: always/mostly yes	0.454	<0.001	0.194	0.714
Contact: too little/not too little	-0.426	0.001	-0.648	-0.168
Stimulation: always/mostly	0.271	0.025	0.034	0.508