

Variables associated with work performance in multidisciplinary mental health teams

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Abstract

Objectives: This study investigates work performance among 79 mental health teams in Quebec (Canada). We hypothesized that work performance was positively associated with the use of standardized clinical tools and clinical approaches, integration strategies, “clan culture,” and mental health funding per capita.

Methods: Work performance was measured using an adapted version of the Work Role Questionnaire. Variables were organized into four key areas: (1) team attributes, (2) organizational culture, (3) inter-organizational interactions, and (4) external environment.

Results: Work performance was associated with two types of organizational culture (clan and hierarchy) and with two team attributes (use of standardized clinical tools and approaches).

Discussion and conclusion: This study was innovative in identifying associations between work performance and best practices, justifying their implementation. Recommendations are provided to develop organizational cultures promoting a greater focus on the external environment and integration strategies that strengthen external focus, service effectiveness, and innovation.

Keywords

Mental health, teamwork, work performance, determinants

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A team can be described as follows:

(a) two or more individuals who (b) socially interact (face to face or, increasingly, virtually); (c) possess one or more common goals; (d) are brought together to perform organizationally relevant tasks; (e) exhibit interdependencies with respect to workflow, goals, and outcomes; (f) have different roles and responsibilities; and (g) are embedded in an encompassing organizational system with boundaries and linkages to the broader system context and task environment.¹

Multidisciplinary mental health (MH) teams usually include psychiatrists, nurses, psychologists, social workers, psycho-educators, and general practitioners.

Teamwork or work performance is “the set of interrelated behaviors and actions that occur among team members while performing a task.”² According to Griffin et al.,³ work performance consists of three subcategories: proficiency, adaptivity, and proactivity. Proficiency is a function of “personal support,”⁴ “helping behavior”⁵ and “team role

behavior,”⁶ or the extent to which mutual expectations among team members are met.³ Adaptivity is a characteristic that allows individuals to deal with changes affecting their roles.³ Finally, proactivity is the capacity to foresee changes in working methods or procedures when circumstances require,^{3,7,8} allowing for preventive action.⁹ Proficiency, adaptivity, and proactivity are essential in multidisciplinary MH teams,¹⁰ where there is a high degree of uncertainty and interdependence.³

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While related, work performance and team effectiveness are two different concepts. Work performance is an expected behavior of each team member, while team effectiveness is the capacity for a team to reach its objectives.¹¹ Both concepts are crucial in delivering quality health care.^{12,13} According to the literature, they can reduce medical errors^{13,14} and health costs^{15,16} and improve treatment outcomes,^{15–17} patient satisfaction,^{13,16,17} and staff satisfaction.^{15,18} Strong work performance also serves to clarify the roles of health care providers¹³ and enhance inter-professional collaboration.^{13,19} By contrast, poor work performance reduces a team's ability to produce valuable outcomes and, therefore, negatively impacts health care delivery and the personal well-being of team members themselves.²⁰

Studies on work performance and team effectiveness originate mainly from the field of occupational psychology and focus on outcomes of work performance.²¹ Since 2000, more attention has been given to work performance as a mediating variable of team effectiveness.²¹ Models derived from psychological studies have since been applied in the health field, for example, the input–mediator–outcomes–input (IMOI) model,²¹ which is a refined version of the earlier input–process–output (IPO) model.^{22–25} In the IMOI model, performance-related variables are divided according to input (members, team context, organizational context), mediators (processes such as autonomy and conflicts affecting team effectiveness over time), emergent states (team-related mechanisms such as psychological safety and cohesion “conceived of as cognitive, motivational, or affective states”²⁶), and outcomes.²⁵ The IMOI model describes teams as complex, adaptive, dynamic systems, embedding individuals, and organizations. The three dimensions influence each other.^{21,27} Team members interact with professionals from other teams resulting in complex relationships^{12,18} that may influence the team itself, the organization, or the external environment.^{21,28}

Lemieux-Charles and McGuire¹⁸ developed a heuristic (health care) Integrated Team Effectiveness Model (ITEM) that maps the elements of teams, processes, and outcomes in health care. In this model, task-design variables (e.g. organizational context, type of team and composition, rules and procedures, use of quality guidelines) are influenced by external environments but may be manipulated by teams to improve effectiveness. Part of the rationale for constructing this model was that it allowed health care professionals and managers to consider teamwork as a potential determinant of various outcomes, such as reduced medical errors. In the health care sector, most studies have focused on identifying variables associated with team effectiveness^{13,18} and few have looked at variables associated with work performance.²⁹ Meanwhile, studies on work role performance rarely analyze variables associated with team effectiveness, leaving a gap to be addressed.

Team attributes affect work performance. Some studies have found that team size¹⁸ had a positive impact on work

performance,³⁰ while others have indicated the opposite.³¹ The multiplicity of professions among teams also plays a role.^{26,32,33} Diversified skills and expertise may positively influence work performance and team effectiveness,³² but too much diversity may cause conflict.^{20,26,33} To our knowledge, no study has analyzed the association between work performance and patient characteristics. One major source of stress that may hinder the work performance of professionals on MH teams is having too many patients with complex cases (e.g. high service users).^{34,35} The association between work performance and the time allotted, respectively, to evaluation and treatment/intervention has not been analyzed either. There is a lack of studies on the influence of using standardized clinical tools¹⁸ (e.g. protocols, best practices^{18,36}) on work performance, although they have been shown to improve team effectiveness. Meanwhile, the acquisition of new knowledge and skills is strongly associated with adaptivity and proactivity and may lead the team to a new phase of development.³² Standardized clinical tools facilitate information transfer and team coordination, furthering common knowledge, values, and practices among professionals. Since more use of standardized clinical tools may increase team proficiency and adaptivity, we formulate Hypothesis 1 that it could positively influence work performance in MH teams.

Similarly, the influence of using clinical approaches³⁷—particularly evidence-based practices²⁰—on work performance has not been analyzed, although we know that they can improve team effectiveness. For example, several studies have found that the implementation of care pathways enhances the effectiveness of multidisciplinary teams.^{12,38–40} According to Wholey et al.,²⁹ MH teams with a good dynamic, including a strong work role performance, would be more likely to implement evidence-based practices consistently. Considering that MH teams that rely on a broad range of effective clinical approaches may adapt more easily to various clients,⁴¹ and might also be proficient and proactive, we propose Hypothesis 2 that the use of more clinical approaches will be positively associated with work performance in MH teams.

Studies have found associations between organizational culture and work performance.^{42–44} Organizational culture is “a set of guiding principles”⁴⁵ influencing both operational processes and behaviors in an organization.⁴⁵ Organizational culture may positively or negatively affect staff or team attitudes,⁴⁶ and, in turn, professional–patient relationships. Organizational cultures are usually classified according to four archetypes along two axes: flexibility/stability in approaches to work and internal/external focus of the organization.⁴⁷ The archetypes are as follows: (1) clan/family (flexibility–internal focus), (2) adhocracy/entrepreneurial (flexibility–external focus), (3) market/rational (stability–external focus), and (4) hierarchy/bureaucratic (stability–internal focus).⁴⁸ However, two or more cultures may coexist inside a single organization.^{45,49} According to the literature, a clan culture considers teamwork and member involvement in

decision-making to be most important.⁵⁰ Clan culture has also been more closely correlated with job satisfaction,^{48,51} which is the most important outcome for professionals in terms of both work performance and team effectiveness.⁵² Considering that satisfied workers are less likely to leave their job⁵³ or suffer burn-out, and more likely to perform well and cooperate with other team members,⁵⁴ we suggest Hypothesis 3 that clan culture will be positively associated with work performance in MH teams.

We know that teams interact within, and beyond, their organizations, but such interactions have not been the object of a systematic assessment in the literature on work performance.¹⁸ This issue is increasingly relevant in the context of service restructuring, which implies greater interaction and integration among teams from different organizations. Studies in non-health care sectors suggest that external interactions have positive consequences for work performance⁵⁵ but may also provoke conflict.⁵⁶ Health care sector studies have found that better health service integration may enhance both work performance and team effectiveness as a result of increased satisfaction, motivation, and well-being among service providers.⁵⁷ More frequent interactions, especially when they are satisfactory, promote trust among professionals and teams,⁵⁸ which is an important determinant of work performance.⁵⁹ The integration of new administrative and clinical strategies, including strategic planning across networks, service agreements, as well as staff-sharing initiatives and the hiring of liaison officers, has emerged as a positive impetus for organizational cohesion.⁶⁰ Studies show that interdisciplinary training improves team effectiveness.^{37,61} Furthermore, better integration ensures continuous services, which are essential in complex cases where long-term commitment is required.⁶² Considering the importance of external team relations both for professionals and patient care, we advance Hypothesis 4 that integrative strategies will be positively associated with work performance in MH teams.

Finally, few studies have addressed the interaction between teams and their environments.¹⁸ The external environment—be it political, social, or geographical—does play a role in shaping organizations and teams.²⁸ MH services must respond to needs⁴⁵ that represent a significant social and economic burden for both the community and affected individuals, particularly those with severe mental disorders and co-occurring MH and substance use disorders.⁶³ Adequate funding and resources are required to meet patients' needs, which suggests Hypothesis 5 that funding per capita for MH will be positively associated with work performance.

All in all, few studies have deciphered the nature or impact of contextual and work performance elements of well-functioning multidisciplinary MH teams. This study aims to bridge this gap by exploring the impact of key variables, including the use of standardized clinical tools and approaches, the frequency of interactions within the teams, their interactions with external organizations, and integration strategies aimed at advancing work performance in MH.

Context

This study took place as part of a larger evaluation⁶⁴ of a major MH reform in Quebec (Canada) health networks.⁶⁵ Canadian health services are mostly public and under provincial jurisdiction, but with financial support from the federal government. In Quebec, health and social services are part of the same ministry. The Quebec health and social systems are organized under nine programs (e.g. MH, physical health). Before April 2015, these programs were regulated at three levels. At the provincial level, the Quebec Ministry of Health and Social Services ensured overall governance. At the regional level, there were 15 regional health agencies (abolished in 2015) that planned, organized, coordinated, funded, and evaluated health and social services. Finally, as part of the 2005 health system reform, 93 local health networks were established,⁶⁶ and general hospitals, nursing homes, and local community service centers were merged to create a Health and Social Service Center (HSSC) in each network. Among other responsibilities, these HSSCs organize integrated service networks in their respective areas and coordinate as needed with specialized and primary care resources to better align services with the MH needs of their populations. Depending on the local network, specialized MH services might be provided by a psychiatric or general hospital. Primary care resources include medical clinics, psychologists practicing in private clinics, institutional MH housing (e.g. foster home, supervised housing), and community-based organizations (e.g. crisis centers, day centers, and self-help groups). Multidisciplinary primary care teams set up in each HSSC also deal with users having common mental disorders (e.g. anxious disorders, minor depression). These teams are staffed for the most part by experienced professionals (especially nurses and social workers) transferred from specialized MH services. However, there are fewer professionals in primary care teams than in specialized MH service teams that handle severe mental disorders (e.g. schizophrenia) or complex cases (e.g. co-occurring MH and substance use disorders). Some professionals, such as psychiatrists and specialists in substance use disorders, were not included in primary care teams.⁶⁴

In line with current international health care trends,^{67–69} the Quebec Reform (2005–2015) meant to foster recovery among MH patients by providing quality primary care services to ensure community integration, service continuity, and service provider–client collaboration. The reform also introduced best practices (e.g. care pathways, cognitive behavior therapy) aimed at quality care and better cooperation between specialized MH teams and primary care services. Service agreements, liaison officers, and other integration strategies were also implemented.⁶⁴

Methods

Study design and data collection

In all, 9 of the 93 local health networks were included in the study following a consultation with 20 decision makers

(e.g. the MH director in the Quebec Ministry, MH regional coordinators, a representative of the Quebec Psychiatric Association); networks were selected for maximum variation and representativeness in terms of geographic area (e.g. urban, semi-urban), the organization of primary and specialized care, the presence or not of a psychiatric hospital, and the deployment level of the reform. The evaluation considered other factors including the diversity of services offered in the networks, their use of effective integration strategies and best practices, as well as barriers and facilitators related to the implementation of the reform. Networks may be divided into three groups based on the following characteristics: (1) presence of a psychiatric hospital ($n=3$), (2) fewer than 200,000 residents and availability of a psychiatry department in a general hospital ($n=3$), and (3) more than 200,000 residents and availability of a psychiatric department in a general hospital ($n=3$). Of the nine networks, five were in semi-urban areas and four in urban areas. Population ranged from 64,000 to 290,000, with 5% to 21% of low-income earners and the prevalence of MH disorders ranging from 11% to 12.8%.⁷⁰ Funding for MH varied from CAD\$68 to CAD\$211 per capita.

Data were collected from two sources: (1) documents describing networks, organizations, and MH teams (e.g. socio-demographic variables) obtained from decision makers and (2) questionnaires comprising two validated scales and a set of questions designed specifically for this study and sent to team managers ($n=86$). Data collection took place between October 2013 and June 2014 using a 252-item questionnaire. Questions covered client characteristics, team profiles, clinical activities, network integration strategies, and frequency and satisfaction of interactions between the teams and other organizations both within and beyond the networks. Team managers were strongly encouraged to consult with their team members as well as their organization's administrative data in completing the questionnaire.

The study included a 17-member research advisory committee consisting of 8 decision makers and 9 network respondents who facilitated data collection and validation of instruments. The research ethics board of an MH university institute approved the study protocol.

Description of the dependent variable and conceptual framework

Work performance, the dependent variable, was measured with an adapted version of the Work Role Questionnaire³ translated into French by Chiochio et al.⁷¹ The aggregated Cronbach's alpha for the original validation of this questionnaire was 0.91.³ The Work Role Questionnaire adapted in various forms, settings, and languages has consistently demonstrated outstanding psychometric properties.^{71–73} Using the referent-shift approach,⁷⁴ the nine original items designed to measure individual behaviors contributing to work performance were adapted to capture team-level behaviors. For

example, items such as “I coordinate my work with others,” “I respond constructively to changes in the way my team works,” and “I develop new and improved methods to help my team perform better” were changed to “Team members coordinate their work with each other,” “Team members respond constructively to changes in the way they work,” and “Team members develop new and improved methods to help the team perform better.” The manager could, therefore, provide an assessment of proficiency, adaptivity, and proactivity at the team level. The nine items were measured on a 5-point Likert scale.

The analysis was guided by a conceptual framework (Figure 1) adapted from existing models^{18,21} and from the related literature on work performance and team effectiveness. The independent variables were organized into four key areas starting with internal team-level characteristics then moving outward. They are as follows: (1) team attributes, (2) organizational culture, (3) inter-organizational interactions, and (4) external environment.

Team attributes included composition of MH teams (number and type of professionals), time allocated to treatment or intervention, time spent on evaluation, patient characteristics in the caseload (percentage with low income, suicidal ideation, high service users), utilization of standardized clinical tools (MH disorder screening tools, MH disorder assessment tools, substance use screening tools, substance use assessment tools, assessment tools for patient satisfaction, clinical feedback procedures, clinical protocols or best practice guidelines, shared clinical records, and intra-organizational referral procedures), and use of clinical approaches (cognitive behavioral therapy, motivational interviewing, care pathways, recovery approach, strengths model, self-management, and stepped-care). Standardized clinical tools ($n=9$) were measured using a 5-point Likert scale (1=never used; 5=very often used) and merged into a global score (from 9 to 45). Clinical approaches ($n=7$) were measured with a 5-point Likert scale (1=never or almost never used; 5=very used) and merged into a global score (from 7 to 35).

Organizational culture was measured with the Organizational Culture Assessment Instrument (OCAI).⁵⁰ Validated in several studies,^{47,75–77} the OCAI has been utilized to assess organizational culture in health care services.^{45,46,48} It comprises six questions (each with four possible answers) related to organizational character, managers and leadership, organizational cohesion, employee management, organizational priorities, and success criteria.⁵⁰ Participants (in this study, team managers) are asked to distribute 100 points across four possible choices for each question.⁵⁰ For example, at question 1 (dominant characteristics), the participant can distribute points as follows: (1) “The organization is a very personal place ...”—50 points, (2) “The organization is a very dynamic and entrepreneurial place ...”—30 points, (c) “The organization is very results-oriented ...”—10 points, and (d) “The organization is a very controlled and structured place ...”—10 points. A specified

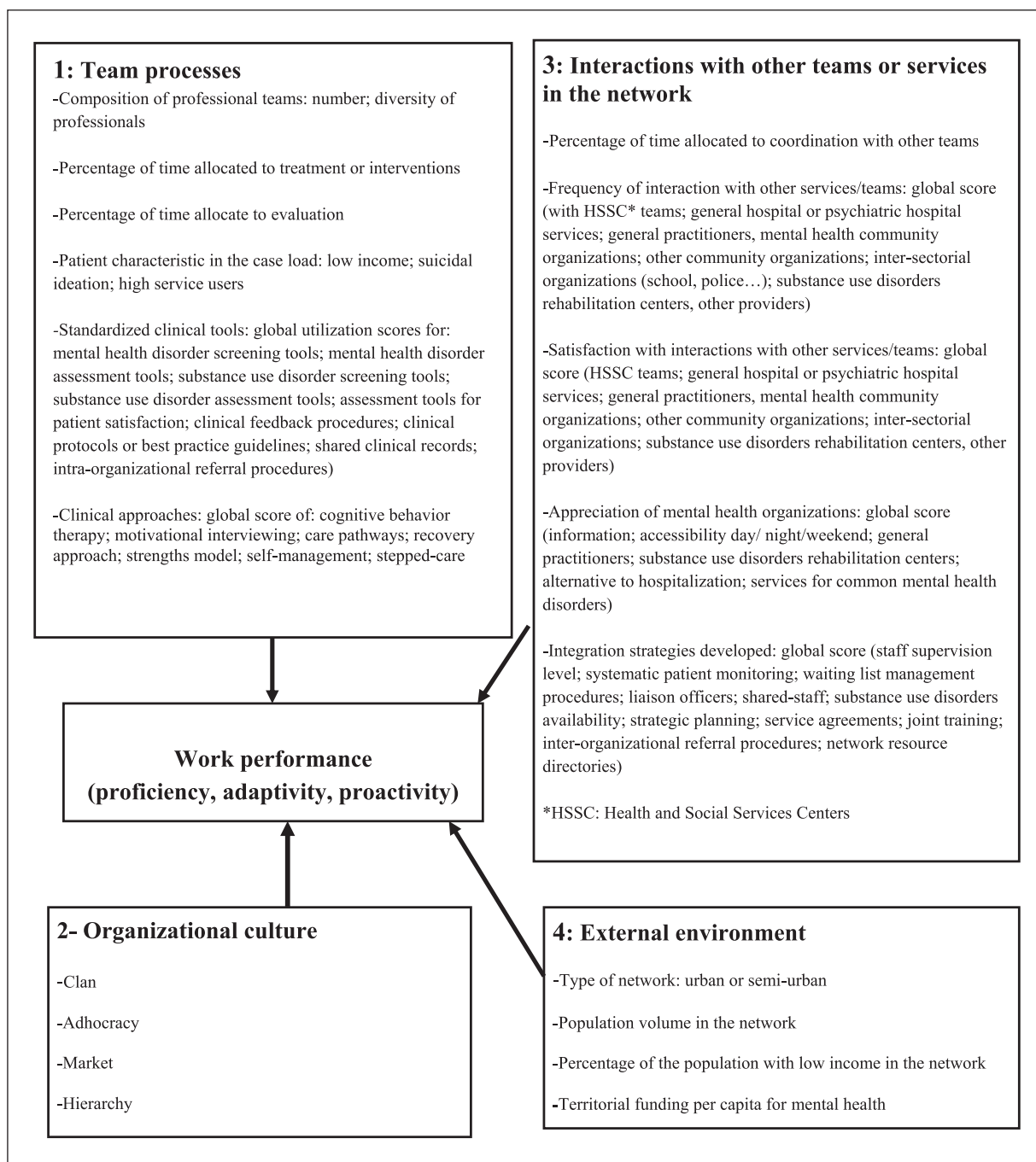


Figure 1. Conceptual framework.

organizational culture type is associated with each choice according to the dominant answer. The team would thus be characterized as having a clan, adhocracy, market, or hierarchy culture.³⁷ The OCAI was translated into French.

Inter-organizational interactions included time allocated to coordination with other teams, frequency of interactions with other services/teams, satisfaction with interactions with other services/teams, assessment of MH services organizations, and integration strategies developed (e.g. liaison

officers, joint training). Frequency of interactions (1=very low; 5=very high), satisfaction with interactions (1=very low; 5=very high), integration strategies (1=absent; 5=completed implementation), and assessment of MH service organizations (1=very inadequate; 5=very adequate) were measured using a 5-point Likert scale and merged into a global mean score (from 1 to 5).

External environment variables included type of network (urban or semi-urban), population by network, percentage of

low-income population by network, and MH funding per capita.

Analysis

Missing values were detected using the SPSS tool's missing value analysis feature, which shows the number of participants with missing values, the total number of missing values, and the pattern (random versus systematic) of missing values. Variables with more than 5% of missing values were discarded. The few variables with missing values were treated by imputing the most likely values using regression analyses (multiple imputations). We have also tested post hoc bivariate and multivariate analyses using database with missing values replaced by mean values, instead of multiple imputations. Outliers were detected using box plot graphs. Normality assumptions for the dependent variable were estimated using distribution and normality graphs, skewness, and kurtosis.

The analysis was then conducted; this consisted of univariate analysis, including frequency distributions (number, percentage) for categorical variables, and central tendency measures (mean, standard deviation) for continuous variables, as well as bivariate and multivariate analyses. Bivariate analyses included t tests analysis of variance (ANOVA) to assess associations of each independent variable with work performance, using an alpha value of 0.10. Variables with significant associations were then used to build a multiple linear regression model, incorporating a backward elimination technique with alpha set at 0.05. The model was assessed for total variance explained and goodness of fit. Using chi-square statistics, we conducted other analyses to compare specialized and primary care teams across the three geographical groups and in terms of work performance and organizational cultures.

Study power and sample size were calculated using G*Power 3.1.9.2 software. To yield an effect size of 0.15, the alpha error was set at 0.05 for an expected power of 0.90 using a maximum of five predictors to run a multiple linear regression analysis with the dependent variable "work performance." This yielded an estimated sample size of 73 participants.

Results

Of a total of 86 team managers invited to the study, 79 agreed to participate, for a 92% response rate. Comparisons were conducted between the 79 participants and the 7 non-participants regarding distribution by gender and type of health care settings (primary versus specialized health care services). No significant differences were found (gender: Pearson chi-square=0.604; df=1; Fisher's exact test two-sided p=0.437 and type of health care setting: Pearson chi-square=0.604; df=1; Fisher's exact test two-sided p=0.435).

The majority of team managers consulted with their team members (n=49; 62%) and used organizational administrative data (n=47; 59%) in completing the questionnaire. Of the 79 teams, 31 were primary care teams and 48 specialized MH service teams. Most teams (68%) were managed by women. Roughly 50% of the teams were in an area with a psychiatric hospital, whereas 32% were in large networks with a general hospital that included a psychiatric department. The rest were in smaller networks. MH teams employed an average of 11.4 (standard deviation (SD)=13.1) full-time professionals (Table 1). Most patients served by the teams were living in poverty. MH team members dedicated most of their time (53%) to treatment and about 16% to coordinate with other teams. The utilization level for clinical approaches (global mean score=18.38 on a maximum possible score of 35) and the frequency of interactions with other services/teams (mean score=2.10 on a maximum possible score of 5.00) were both low.

The dependent variable was normally distributed, with a kurtosis of 0.629 and a skewness of -0.287. The global mean score for work performance was 3.26 (SD=0.79) out of a possible 5.00 (Table 2). Work performance was significantly higher in terms of proficiency versus adaptivity (two-tailed $p < 0.0001$; $df = 78$; $t = -8.298$), and for proficiency versus proactivity (two-tailed $p < 0.0001$; $df = 78$; $t = -6.837$); there were no significant differences between adaptivity and proactivity (two-sided p value=0.570; $df = 78$; $t = 0.570$). Nor were there significant differences between specialized and primary care teams, or among the geographical groups, in relation to work performance.

The most common organizational cultures identified among the teams were clan and hierarchy (Table 3). For teams located in large networks having a psychiatric department in a general hospital, the clan culture was more often identified (mean=225, SD=73.6) followed by the hierarchy culture (mean=196.4, SD=75.2). The clan culture was also predominant in networks having a psychiatric hospital (mean=206.0, SD=77.3) followed by the hierarchy culture (mean=180.3, SD=57.5). In small networks having a general hospital psychiatric department, the hierarchy culture was most frequently identified (mean=209.9, SD=78.2) followed by the clan culture (mean=197.6, SD=59.2). There were no significant differences between the three geographical groups, or specialized and primary care teams, with respect to their respective organizational cultures.

The following variables were significantly associated with work performance in the bivariate analysis (Table 4): standardized clinical tools, clinical approaches, time allocated to treatment, and patient income level (team attributes); clan and hierarchy culture (organizational culture); integration strategies; and frequency of interactions (interactions with other teams or services in the network). These results seem to confirm Hypotheses 1, 2, 3, and 4. No

Table 1. Teams' characteristics (n=79).

Organization characteristics	Mental health specialized services (N=48)				Mental health primary care teams (N=31)				Total (N=79)	
	Minimum	Maximum	Mean	SD	Minimum	Maximum	Mean	SD	Mean	SD
<i>Composition of teams (Nb)</i>										
Psychiatrists	0.0	17.0	3.30	0.71	0.0	17.0	0.79	3.46	2.05	2.09
General practitioners	0.0	3.0	0.63	0.71	0.0	9.0	0.57	1.88	0.60	1.30
Nurses	0.0	40.0	5.83	7.72	0.0	7.8	2.02	2.36	4.34	6.45
Psychologists	0.0	4.0	0.86	1.10	0.0	18.0	2.95	4.26	1.77	3.07
Social workers	0.0	12.0	1.71	2.02	0.0	18.0	3.55	4.05	2.48	3.14
Psycho-educators	0.0	19.0	1.63	3.93	0.0	25.0	2.87	5.83	2.25	4.96
Occupational therapists	0.0	4.0	1.01	0.97	0.0	6.0	0.70	1.64	0.87	1.30
Total ^a	0.0	67.0	11.66	12.42	1.0	70.0	11.04	13.69	11.35	13.05
<i>Patient characteristics in the caseload (%)</i>										
Proportion of patients meeting poverty	5.0	100	63.98	25.53	30.0	100	74.75	19.46	68.21	23.80
Proportion of patients with suicidal ideation	0.0	95.0	30.39	24.49	0.5	70.0	23.34	19.79	27.62	22.89
High users of services	0.0	90.0	22.58	22.08	.00	100	16.42	26.36	20.16	23.88
<i>Time allocated by teams (%)</i>										
To treatment or interventions	2.0	100	53.03	23.52	2.0	85.0	53.00	25.49	53.02	24.51
To evaluation	3.0	90.0	24.57	21.87	2.0	85.0	27.63	19.84	26.19	20.85
To coordination with other teams	0.0	80.0	14.42	15.11	1	75.00	18.43	14.89	16.43	14.93
Standardized clinical tools ^b	14.0	30.0	26.90	6.81	16.0	37.0	24.81	5.53	26.08	6.38
Clinical approaches ^c	9.00	26.00	18.96	3.71	8.00	23.00	17.48	3.67	18.38	3.74
<i>Interactions with other teams or services in the network</i>										
Frequency of interaction with other services/teams ^d	1.05	4.20	2.10	0.78	1.05	3.60	2.15	0.66	2.12	0.73
Satisfaction of interactions with other services/teams ^d	1.50	5.00	3.31	0.82	2.00	5.00	3.79	0.87	3.50	0.87
Integration strategies developed ^d	1.80	4.80	3.33	0.77	2.20	5.00	3.15	0.68	3.26	0.74
Assessment of mental health service organizations ^d	1.00	6.00	4.26	0.83	3.33	5.33	4.42	0.67	4.32	0.77

^aFull time.

^bGlobal score of the sum of all variables merged (1 to 5 for each variable); Figure 1, box 1; minimum: 9, maximum: 45; higher = positive.

^cGlobal score of the sum of all variables merged (1 to 5 for each variable); Figure 1, box 1; minimum: 7, maximum: 35; higher = positive.

^dMean score of the sum of all variables merged (1 to 5 for each variable); Figure 1, box 3; minimum: 1, maximum: 5; higher = positive.

association having been found in the bivariate analyses with external environment variables, Hypothesis 5 was not confirmed.

Table 5 presents variables associated with the dependent variable that were statistically significant at $p \leq 0.05$. Taken together, four variables explain 35.3% of the variance ($F_{(x,y)} = 9.963$, $p < 0.001$). Associations in bivariate analyses were slightly different for variables subjected to replacement of missing data by mean values instead of the imputation method. But with both methods, the multivariate model was the same. Of the three variables positively associated with work performance, two were related to organizational culture (clan culture and hierarchy culture) and one to team characteristics (standardized clinical tools). Another variable related to team characteristics (clinical approaches) was marginally associated with the dependent variable. No association was found between work performance and interactions with other teams or services in the network or with the external environment.

Discussion

With a mean of 3.26, the total score of work performance in our sample is lower than those found in longitudinal studies (3.79 at Time 1;⁷⁸ 4.03 after 12 months⁷⁹) using the Work Role Questionnaire. Comparisons are difficult since participants in those studies were not from the health field.

It is interesting that teams assigned high scores to mutual assistance, work coordination, and good communication, which are elements related to proficiency, considering that primary care teams were relatively recent comparative to specialized teams. Changes brought about by the reform may explain the lower scores for team adaptivity and proactivity.⁶⁴ For example, members of new primary care teams who were transferred from specialized MH services where they had been long-standing staff members had to make significant adjustments in their working conditions.⁶⁴ For their part, specialized MH services were dealing with the aftermath of this considerable staff turnover while trying to avoid service

Table 2. Work performance (N = 79).

	Minimum	Maximum	Mean	Standard deviation
<i>Proficiency</i>				
Team members coordinate work among themselves	2	5	3.46	0.75
Team members communicate effectively with each other	2	5	3.40	0.69
Team members help each other out when asked, or in need	2	5	3.54	0.85
Total ^a	2	5	3.47	0.76
<i>Adaptivity</i>				
Team members deal effectively with changes (e.g. new members)	1	5	3.27	0.83
Team members learn new skills or take on new roles to cope with changes in the way the teamwork	1	4	3.01	0.81
Team members respond constructively to changes in the way they work	1	5	3.13	0.87
Total ^a	1	5	3.14	0.84
<i>Proactivity</i>				
Team members suggest ways to make the team more effective	1	5	3.26	0.78
Team members develop new and improved methods to help the team perform better	1	5	3.06	0.83
Team members improve the way the team does things	1	5	3.18	0.72
Total ^a	1	5	3.17	0.78
Work performance ^a	1	5	3.26	0.79

^aMean score (1 to 5 for each variable); minimum: 1, maximum: 5; higher = positive.

Table 3. Organizational culture (N = 79).

	Minimum	Maximum	Mean	Standard deviation
Clan ^a	60	400	207.17	70.26
Adhocracy ^a	40	230	112.87	38.95
Market ^a	25	225	113.30	41.65
Hierarchy ^a	50	395	192.92	68.60

^aMinimum: 0, maximum: 600.

duplication and maintain continuous care.⁶⁴ These findings agree with research suggesting that changing roles and identities negatively affect work performance.⁸⁰

The results confirm Hypothesis 1 that the use of standardized clinical tools was linked to work performance. This association suggests that the use of standardized clinical tools tended to promote the integration of professionals within their teams and enhance their capacity for working under a shared vision and in a coordinated fashion.⁶⁰ Shared knowledge, skills, practices, and experience lead to better patient outcomes.¹⁹ The use of standardized clinical tools, each targeted to particular mental disorders, increases the proficiency of clinicians to screen and treat a variety of issues.⁴¹

Hypothesis 2 was partially confirmed with clinical approaches being marginally associated with work performance in the final model. This marginal association might be the result of the low level of use of clinical approaches in our sample. Clinical approaches, especially evidence-based practices, also have to be followed with great fidelity to be effective.⁸¹ Due to the biopsychosocial origins of MH

disorders, the integration of clinical approaches (e.g. cognitive behavior therapy) with pharmacotherapy is recommended for both severe and more common disorders such as depression and anxiety.^{82,83}

Hypothesis 3 was confirmed: the clan culture was significantly associated with work performance. This finding supports other research on the importance of work performance, joint participation in decision-making, and consensus as dominant values in this organizational culture.⁵⁰ Collaborative decision-making is a hallmark of effective health teams.²⁰ Furthermore, a meta-analysis showed that provider satisfaction, a variable strongly associated with both work performance and effectiveness, was positively associated with the clan culture.⁵¹ The literature concurs that the clan culture is particularly well adapted to primary care teams⁴⁸ and was found to be more prevalent as an organizational culture in Canadian hospitals than in those in the United States and the United Kingdom.⁴³

Work performance was also related to the hierarchy culture in our model, which may be explained by the stability that characterizes this organizational culture.⁵⁰ According to West and Lyubovnikova,⁸⁴ more stable teams are more likely to perform and to be effective due to greater familiarity between co-workers. Strong stability promotes the development of shared mental models within the team, which influence team effectiveness.^{84,85} Also, members of hierarchy-based teams have well-defined roles and clear lines of authority,⁸⁶ without which team members may lose their focus.²⁰ Moreover, role ambiguity is the most negative stressor related to work performance.⁸⁷ By contrast, when roles are clear, staff members know what is expected of them and exercise better control over their job, which leads, in turn, to stronger

Table 4. Bivariate coefficients: dependent variable “work performance.”

		Unstandardized coefficients		Standardized coefficients	t	Significance
		B	Standard error	Beta		
Team processes	Patient income level	-0.037	0.022	-0.190	-1.696	0.094
	Time allocated to treatment	0.012	0.007	0.202	1.806	0.075
	Clinical approaches	0.373	0.135	0.300	2.757	0.007
	Standardized clinical tools	0.306	0.059	0.511	5.220	<0.001
Organizational culture	Clan	0.012	0.007	0.185	1.649	0.001
	Hierarchy	0.004	0.008	0.064	0.565	0.002
Interactions with other teams or services in the network	Integration strategies	0.255	0.075	0.361	3.396	0.001
	Frequency of interactions	0.097	0.047	0.231	2.087	0.040

Table 5. Variables associated with work performance multiple regression model.

Model		Standardized coefficients	t	Significance	95.0% confidence interval for B		Collinearity statistics	
		Beta			Lower bound	Upper bound	Tolerance	VIF
Team processes	Clinical approaches	0.185	4.458	0.000	9.023	23.612	0.808	1.237
	Standardized clinical tools	0.442	4.259	0.000	-0.030	0.502		
Organizational culture	Clan	0.276	2.579	0.012	0.004	0.032	0.775	1.290
	Hierarchy	0.217	2.061	0.043	0.000	0.029	0.801	1.248

Total variance explained: R²: 0.353; goodness of fit: analysis of variance (ANOVA): F=9.963; p<0.001; VIF= Variance Inflation factor.

team adaptivity and proactivity.³ The hierarchy culture is reportedly more appropriate and useful in large institutions such as psychiatric hospitals.⁴⁸ In keeping with findings on the possible coexistence of several cultures within organizations,⁴⁵ the “hybridization” of cultures identified in this study may reflect the after-effects of merging general hospitals, local community health centers, and nursing homes when creating HSSCs, as well as the transfer of professionals from specialized to primary care services.^{45,50}

Hypothesis 4 was only partially confirmed. Larger use of integration strategies was associated with work performance in bivariate analyses but not in the final model. Inter-professional integration within teams might thus be strong enough to offset integration with other teams and organizations. The clan and hierarchy cultures, more prevalent in health teams generally and in our study, imply an orientation toward internal environments and processes,⁴⁸ while the focus of adhocracy and market cultures, both relatively absent in our findings, is toward the external environment.

Finally, Hypothesis 5 was not confirmed: work performance was associated neither with higher per capita funding nor with other external environmental variables. Most studies on work performance or team effectiveness have not

considered these variables, which suggests that this body of literature was too small and too inconsistently analyzed to arrive at valid conclusions.¹⁸ We may simply conclude that the effect of external environment variables on MH teams is too indirect to exert any real influence on work performance.

Limitations

This study has six important limitations. First, data are cross-sectional and as such cannot be used to make cause-and-effect inferences. Second, although statistically sufficient to run analyses, our sample size was relatively small, which could have had an adverse impact on precision and power in our estimates and have prevented us from conducting a multi-level study accounting for the networks. Better statistical power would have provided more nuanced results. Third, it was impossible to control for network differences in the regression model, as networks were represented by a nine-category nominal variable. Fourth, while the majority of team managers consulted with their team members and data banks, they alone were solicited to complete the Work Role Questionnaire. We must acknowledge that individuals within each MH team could have given a distinct and maybe more

positive or negative evaluation of their work performance.⁸⁸ Fifth, in the same way, professionals would probably have provided a somewhat different response regarding the prevailing organizational culture inside their team compared to their manager. Finally, as results are based on nine Quebec networks, the model would need further testing in other health care systems.

Conclusion

This study explored the relative importance of several key variables associated with an under-researched aspect of MH work performance. The study was innovative in identifying associations between MH work performance and use of standardized clinical tools, and with clinical approaches, more marginally, as variables related to team effectiveness. This finding underlines the efficacy of these best practices, establishing a rationale for their implementation by health care managers and larger use among MH professionals. Although future research is needed to confirm our results, the use of evidence-based clinical tools or approaches and other best practices may mediate between patient outcomes and variables usually associated with work performance such as individual autonomy, conflict, and job satisfaction. Our findings also open avenues for future study that would independently test and analyze the role of specific clinical best practices or integration strategies (such as joint training and liaison officers) using larger samples.

This study confirms that work performance is strongly influenced by organizational culture, especially clan and hierarchy. It would also be advisable that MH teams develop adhocracy and market cultures, which emphasize the external environment and partnerships while also focusing on patient needs, service effectiveness, and innovation. A more systematic implementation of certain integration strategies, such as service agreements, which are partially associated with work performance, as well as the introduction of liaison officers or joint training initiatives may also encourage better alignment between MH teams and their environments, to the ultimate benefit of patients.

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Ethical approval

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Informed consent

Informed consent was obtained from all participants, each of whom signed a consent form.

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