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The importance of interdisciplinarity in accommodating patient needs among norwegian nurses

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Accessible summary

What is known on the subject:

- Previous studies of interdisciplinarity and nursing responsibilities have mainly focused on outcomes such as patient safety, job satisfaction and organizational factors.
- Mental health nurses often describe role confusion in relation to other health professionals.
- Opportunities for interdisciplinary communication with other professionals may benefit health care.

What the paper adds to existing knowledge:

- The current large-scale study is the first to investigate whether mental health and SUD nurses' perceptions of their opportunities to accommodate patients' needs are related to interdisciplinarity in the treatment unit and a nursing role with clearly defined responsibilities.
- Strong interdisciplinarity was associated with greater perceived opportunities to accommodate patients' psychosocial, somatic, and economic and legal needs, while strictly defined nursing roles/responsibilities were related to weaker opportunities to do so.

What are the implications of practice:

- The findings highlight the need to address how mental health and SUD nurses organize practice to meet patients' diverse needs
- Interdisciplinary teamwork could strengthen nurses' ability to address patient needs
- Finding the best possible balance of providing service in teams or individually could improve resource utilization at the same time as strengthening patient care, and making sure that the patients' various needs are met.

Abstract

Introduction: Nurses' roles in specialist mental health and substance use disorder (SUD) treatment services are multidimensional and complex. Their responsibility, autonomy and interdisciplinary collaboration may be of importance for their perceived opportunities to accommodate patients' health needs. Previous studies of

interdisciplinarity and nursing responsibilities have mainly focused on outcomes such as patient safety, job satisfaction and organizational factors, and included relatively small samples. The studies have also mainly been conducted in other sectors than the mental health and SUD nursing sectors.

Aim/Question: The aim of this study is to examine the associations between nurses' roles, interdisciplinarity and their perceived opportunities to accommodate patients' psychosocial, somatic and economic/legal needs.

Method: A cross-sectional web-based questionnaire survey was conducted in a nationwide sample of Norwegian nurses in the mental health, SUD treatment and combined mental health and SUD treatment sectors. Of 5,501 contactable nurses (74% of the population), 1918 (35%) responded.

Results: The results revealed that interdisciplinarity was significantly associated with greater perceived opportunity to accommodate patient needs, whereas strictly defined nursing roles/responsibilities were associated with less opportunity to accommodate these needs.

Discussion/Implication for practice: Facilitation of interdisciplinary collaboration may improve quality of care for patients in mental health and SUD treatment services.

KEYWORDS

communication, competence, interdisciplinary collaboration, Nursing role, responsibility

1 | INTRODUCTION

Nurses represent the largest professional group in both specialized mental health and specialized substance use disorder (SUD) treatment services (Abram, 2018). Services in the two sectors have much in common and share many patients with dual diagnoses who move across the two sectors (Brousselle et al., 2010; McGovern et al., 2014). Patients with mental health conditions and SUD mobilize numerous specialized resources and face challenges and comorbidity across a wide range of domains, such as somatic health disorders as well as social, economic and legal problems (Delaney et al., 2013; Donald et al., 2005; Frasch et al., 2013; Kedote et al., 2008). This requires the nurses in these sectors to address several problem domains and needs simultaneously (Fung et al., 2014). The role is often multidimensional, with nurses expected to be caretaker, role model and coordinator of health services (Goulter et al., 2015). The nurse–patient relationship is frequently highlighted as the most central element of "good nursing practice" (Goulter et al., 2015), but nursing also should include "organising work" (Allen, 2014). This usually entails collaboration and co-ordination with providers and family carers, as well as "care space governance" (Mendes, 2015), with the latter including maintenance of quality, safety and cost-effectiveness.

A potential barrier to the accommodation of patient needs (i.e. opportunity to meet patients' needs in different domains, such as somatic and mental health) is that the nurses may not have sufficient competence in specific domains. An integrative review found that mental health nurses in the United Kingdom were not routinely supported by somatic healthcare education (Blythe & White, 2012). The review revealed that many nurses also described role ambiguity related to their role as somatic health carers. A study of psychiatric nurses in an inpatient ward concluded that nurses struggled to achieve professional independence from other professional groups (Goulter et al., 2015). Although the nurses in this study had responsibilities across several different health domains, they lacked professional confidence as well as the authority to make decisions regarding overall care plans. The authors argued that the key focus of inpatient mental health nursing remains largely unestablished. A possible consequence is structures failing to align with the direct care that the nurses are expected to provide.

Research has suggested that professional autonomy, self-leadership as well as opportunities to participate in knowledge sharing facilitate novel and innovative practices among nurses (Kim & Park, 2015). Although professional autonomy may be an important precursor of nurses' abilities to accommodate patient needs, nurses in both the mental health and SUD sectors are usually part of a broad health team consisting of personnel such as medical doctors, physiologists, psychologists and social workers. The collaboration and interaction between nurses and these groups may be critical for providing adequate care (Manojlovich and DeCicco, 2007).

Interdisciplinary work and collaboration, such as experience and competence sharing across professional groups at a treatment unit, are closely linked to the organizational domain of the ward climate in a health treatment unit (Gausvik et al., 2015; Moos, 2018). This domain focuses on factors such as the opportunity of different professional groups to alter the course of treatment or amend regulations and rules underlying treatment procedures and the level of control

exerted by professional groups over their working environment (Harvey & Jason, 2011). Interdisciplinarity has become an increasingly important aspect of healthcare systems, and it has been shown to improve system- and patient-level outcomes (Al Sayah et al., 2014; Gausvik et al., 2015; Van Bogaert et al., 2014). Meanwhile, interdisciplinary work can also generate substantial challenges because workers from different disciplines may disagree substantially over the purpose or type of treatment and patient needs (Bowers, 2009).

Previous studies have often focused on the multitude and complexity of nurses' roles in mental health and SUD services. However, few have investigated whether nurses' different roles are related to the accommodation of patients' needs. This study draws on a nationwide sample of Norwegian nurses in the mental health, SUD treatment, and combined mental health and SUD sectors. The study aims to investigate the extent to which a strongly defined nursing role with clear responsibilities and strong interdisciplinarity at the treatment unit is associated with nurses' perceived opportunities to accommodate patients' needs, adjusted for nurses' demographics and formal competence factors.

2 | METHOD AND MATERIALS

2.1 | Procedure

A self-administered web-based questionnaire survey was conducted with a sample of 5,800 nurses working in the mental health, SUD, or combined mental health and SUD sectors. The nurses were recruited from the member registry of the Norwegian Nurses' Organisation (NNO). The registry covers about 78% of nurses employed in the specialist mental health services (n = 6,300) and SUD (n = 1,100) sectors. Inclusion criteria were that the NNO members were registered as employed in one of the three sectors of interest, had the position of 'psychiatric nurse' or were registered as working in the psychiatry/substance abuse area and working in specialized services for mental health or SUD. The study was independently reviewed and approved by the Norwegian Centre for Research Data, reference number 49,074. The research was carried out in accordance with the ethical principles outlined in the World Medical Association Declaration of Helsinki.

The data were collected in the period from August through November 2016. All invited respondents received an invitation with a link to access the questionnaire via email and Short Message Service. Of the 5,800 nurses invited, 230 could not be reached or reported that they were not in the target group of the study. A further 69 nurses reported that they worked in other health sectors and were excluded from further analyses. A total of 1918 nurses responded to the enquiry (a response rate of 35% from the 5,501 contactable nurses). Web surveys generally obtain lower response rates than postal or face-to-face interview surveys. In a meta-study, the mean response rate across a wide range of web surveys was 34% (SD = 22%) (Shih & Fan, 2008). Because the current study focused on perceived accommodation of patient needs, nurses who reported 0%–19% of their work time being spent on patient contact (n = 267) were excluded. This left a total of 1,651 nurses, who constituted the analytical sample.

2.2 | Measurement instruments

The aim of this study was to examine the associations between nurses' roles, interdisciplinarity and their perceived opportunities to accommodate a variety of patient needs. To address this aim, a questionnaire was developed based on analyses of three semi-structured focus group interviews conducted among nurses (n = 10–15 in each group) working in the mental health, SUD, or combined mental health and SUD sectors. The interviews focused on identifying important themes in nursing roles as well as their responsibilities and clinical practice. In addition, based on the results of the focus group interviews, an expert group of experienced researchers and nurses contributed in devising the questionnaire.

2.3 | Demographic and formal competence factors

Demographic characteristics included the gender and age of the nurses. Formal competence variables included years of work experience in the mental health or SUD sectors and current health sector of employment (mental health sector, SUD sector, combined mental health and SUD sector). Work experience of 6 or more years has been suggested to distinguish inexperienced and experienced nurses (e.g., Saksvik-Lehouillier et al., 2013) and was used in the current study. The nurses also reported whether they held the position of specialist nurse. Furthermore, they reported whether they were continuing training as a psychiatric nurse or in multidisciplinary training in mental health work (which replaced the previous psychiatric nurse training from 1998), continuing training in psychotherapies for psychosis, combined substance misuse and mental health work, substance misuse problems, network education meetings and relational competence or other forms of continuing education. Moreover, the nurses reported the type of unit in which they were currently employed (outpatient unit, inpatient unit, and ambulatory team).

2.4 | Nurses' responsibilities and interdisciplinarity

Nurses' responsibilities and interdisciplinarity at the treatment unit were measured by seven items (Table 1). The nurses reported the extent to which such statements were true for their current workplace on a four-point scale, from (1) *not at all* to (4) *to a large extent*.

2.5 | Nurses' perceived opportunities to accommodate patients' needs

Nurses' perceptions of their opportunities to accommodate patients' various needs were recorded using a 13-item measure (Table 2).

TABLE 1 Descriptives of responsibility and interdisciplinarity items *'To what extent do you agree with the following statements about nurses' responsibilities at your workplace?'*

Item	1. Not at all % (*n*)	2. To a low extent % (*n*)	3. To some extent % (*n*)	4. To a large extent % (*n*)
At my workplace we exchange experiences and competence across professional groups to develop better services	0.30% (4)	6% (84)	30% (413)	64% (897)
The interdisciplinary collaboration across professions functions well at my workplace	0.60% (9)	4% (59)	37% (511)	59% (817)
I have options in regard to what I want to focus on in my patient-related work	0.50% (7)	8% (107)	44% (618)	48% (666)
The responsibility of the nurses is clearly defined at my workplace	2% (28)	11% (155)	34% (481)	53% (734)
The responsibility of the nurses in relation to other disciplinary groups is clearly defined at my workplace	2% (27)	11% (154)	44% (608)	44% (610)
Nurses at my workplace are heard and respected	0.10% (2)	4% (55)	35% (488)	61% (856)
I am given work tasks that do not belong to my responsibility domain[a]	11% (151)	45% (633)	37% (509)	7% (103)

[a]Reverse coded.

TABLE 2 Descriptives of perceived opportunities to accommodate patients' needs *'During your contact with patients, to what extent do you think you have the opportunity to meet patient needs in the following general domains?'*

Item	1. Not at all % (*n*)	2. To a low extent % (*n*)	3. To some extent % (*n*)	4. To a large extent % (*n*)
Physical activity	2% (23)	18% (245)	54% (718)	26% (342)
Somatic health	2% (20)	19% (260)	55% (735)	25% (330)
Sleep, rest and welfare	0.3% (4)	4% (59)	47% (637)	48% (657)
Diet and nutrition	1% (13)	18% (243)	59% (800)	22% (300)
Mental health	0% (0)	2% (20)	29% (397)	70% (953)
Sexuality and intimate relationships	14% (164)	50% (598)	33% (400)	4% (47)
Communication and social interaction	0.2% (3)	1% (19)	29% (401)	69% (943)
Substance use	1% (18)	18% (239)	59% (789)	22% (295)
Social needs	1% (18)	23% (314)	60% (812)	15% (208)
Legal rights	3% (42)	21% (275)	53% (709)	23% (309)
Economic supervision	8% (100)	40% (507)	44% (558)	7% (92)
Existential/spiritual needs	4% (48)	35% (460)	52% (673)	10% (124)
Work and activity	3% (44)	28% (371)	53% (693)	15% (199)

Nurses reported the extent to which they believed they had the opportunity to accommodate the needs of patients in different health domains. The instrument was scored on a four-point scale, from (1) *not at all* to (4) *to a large extent*. The scale also included a *not applicable* response anchor. Responses to this anchor item were set to system missing values.

2.6 | Statistical procedures

Descriptive statistics were used to describe the sample. Principal component analyses (PCA) with iteration (i.e., items which failed to meet the criteria were excluded one by one until the criteria were met) were used to investigate the dimensionality in the measurement instruments. The criteria were that items which failed to load above 0.30 on its main dimension and cross-loading items with values above 0.40 were excluded (Hair et al., 2009).

Clinical interpretability of the dimensions was also a critical criterion for dimension extraction. Kaiser criterion and varimax rotation were performed to investigate the underlying dimensionality in the measurement instruments. Cronbach's alpha and average corrected inter-item-total correlations were calculated as reliability indices. Nunnally (1978) postulated that the alpha coefficient should be above 0.70 to reflect a coherent scale. However, more recently,

it has been argued that coefficients ranging from 0.60 to 0.70 are tolerable (Hair et al., 2006). The Cronbach's alpha is also biased in regards of the number of items within an index or scale, and the coefficients usually increase by a high number of items and decrease with few items. It is thereby important to consider the average corrected inter-item total correlations. A cut-off of 0.30 or above has been suggested for these correlations (Hair et al., 2006).

To investigate factors associated with nurses' perceived opportunities to accommodate patients' needs, three hierarchical linear block regression analyses were carried out. Nurses' demographics and formal competence factors were entered into the first block. Dimensions of nurses' responsibility and interdisciplinarity were added in the second block to examine whether these factors explained additional variance in perceived opportunities to accommodate patients' needs beyond demographics and formal competence factors. In order to estimate the unique contribution of each block to the explained variance, we estimated the F-change, R^2 change and adjusted R^2 for the individual blocks. The R^2 change refers to the actual improvement in explained variance by the variables in the block. The significance of this contribution is tested by an *F*-test (reflected by the F-change value) examining whether the variables added in a block contribute to a statistically significant improvement in the model. The adjusted R-square is an estimate of explained variance adjusted for the number of predictors in the model. Variance inflation factor (VIF) values were used to examine the assumption of non-collinearity among independent variables in regression analysis. Collinearity is likely present when the VIF values exceed 4.00 by a tolerance less than 0.20 (Hair et al., 2009). A conventional significance level of .05 was used in all analyses.

3 | RESULTS

3.1 | Sample characteristics

The average age of the nurses was 45.28 years (*SD* = 11.55, range = 21–69 years), and most were women (78%). As shown in Table 3, the majority worked in the mental health sector (77%) and 71% in inpatient units. A total of 75% of the sample had more than six years of work experience, while 72% were specialist nurses. The most common form of continuing education was in general mental health work (53%) and training as a psychiatric nurse (30%).

Descriptive statistics on interdisciplinarity and perceived opportunity to accommodate patients' needs.

Single-item distributions for nurses' responsibility and interdisciplinarity are shown in Table 1. As shown, the majority of nurses reported rather strong interdisciplinary collaboration, experience and competence exchange at their workplace. Most nurses also reported relatively clear-cut general work responsibilities/nursing roles and responsibilities in relation to other disciplinary groups.

Table 2 shows single-item distributions of perceived opportunities to accommodate patients' needs. The domains in which the nurses reported the greatest opportunities were sleep, rest and welfare (48% to a large extent), mental health (70%), and communication and social interaction (69%). Somewhat fewer reported opportunities in domains such as existential and spiritual needs (10%), work and activity (15%), social needs (15%), legal rights (23%), physical activity (26%), diet and

TABLE 3 Sample characteristics

Indicator	
Demographic and formal competence variables	% (*n*)/ *M* (*SD*)
Male gender	22% (358)
Age	45.28 (11.55)
Specialist mental health sector (yes)	77% (1,318)
Specialist SUD sector (yes)	11% (189)
Combined SUD and mental health (yes)	8% (144)
Work experience (more than six years)	75% (1,196)
Specialist nurse (yes)	72% (1,167)
Continuing education as a psychiatric nurse (yes)	30% (381)
Continuing education in psychotherapies for psychosis (yes)	12% (154)
Continuing education in general mental health work (yes)	53% (682)
Continuing education in combined substance misuse and mental health work (yes)	5% (62)
Continuing training in substance misuse problems (yes)	5% (65)
Continuing training in network meetings and relational competence (yes)	2% (26)
Works in inpatient unit (yes)	71% (1,124)
Works in an outpatient unit (yes)	20% (316)
Works in an ambulant team (yes)	7% (108)
Interdisciplinarity and responsibility (range 1–4)	*M* (*SD*)
Interdisciplinary interaction	3.50 (0.50)
Nursing responsibilities	1.67 (0.69)
Perceived opportunities to accommodate patients' needs (range 1–4)	
Psychosocial care needs	3.14 (0.41)
Somatic healthcare needs	3.13 (0.51)
Economic and legal supervision needs	2.75 (0.65)

nutrition (22%), somatic health (25%) and substance use (22%). The least frequently reported opportunities to accommodate patients' needs were related to economic supervision (7% to a large extent), and sexuality and intimate relationships (4%).

3.2 | Dimensional structure and reliability of the instruments

Table A1 shows the results of a PCA for the 13-item instrument of perceived opportunity to accommodate patients' needs. As displayed, the instrument is segmented into three dimensions that explain about 54% of the total variance. Two items ("existential/spiritual needs" and "work and activity") were excluded from the analysis because they failed to load consistently. The first dimension included four items and was termed "somatic health care needs" ($\alpha = 0.735$). The items in this dimension mainly covered patient care regarding physiological domains, such as nutrition and physical activity. The second dimension covered five items and was termed "psychosocial care needs" ($\alpha = 0.661$). This dimension included items related to substance use, mental health and social interaction. The final dimension included two items and was termed "economic and legal supervision" ($\alpha = 0.624$). These items covered supervision in terms of patients' legal rights and economic issues. Higher scores on the instrument reflect greater opportunity to accommodate patient needs in the respective domains.

Table A2 shows a PCA for the seven-item instrument of interdisciplinarity. The measure is divided into two dimensions that explain about 73% of the total variance. The first dimension, "Interdisciplinary interaction" ($\alpha = 0.726$), included three items related to interdisciplinary competence exchange and collaboration. The second dimension, "Nursing responsibilities" ($\alpha = 0.812$) covers two items regarding how strictly the nursing roles in the units were defined. Two items ("Nurses at my workplace are heard and respected" and "I am given work tasks that do not belong to my responsibility domain") were excluded because they failed to load.

As shown in Table 3, consistent with the single-item analyses, the most seldom reported opportunities to accommodate patient needs were related to economic and legal supervision, whereas the opportunities to accommodate somatic and psychosocial care were more common. The nurses reported rather high interdisciplinarity, so their overall nursing responsibilities were reported to be less strictly defined.

3.3 | Opportunity to accommodate patients' needs

Examinations of VIF values and tolerance levels showed that the highest VIF value was 2.38 and the lowest tolerance value was 0.42. This suggests that multicollinearity was not likely to be an issue in the regression models.

The next step was to investigate whether nurses' interdisciplinarity and responsibility in their work were associated with the three dimensions of perceived opportunity to accommodate patients' needs, while adjusting for nurses' demographic characteristics and formal competence factors. Overall, the demographics and formal competence factors had a modest contribution to the explained variance in the three dimensions, as reflected in the low F-change values reported in Table 4. As shown in the table, while all remaining factors in the model were accounted for, male gender was associated with less perceived opportunity to accommodate psychosocial and somatic healthcare needs. Higher age was associated with fewer opportunities regarding economic and legal supervision. Working in the SUD sector or combined SUD and mental health sector was associated with greater opportunities to accommodate needs regarding psychosocial care. Those in the combined sector also reported more opportunities in economic and legal supervision. Working in outpatient settings and ambulatory teams was related to fewer opportunities to accommodate somatic health care and higher opportunities to accommodate psychosocial needs compared with the reference category of inpatient treatment settings. More than six years of work experience appeared to increase perceived opportunities for psychosocial care. Specialist nurses reported somewhat greater opportunities to accommodate economic and legal supervision needs. Continuing education in combined substance misuse and mental health work slightly increased opportunities to accommodate somatic health care and economic/legal needs. There was also a slight association between continuing education as psychiatric nurse and accommodation of economic and legal needs.

However, when demographic and formal competence variables were adjusted for, the most substantial contribution to the explained variance was the nurses' responsibility and interdisciplinarity block. Within this block, interdisciplinary interaction was strongly associated with higher scores in all three dimensions of perceived opportunity to accommodate patients' needs. Strictly defined responsibility for the nurses was systematically associated with fewer perceived opportunities across the three domains.

4 | DISCUSSION

Previous studies of interdisciplinarity and nursing responsibilities have mainly focused on outcomes such as patient safety, job satisfaction and organizational factors (Al Sayah et al., 2014; Gausvik et al., 2015; Goulter et al., 2015; Kim & Park, 2015) and included relatively small samples. The current large-scale study is to our knowledge the first to investigate whether mental health and SUD nurses' perceptions of their opportunities to accommodate patients' needs are related to interdisciplinarity in the treatment unit and a nursing role with clearly defined responsibilities. The results showed that strong interdisciplinarity was associated with greater perceived opportunities to accommodate patients' psychosocial, somatic and economic and legal needs, while strictly defined nursing roles/responsibilities were related to weaker opportunities to accommodate patient needs.

In line with existing literature (McHugh & Lake, 2010), the findings of the present study indicated that both individual competence

TABLE 4 Factors associated with perceived opportunities to accommodate patients' needs

	Psychosocial care needs	Somatic health care needs	Economic and legal supervision needs
Block	**Adjusted B (95% CI)**	**Adjusted B (95% CI)**	**Adjusted B (95% CI)**
Block 1: Demographics and formal competence factors			
Gender (male)	−0.08*** (−0.13; −0.03)	−0.13**** (−0.20; −0.06)	−0.09 (−0.18; 0.00)
Age	0.00 (0.00; 0.01)	0.00 (0.00; 0.01)	−0.01**** (−0.01; 0.00)
SUD sector (yes)	0.14**** (0.07; 0.21)	0.02 (−0.07; 0.12)	−0.08 (−0.21; 0.04)
Combined mental health and SUD (yes)	0.13**** (0.05; 0.21)	0.03 (−0.07; 0.14)	0.19** (0.05; 0.33)
Work experience (more than six years)	0.10*** (0.03; 0.17)	0.04 (−0.05; 0.13)	0.11 (−0.01; 0.23)
Specialist nurse (yes)	0.05 (−0.03; 0.12)	0.05 (−0.05; 0.15)	0.14* (0.01; 0.28)
Continuing training as a psychiatric nurse (yes)	0.03 (−0.04; 0.11)	−0.03 (−0.12; 0.07)	0.13* (0.00; 0.25)
Continuing training in psychotherapies for psychosis (yes)	0.04 (−0.03; 0.11)	0.04 (−0.05; 0.13)	0.02 (−0.10; 0.14)
Continuing training in general mental health work (yes)	−0.01 (−0.07; 0.06)	0.03 (−0.05; 0.11)	0.09 (−0.03; 0.20)
Continuing training in combined substance misuse and mental health work (yes)	0.09 (−0.01; 0.19)	0.17** (0.04; 0.30)	0.18* (0.01; 0.36)
Continuing training in substance misuse problems (yes)	−0.02 (−0.12; 0.08)	−0.01 (−0.14; 0.12)	−0.11 (−0.29; 0.07)
Continuing training in network meetings and relational competence (yes)	0.02 (−0.14; 0.17)	−0.05 (−0.25; 0.14)	0.01 (−0.25; 0.27)
Works in an outpatient unit (yes)	0.13**** (0.07; 0.19)	−0.37**** (−0.45; −0.30)	−0.07 (−0.17; 0.03)
Works in an ambulant team (yes)	0.08* (0.00; 0.16)	−0.32**** (−0.43; −0.22)	0.00 (−0.14; 0.14)
	F-change = 7.79****	*F-change* = 9.73****	*F-change* = 3.19****
	R^2 *change* = 0.09	R^2 *change* = 0.11	R^2 *change* = 0.04
	Adjusted R^2 = 0.08	*Adjusted* R^2 = 0.10	*Adjusted* R^2 = 0.03
Block 2: Interdisciplinarity and responsibility			
Interdisciplinary interaction	0.22**** (0.17; 0.27)	0.25**** (0.18; 0.31)	0.27**** (0.18; 0.36)
Nursing responsibilities	−0.07**** (−0.11; −0.03)	−0.09**** (−0.14; −0.04)	−0.10**** (−0.16; −0.04)
	F-change = 76.87****	*F-change* = 61.26****	*F-change* = 40.40****
	R^2 *change* = 0.11	R^2 *change* = 0.09	R^2 *change* = 0.07
	Adjusted R^2 = 0.20	*Adjusted* R^2 = 0.19	*Adjusted* R^2 = 0.10

Note: Abbreviation: CI, Confidence interval.

Mental health sector and Works in inpatient treatment excluded due to redundancy (serve as reference categories).

Adjusted B = Unstandardized coefficient adjusted for all remaining factors in the model.

****$p < .001$, ***$p < .005$, **$p < .01$, *$p < .05$.

characteristics (education and experience level) and contextual factors (practice environment) influenced nurses' perceived opportunity to accommodate psychosocial and somatic healthcare needs. Of note, our findings indicate that working as a nurse in outpatient settings and ambulatory teams was related to fewer opportunities to accommodate somatic health care and higher opportunities to accommodate psychosocial needs compared with inpatient treatment settings. In the existing research literature, a central question for the organization of mental health and SUD treatment concerns continuity across inpatient and outpatient care or specialization of teams (Omer et al., 2015), and across the primary and secondary care levels (Nicaise et al., 2020). It is possible that the current results reflect that inpatient treatment generally has a main focus on somatic care, whereas psychosocial care may be a stronger focus in outpatient settings and ambulatory teams. More research is needed to disentangle such potential tendencies. There is a great need to ensure safe transition from inpatient to community settings through clarifying the patient's situation and needs regarding housing, work and further follow-up (Xiao et al., 2019).

The finding indicating that interdisciplinarity in the treatment unit is a positive factor in accommodating patients' needs concurs with previous research showing that interdisciplinary collaboration may be critical for adequate care in other settings than specialist mental health care, such as primary health care and critical care (Al Sayah et al., 2014;

Manojlovich & DeCicco, 2007). There may be several explanations for this association. It is possible that working in a multidisciplinary team or workplace together with professionals and leadership with complementary skills may positively influence nurses' perceptions of accommodating patients' needs, as opposed to a stricter and individual approach where they have to rely more on their own competence. The results also indicated that the contribution of strong interdisciplinary work exceeded formal competence such as level of education and work experience. A possible explanation is that interdisciplinary interaction is more important for nursing health care in the specific units than individual demographics and education among nurses.

Strictly defined nursing responsibilities were systematically associated with fewer perceived opportunities to accommodate patient needs across the three health domains. The existing literature is somewhat ambiguous regarding the role of nurses and the best ways to structure nurses' responsibility domains in relation to their clinical tasks (e.g., Bowers, 2009; Gausvik et al., 2015). The results of the current study support the assumption that professional autonomy and freedom are important in enabling nurses in the mental health and SUD sectors to accommodate patient needs. The distribution of responsibility also seems to be more critical than demographic characteristics among nurses for the accommodation of patients' needs. Thus, patients may benefit from an improved collaboration climate in these treatment sectors. When the role of nurses is strictly defined, it is possible that nurses find themselves subordinates of medical doctors and clinical psychologists in relation to somatic issues and mental health.

The most frequently reported unmet patient needs among nurses in the present study were related to economic supervision, sexuality and intimate relationships. This concurs with previous research indicating that the effort for preparing nurses to work in these domains is poorly developed (Kong et al., 2009). The associations in the current study may also be bidirectional. Unmet patient needs could be influenced by patient factors, for instance, patients not wanting nurses to intervene across all domains. This could be particularly relevant to problem domains, such as intimate relationships, economy and work/activity, which to a certain extent could be perceived by the patients and nurses as private matters.

4.1 | Limitations and strengths of the study

The study has some limitations that need consideration when the findings are interpreted. The cross-sectional design does not allow for causal inferences, and self-reported data may be susceptible to socially desirable responses. Common method bias may also partially explain associations between variables when the independent and dependent variables are obtained by the same method and from similar information sources. Further research could also seek to triangulate respondents (e.g., by including both patients and nurses) because the current research focused solely on the nurses and system factors. It should also be pointed out that the explained variance in the models was relatively low (range = 10% - 20%). However, the aim of the study was to investigate the associations between nurses' roles, interdisciplinarity and their perceived opportunities to accommodate a variety of patient needs, and not to maximize explained variance in perceived opportunities. The major strength of the current study was that the sample consisted of nurses drawn from the entire population of nurses in the mental health and SUD sectors. The large sample allowed us to adjust for central covariates relevant to clinical nursing, including nurses' education, experience and hospital contexts. Future studies would benefit from a differentiated analysis of nurse responsibility and interdisciplinarity across the different roles and settings.

5 | CONCLUSION AND IMPLICATIONS

Adjusting for demographic and formal competence factors, the present study indicates a rather strong association between interdisciplinary work and nurses' perceived opportunities to accommodate a variety of patients' needs. Facilitation of interdisciplinary collaboration and responsibility may facilitate clinical practice in mental health and SUD treatment services. In Norway and globally, a trend in health care is to use teams of professionals from different disciplines to deliver patient care. An implication of the current findings may be that more flexible roles for the various professions involved could be important for the opportunity to accommodate adequate treatment in mental health and SUD treatment settings.

Meeting the somatic and psychosocial needs is important for improving the quality of life among patients in the mental health and SUD sectors. The findings of the current study highlight the need to address how staff in these sectors organize practice to meet patients' diverse needs (e.g., sexual health care and economic supervision). Interdisciplinary teamwork could strengthen nurses' ability to provide such follow-up. Also, discussions among staff about the division of roles and responsibility would be beneficial. There are overlapping competences held by many professional groups. Finding the best possible balance of providing service in teams or individually could improve resource utilization at the same time as strengthening patient care, and making sure that the patients' various needs are met. Furthermore, inexperienced nurses could benefit from continuing education as well as working with experienced nurses, as the current findings reflected a tendency that experienced nurses perceived stronger opportunities to accommodate patient needs.

6 | RELEVANCE STATEMENT

The current study features a nationwide sample of 1,918 nurses from mental health, SUD treatment and combined mental health and SUD treatment sectors in Norway. The findings highlight the need to address how mental health and SUD nurses organize practice to meet patients' needs. Interdisciplinary teamwork could strengthen nurses' ability to provide follow-up of patient needs. Discussions among staff on the nursing role and responsibility would be beneficial. There are overlapping competences held by many professional groups. Finding

a balance of providing service in teams or individually could improve resource utilization at the same time as strengthening patient care.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

AUTHOR CONTRIBUTIONS

LM and MÅ conceptualized and designed the study. TN analysed the data, and all authors contributed to interpretations of the findings. TN, LM, JK and MÅ drafted the manuscript and revised it critically for important intellectual content. All authors approved the final version submitted for publication.

ETHICAL STATEMENT

The study was independently reviewed and approved by the Norwegian Centre for Research Data, reference number 49074. The research was carried out in accordance with the ethical principles outlined in the World Medical Association Declaration of Helsinki.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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REFERENCES

Abram, M. D. (2018). The role of the registered nurse working in substance use disorder treatment: A hermeneutic study. *Issues in Mental Health Nursing*, *39*(6), 490–498. https://doi.org/10.1080/01612840.2017.1413462

Al Sayah, F., Szafran, O., Robertson, S., Bell, N. R., & Williams, B. (2014). Nursing perspectives on factors influencing interdisciplinary teamwork in the Canadian primary care setting. *Journal of Clinical Nursing*, *23*(19–20), 2968–2979. https://doi.org/10.1111/jocn.12547

Allen, D. (2014). *The invisible work of nurses: Hospitals, organisation and healthcare*. Routledge.

Blythe, J., & White, J. (2012). Role of the mental health nurse towards physical health care in serious mental illness: An integrative review of 10 years of UK literature. *International Journal of Mental Health Nursing*, *21*(3), 193–201. https://doi.org/10.1111/j.1447-0349.2011.00792.x

Bowers, L. (2009). Association between staff factors and levels of conflict and containment on acute psychiatric wards in England. *Psychiatric Services (Washington, D. C.)*, *60*(2), 231–239. https://doi.org/10.1176/appi.ps.60.2.231

Brousselle, A., Lamothe, L., Sylvain, C., Foro, A., & Perreault, M. (2010). Integrating services for patients with mental and substance use disorders: What matters? *Health Care Management Review*, *35*(3), 212–223. https://doi.org/10.1097/HMR.0b013e3181d5b11c

Delaney, K. R., Robinson, K. M., & Chafetz, L. (2013). Development of integrated mental health care: Critical workforce competencies. *Nursing Outlook*, *61*(6), 384–391. https://doi.org/10.1016/j.outlook.2013.03.005

Donald, M., Dower, J., & Kavanagh, D. (2005). Integrated versus non-integrated management and care for clients with co-occurring mental health and substance use disorders: A qualitative systematic review of randomised controlled trials. *Social Science and Medicine*, *60*(6), 1371–1383. https://doi.org/10.1016/j.socscimed.2004.06.052

Frasch, K., Larsen, J. I., Cordes, J., Jacobsen, B., Wallenstein Jensen, S. O., Lauber, C., Nielsen, J. A., Tsuchiya, K. J., Uwakwe, R., Munk-Jørgensen, P., Kilian, R., & Becker, T. (2013). Physical illness in psychiatric inpatients: Comparison of patients with and without substance use disorders. *International Journal of Social Psychiatry*, *59*(8), 757–764. https://doi.org/10.1177/0020764012456803

Fung, Y. L., Chan, Z., & Chien, W. T. (2014). Role performance of psychiatric nurses in advanced practice: A systematic review of the literature. *Journal of Psychiatric and Mental Health Nursing*, *21*(8), 698–714. https://doi.org/10.1111/jpm.12128

Gausvik, C., Lautar, A., Miller, L., Pallerla, H., & Schlaudecker, J. (2015). Structured nursing communication on interdisciplinary acute care teams improves perceptions of safety, efficiency, understanding of care plan and teamwork as well as job satisfaction. *Journal of Multidisciplinary Healthcare*, *8*, 33–37. https://doi.org/10.2147/jmdh.S72623

Goulter, N., Kavanagh, D. J., & Gardner, G. (2015). What keeps nurses busy in the mental health setting? *Journal of Psychiatric and Mental Health Nursing*, *22*(6), 449–456. https://doi.org/10.1111/jpm.12173

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2006). *Multivariate data analysis*, 6th ed.. Pearson Prentice Hall.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate data analysis*, 7th ed. : Pearson Prentice Hall.

Harvey, R., & Jason, L. A. (2011). Contrasting social climates of small peer-run versus a larger staff-run substance abuse recovery setting. *American Journal of Community Psychology*, *48*(3–4), 365–372. https://doi.org/10.1007/s10464-011-9432-3

Kedote, M. N., Brousselle, A., & Champagne, F. (2008). Use of health care services by patients with co-occurring severe mental illness and substance use disorders. *Mental Health and Substance Use*, *1*(3), 216–227. https://doi.org/10.1080/17523280802274886

Kim, S. J., & Park, M. (2015). Leadership, knowledge sharing, and creativity: The key factors in nurses' innovative behaviors. *Journal of Nursing Administration*, *45*(12), 615–621. https://doi.org/10.1097/nna.0000000000000274

Kong, S. K. F., Wu, L. H., & Loke, A. Y. (2009). Nursing students' knowledge, attitude and readiness to work for clients with sexual health concerns. *Journal of Clinical Nursing*, *18*, 2372–2382. https://doi.org/10.1111/j.1365-2702.2008.02756.x

Manojlovich, M., & DeCicco, B. (2007). Healthy work environments, nurse-physician communication, and patients' outcomes. *American Journal of Critical Care*, *16*(6), 536–543. https://doi.org/10.4037/ajcc2007.16.6.536

McGovern, M. P., Lambert-Harris, C., Gotham, H. J., Claus, R. E., & Xie, H. (2014). Dual diagnosis capability in mental health and addiction treatment services: An assessment of programs across multiple state systems. *Administration and Policy in Mental Health*, *41*(2), 205–214. https://doi.org/10.1007/s10488-012-0449-1

McHugh, M. D., & Lake, E. T. (2010). Understanding clinical expertise: Nurse education, experience, and the hospital context. *Research in Nursing & Health*, *33*(4), 276–287. https://doi.org/10.1002/nur.20388

Mendes, A. (2015). The role of nurses' and patients' personal beliefs in nursing care. *British Journal of Nursing*, *24*(6), 345–345. https://doi.org/10.12968/bjon.2015.24.6.345

Moos, R. H. (2018). *Evaluating treatment environments: The quality of psychiatric and substance abuse programs*. Routledge.

Nicaise, P., Giacco, D., Soltmann, B., Pfennig, A., Miglietta, E., Lasalvia, A., Welbel, M., Wciórka, J., Bird, V. J., Priebe, S., & Lorant, V. (2020). Healthcare system performance in continuity of care for patients with severe mental illness: A comparison of five European countries. *Health Policy*, *124*(1), 25–36. https://doi.org/10.1016/j.healthpol.2019.11.004

Nunnally, J. C. (1978). *Psychometric Theory*, 2nd ed.. McGraw-Hill.

Omer, S., Priebe, S., & Giacco, D. (2015). Continuity across inpatient and outpatient mental health care or specialisation of teams? A systematic review. *European Psychiatry*, *30*, 258–270. https://doi.org/10.1016/j.eurpsy.2014.08.002

Saksvik-Lehouillier, I., Bjorvatn, B., Hetland, H., Sandal, G. M., Moen, B. E., Magerøy, N., Åkerstedt, T., & Pallesen, S. (2013). Individual, situational and lifestyle factors related to shift work tolerance among nurses who are new to and experienced in night work. *Journal of Advanced Nursing*, *69*(5), 1136–1146. https://doi.org/10.1111/j.1365-2648.2012.06105.x

Shih, T.-H., & Fan, X. (2008). Comparing response rates from web and mail surveys: a meta-analysis. *Field Methods*, *20*(3), 249–271. https://doi.org/10.1177/1525822x08317085

Van Bogaert, P., Timmermans, O., Weeks, S. M., van Heusden, D., Wouters, K., & Franck, E. (2014). Nursing unit teams matter: Impact of unit-level nurse practice environment, nurse work characteristics, and burnout on nurse reported job outcomes, and quality of care, and patient adverse events–a cross-sectional survey. *International Journal of Nursing Studies*, *51*(8), 1123–1134. https://doi.org/10.1016/j.ijnurstu.2013.12.009

Xiao, S., Tourangeau, A., Widger, K., & Berta, W. (2019). Discharge planning in mental healthcare settings: A review and concept analysis. *International Journal of Mental Health Nursing*, *28*(4), 816–832. https://doi.org/10.1111/inm.12599

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APPENDIX 1

TABLE A1 Dimensionality of perceived opportunity to accommodate patients' needs

	Somatic health care needs	Psychosocial care needs	Economic and legal supervision needs
Physical activity	**0.84**	–	–
Somatic health	**0.76**	–	–
Sleep, rest and welfare	**0.63**	–	–
Diet and nutrition	**0.61**	–	–
Mental health	–	**0.70**	–
Sexuality and intimate relationships	–	**0.66**	–
Communication and social interaction	0.31	**0.59**	–
Substance use	–	**0.58**	–
Social needs	–	**0.57**	–
Legal rights	–	–	**0.81**
Economic supervision	–	–	**0.79**
Explained variance	32.63%	11.65%	9.84%
Cronbach's α	0.735	0.661	0.624
Average corrected item-total correlations/ Pearson's r	0.53	0.42	0.45***

–factor loading <0.30.

***$p < .001$.

TABLE A2 Dimensionality of nurses' responsibility and interdisciplinarity

Item	Interdisciplinary interaction	Nursing responsibilities
At my workplace, we exchange experiences and competence across professional groups to develop better services	**0 . 80**	–
The interdisciplinary collaboration across professions functions well at my workplace	**0 . 78**	–
I have options in regard to what I want to focus on in my patient-related work	**0 . 77**	–
The responsibility of the nurses is clearly defined at my workplace	–	**0 . 91**
The responsibility of the nurses in relation to other disciplinary groups is clearly defined at my workplace	–	**0 . 88**
Explained variance	50.80%	22.59%
Cronbach's α	0.726	0.812
Average corrected item-total correlations/Pearson's r	0.55	0.68***

–factor loading <0.30.

***$p < .001$.