Introduction

Integrated care models are increasingly implemented internationally to reduce healthcare service fragmentation and better meet the needs of patients [1–3]. Person-centered and integrated care are also recognized for their positive impact on service providers by reducing hospital readmission or costs, as well as for boosting job satisfaction among health care professionals and improving perceived health and satisfaction with services among service users [2, 4, 5]. Ongoing mental health (MH) reforms since the early 2000s have aimed particularly at improving integrated care and increasing service quality [6]. Following international trends and the 2005 Quebec MH Action Plan [7], health and social service centers (HSCC) were created from mergers of general hospitals, nursing homes and local community service centers (LCSC) [8]. HSCC were responsible for integrating MH services within their respective MH service networks (MHSN), bringing together specialized MH services and new MH primary care teams, introducing integration strategies including service agreements and deploying liaison officers.

The development of a theoretical framework for assessing the implementation of integrated care has been the subject of various studies [9]. The Donebedian model [10] is one of the main models used for assessing the quality of health services [11, 12] and partnerships [11]. The Donebedian model is based on the theory that structures bear on team processes, and in turn, on health service outcomes [11]. MHSN with stronger structural elements such as greater financial resources or levels of service integration are expected to produce better outcomes for service users [13], while effective teamwork among multidisciplinary professionals should promote high quality service delivery [14, 15], and improve satisfaction among service users [16]. According to a recent literature review, team
processes are the cornerstone of integrated care [9]. Team effectiveness is associated with processes such as work role performance (i.e., actions and behaviors of team members involved in executing tasks) [17, 18], professional autonomy [19], team collaboration [20], and decision-making [21]. A recent study found that combinations of different organizational cultures were associated with higher levels of perceived integrated care among patients [22]. While some studies have identified factors related to structures, processes and outcomes in explaining the overall success or failure of integrated care [9, 23–25], few studies to our knowledge have used cluster analysis to identify and compare profiles of MHSN in terms of structures, processes, and outcomes, based on the perceptions of team managers, MH professionals (MHP) and service users. Local-level reforms have important implications for MHP [26]. Teams bring together professionals with different values, experiences and practices, increasing the risk of interpersonal conflict [27] and reducing professional autonomy somewhat [28, 29]. It is also reported than 50–70% of inter-organizational collaboration fails [25]. Moreover, the transformation of health systems to provide person-centered and integrated care continues to represent a challenge for managers and professionals alike [16]. While MH reforms have focused on meeting the needs of service users, promoting recovery and quality of life (QOL), few studies [30–32] have linked these outcomes to the organization of services (structures) in various territories, or to professional and team characteristics (processes).

A reliable method for identifying categories based on groupings of different types of variables associated with subjects is cluster analysis [33]. Cluster analysis has often been used for the creation of typologies of MH service users based on their sociodemographic, clinical and service use characteristics [34–38]. However, to our knowledge, no previous study has used cluster analysis to identify categories that take into account particular characteristics of MH structures, MH teams and MH services users in networks.

This study aimed to understand how different configurations of MHSN and teams impact on service user outcomes, by identifying through cluster analyses specific categories of associated variables within three Quebec MHSN, based on interrelationships among: 1) MH settings, including territorial and organizational features (structures); 2) characteristics of MHP, including team process variables (e.g., team support, team autonomy); and 3) service user characteristics, including socio-demographic variables, clinical characteristics, and outcomes (e.g., QOL, recovery). Based on the Donabedian model, we hypothesized that more positive structures would relate to better team processes in MHSN and in turn to more positive outcomes for service users.

Methods
Setting
This study was conducted in three Quebec MHSN selected for type of territory (urban, semi-urban), population demographics, diversity of services offered, implementa-

- tion of integration strategies, and use of evidence-based practices. Network 1 was labelled “Metropolitan MHSN”, Network 2, “Urban MHSN” and Network 3 “Semi-urban MHSN”. Table 1 shows the main characteristics of the three MHSN.

Sample and data collection
Data came from four sources: 1) documentation from organizations and MH teams in each selected network; and questionnaires completed by 2) team managers, 3) MHP, and 4) service users. Documents consulted between November 2012 and March 2013 provided data on population demographics, government financial support for MH, and service provider characteristics. Questionnaires were completed as follows: team managers (October 2013 to June 2014), MHP (May to November 2013), and service users (June 2013 to August 2014).

An advisory committee consisting of key decision makers from the MHSN was established to help with recruitment, validate instruments, and support data collection. The committee identified all MH managers from the three networks, who in turn identified professionals from network MH teams. Regarding eligibility, MHP and managers had to be working on MH teams with at least three professionals representing two or more disciplines, in public MH organizations. These criteria drew upon previous research on teamwork, while accounting for the intensity and multidisciplinary nature of professional involvement in complex MH cases [39].

Team managers and MHP were invited to the study by email or telephone. The self-administered questionnaires took about 60 minutes to complete. Service users were recruited through posters displayed at HSSCs or hospitals, or were referred by MHP. Participants had to be 18–70 years old with a DSM-V diagnosis. Those unable to participate and provide informed consent due to clinical instability, intellectual impairment, hospitalization, or involuntary treatment order, were excluded. Two 90-minute interviews were conducted with each participating service user at one-week intervals. The research ethics board of a MH university institute approved the study protocol. All participants signed a consent form.

Of 49 managers recruited, 45 participated for a 92% response rate. Mean age was 44, and 71% (n = 32) were female; 63% (n = 28) worked in specialized MH services and the others in primary care. No significant differences between respondent and non-respondent managers were found on gender (Pearson Chi-square = .966; df = 1; Fisher’s Exact Test 2-sided P = .663) or team type (Pearson Chi-square = 1.861; df = 2; Fisher’s Exact Test 2-sided P = .245).

Of 466 MHP recruited, 311 participated (67% response), including 108 (35%) medical professionals, 169 (54%) psychosocial professionals, and 34 (11%) general staff. Most professionals (n = 211; 68%) worked in specialized MH services, and were female (n = 218; 70%); mean age was 43. Average seniority in profession was 9 years. There were no significant differences between respondent and
Of 389 MH service users recruited, 327 participated (84% response). Their average age was 48, and gender was equally divided (male: n = 163; female: n = 164). Service users had 1.8 MH disorders on average, most commonly mood disorders (n = 144; 44%) and schizophrenia (n = 97; 30%). No significant differences emerged between respondents and non-respondents on age (ANOVA t test:

\[ \chi^2 (1, N = 466) = 0.03; p = 0.87 \]
\[ \chi^2 (1, N = 466) = 0.79; p = 0.68 \]
Regarding structures, variables extracted from documentation included government financial support for MH, and proportions of network inhabitants with low income. The manager questionnaire provided data on high emergency room (ER) users (\(\geq 4\) visits/yearly) [40]; use of standardized clinical procedures and tools, clinical approaches, integration strategies, and interactions with other teams or services, with all variables measured on five-point Likert scales and calculated as global scores. An additional variable, organizational culture, was assessed with the Organizational Culture Assessment Instrument (OCAI) [41]. This measure consists of six questions, with responses based on distributions of 100 points among four possible choices. A four-factor model for organizational culture was developed along two axes (flexibility vs. stability; internal focus vs. external focus), resulting in four cultural types: 1) clan/family (flexibility; internal focus); 2) adhocracy/entrepreneurial (flexibility; external focus); 3) market/rational (stability; external focus); and 4) hierarchical (stability, internal focus) [42].

Conceptual framework and instruments

The conceptual framework adapted from the Donabedian model guided data collection and analysis (Figure 1). Regarding structures, variables extracted from documentation included government financial support for MH, and proportions of network inhabitants with low income. The manager questionnaire provided data on high emergency room (ER) users (\(\geq 4\) visits/yearly) [40]; use of standardized clinical procedures and tools, clinical approaches, integration strategies, and interactions with other teams or services, with all variables measured on five-point Likert scales and calculated as global scores. An additional variable, organizational culture, was assessed with the Organizational Culture Assessment Instrument (OCAI) [41]. This measure consists of six questions, with responses based on distributions of 100 points among four possible choices. A four-factor model for organizational culture was developed along two axes (flexibility vs. stability; internal focus vs. external focus), resulting in four cultural types: 1) clan/family (flexibility; internal focus); 2) adhocracy/entrepreneurial (flexibility; external focus); 3) market/rational (stability; external focus); and 4) hierarchical (stability, internal focus) [42].

Regarding processes, variables from the professional questionnaire included individual characteristics (e.g. age, type of profession) and team processes. Team processes are mechanisms enabling or hindering the capacity for teamwork [43]. They include recovery-oriented services, team interdependence, team support, team autonomy, involvement in the decision-making process, work role performance, conflict between co-workers, team collaboration, and job satisfaction. All team processes were assessed with standardized tools, using seven-point Likert scales. Standardized tools were translated into French and validated. Table 2 presents details on the nine standardized tools, including the Cronbach’s alpha coefficients from their original validation and from validation of the French translation.

### Figure 1: Conceptual Framework

| 1 – Structures | 2 – Processes | 3 – Outcomes |
|---------------|--------------|--------------|
| **Documentation:** | **Professional Questionnaire: n = 311** | **Service user questionnaire: n = 327** |
| **Settings:** (n = 3) | **Individual characteristics:** | **Sociodemographic characteristics:** |
| Government financial support for mental health (MH) | Gender | Gender |
| Proportion of population with low income | Age | Age |
| Manager questionnaire: n = 45 | **Type of profession:** | **Clinical characteristics:** |
| Proportion of high emergency room (ER) users (\(\geq 4\) ER uses/yearly) | 1) medical (psychiatrists, general practitioners, nurses, pharmacists) | **number of MH diagnoses;** |
| **Organizational culture:** 1) clan, 2) entrepreneurial, 3) market, 4) hierarchical | 2) psychosocial (psychologists, social workers, human resource agents, case managers, occupational therapists, psycho-educators) | types of diagnosis: schizophrenia, bipolar disorders, personality disorders, depression, anxiety disorders, alcohol use disorders, drug use disorders; severity of needs |
| **Frequency in use of standardized clinical procedures and tools:** screening and assessment tools for MH disorders, screening and assessment tools for substance use disorders (SUDs), user satisfaction assessments, clinical protocols or best practice guidelines, clinical feedback procedures | 3) general (secretaries, technicians) | **Outcomes:** adequacy of help received, continuity of care, recovery, quality of life |
Outcomes assessed by service users included adequacy of help received, continuity of care, recovery, and QOL based on six standardized questionnaires. Table 3 presents these questionnaires, with Cronbach’s alpha coefficients for both the original validations and validation of the French translation. Sociodemographic characteristics (gender, age) were extracted from the service user questionnaire, and clinical characteristics (number of MH disorders, type e.g., schizophrenia, and severity of needs) from service user medical records (with consent).

### Analyses

Data were screened for missing values and outliers; missing values were replaced using multiple imputation methods (<5%). Statistical analyses included univariate and cluster analyses. Univariate analyses consisted of frequency distributions for categorical variables (numbers and percentages), and central tendency distributions for continuous variables (mean values and standard deviations). For the cluster analyses, participant typologies were calculated using two-step cluster analysis with SPSS version 24. The choice of variables for inclusion was driven by their importance based on the Donabedian model [10], and by significant differences in scores between variables for each of the three MHSN. Participant network (i.e. the MHSN to which each participant belonged) was the variable of interest. The Log-likelihood method was used to determine inter-subject distance. A classification of participants was developed using Schwartz Bayesian clustering criteria. The final number of categories of associated variables was set at 4, based on their respective contributions to inter-class homogeneity. Goodness-of-fit was estimated using the measure of cohesion and separation test, and found to be acceptable.

### Results

Table 4 presents a summary of the main results, with a complete description in Table 5.

Four categories emerged across the three service networks for structures, processes, and outcomes. A single outcome category: “service users with complex MH problems and negative outcomes” was common to all three MHSN. Network 1, the Metropolitan network, reported two categories for structures (“specialized MH teams”, “primary care MH teams”), two for processes (“senior medical professional”, “psychosocial professionals”), and two other categories for outcomes (“middle-age men with positive outcomes”, “older women with few MH problems”).
Table 3: Description of standardized instruments (Service user questionnaire).

| Measures and references | Description | Cronbach's Alpha Coefficients from original validation | Cronbach’s Alpha Coefficients from the original validation in French and reference |
|-------------------------|-------------|-------------------------------------------------------|--------------------------------------------------------------------------------|
| Drug Abuse Screening Test (DAST-20) [53] | 20 items; (2 point scale); Rating: 0 to 20; Higher = more negative | 0.92 | N/A |
| Alcohol Use Disorders Identification Test (AUDIT) [54] | 10 items; (5 point scale); Rating: 10 to 50; Higher = more negative | 0.80 | 0.87 [55] |
| Montreal Assessment of Need Questionnaire (MANQ) [56] | Seriousness of needs; 26 items; (11 point scale); Rating: 0 to 260; Higher = more negative | N/A | N/A |
| Alberta Continuity of Services Scale for Mental Health (ACSS-MH) [58] | 43 items; (5 point scale); Rating: 0 to 215; Higher = more positive | 0.78-0.92 | N/A |
| Recovery Assessment Scale (RAS) [59] | 41 items; (10 point scale); Rating: 0 to 410; Higher = more positive | 0.93 | 0.92 [60] |
| Satisfaction with Life Domains scale (SLDS) [61] | 20 items; (7 point scale); Rating: 0 to 140; Higher = more positive | 0.92 | 0.90 [62] |

Networks 2 (Urban) and 3 (Semi-urban) had one category in common for structures (“all teams”), two categories for processes (“psychosocial professionals”; network 2, “all professionals”; networks 3), and also shared a single service user category (“young service users with drug disorders”). The four categories are further described below in relation to the three networks.

**Network 1: The Metropolitan MHSN**

This network reflected considerable heterogeneity, with two categories showing opposing characteristics related to structures, processes and service outcomes. In terms of structures, all managers in this MHSN belonged to one of two categories (Table 4). The first category (“Metropolitan network: primary care teams”) utilized relatively fewer clinical approaches, procedures and tools than others. Scores on organizational culture were higher for clan culture than the other cultures; and frequency of interaction with other MH teams and services was lower.

By contrast, category 2 (“Metropolitan network: specialized MH teams”) had relatively high proportions of high ER service users, and used standardized clinical procedures and tools more frequently. Regarding scores on organizational cultures, market culture was highest, and clan culture lowest. Frequency in use of integration strategies was also higher for category 2, whereas frequency of interactions with other MH teams or services was low, as in category 1.

In terms of processes, two categories of MHP in this MHSN produced contrary results on a range of variables: category 1 (“Metropolitan network: psychosocial professionals”) had the lowest scores for all categories on recovery-oriented services, team interdependence, team support, team autonomy, involvement in the decision-making process, work role performance, team collaboration, and job satisfaction, while producing the highest score on conflict between co-workers.

By contrast, category 2 (“senior medical professionals”) had the highest scores on recovery-oriented services, team interdependence, team support, involvement in the decision-making process, work role performance, team collaboration and job satisfaction. Category 2 professionals ranked highest on seniority in profession, and also included MHP from the urban network.

In terms of service user outcomes, all service users in categories 1 and 2 came from this Metropolitan MHSN. Category 1 (“Metropolitan network: middle-age men with positive outcomes”) included exclusively males, 45 to 55 years old, with highest scores on alcohol use disorders, continuity of care, recovery, and QOL, but the lowest score on severity of needs. Category 2 (“older women with few MH problems”) consisted entirely of women, mainly 55 years old and older. This category had the lowest number of MH disorders, including personality disorders, and lowest scores on drug and alcohol use disorders and on adequacy of help received. Category 3 service users (“Metropolitan and other networks: service users with complex MH problems and negative outcomes”) also came mainly from the Metropolitan MHSN, but also included some from the two other MHSN described below. In category 3, 95% of service users had personality disorders, and high levels of other MH disorders; they had the highest scores of all the categories on severity of needs and adequacy of help received, but lowest scores on recovery and QOL, and the second lowest score on continuity of care.

**Network 2: The Urban MHSN**

In contrast to the metropolitan MHSN, the urban MSHN was more homogenous. Regarding structures, all managers from this MSHN belonged to category 3 labelled...
Table 4: Two-step cluster analyses of structures, processes and outcomes in three mental health (MH) service networks. Summary of the main results.

| Structures Manager characteristics | Category 1 (n = 10; 22.2%) | Category 2 (n = 9; 20.0%) | Category 3 (n = 19; 42.2%) | Category 4 (n = 7; 15.6%) |
|-----------------------------------|------------------------------|---------------------------|---------------------------|---------------------------|
| Settings                          | Metropolitan MH service network | Metropolitan MH service network | Urban MH service network | Semi-urban MH service network |
| Government financial support for MH per inhabitant | Highly positive | Highly positive | Positive | Highly negative |
| Proportion of population with low income | Highly negative | Highly negative | Highly positive | Positive |
| High emergency room (ER) users | Positive | Highly negative | Positive | Highly positive |
| Frequency in use of clinical approaches | Highly negative | Highly positive | Positive | Highly positive |
| Frequency in use of standardized clinical procedures and tools | Highly negative | Highly positive | Positive | Negative |
| Organizational culture (Mean, SD) | Clan culture | Highly positive | Highly negative | Negative |
| | Entrepreneurial culture | Positive | Negative | Highly positive |
| | Market culture | Highly negative | Positive | Negative |
| | Hierarchical culture | Highly negative | Highly positive | Positive |
| Frequency of interaction with other teams and services (Mean, SD) (rating: 0–5) | Positive | Positive | Highly negative | Negative |
| Frequency in use of integration strategies (Mean, SD) (rating: 0–5) | Positive | Highly positive | Highly negative | Negative |

| Team processes MH professional characteristics | Category 1 (n = 92; 29.6%) | Category 2 (n = 112; 36.0%) | Category 3 (n = 69; 22.2%) | Category 4 (n = 38; 12.2%) |
|-----------------------------------------------|------------------------------|---------------------------|---------------------------|---------------------------|
| Sites                                         | Mostly Metropolitan MH service network | Mainly Metropolitan MH service network | Exclusively Urban MH service network | Exclusively Semi-urban MH service network |
| Professions                                   | Mainly psychosocial professions | Mainly medical professions | Exclusively psychosocial professionals | Mainly psychosocial professions |
| Seniority in profession                       | Medium | Oldest | Old | Youngest |
| Recovery-Oriented Services                    | Highly negative | Highly positive | Positive | Negative |
| Team Interdependence                          | Highly negative | Highly positive | Negative | Medium |

(Contd.)
| Team Support | Highly negative | Highly positive | Negative | Positive |
|--------------|----------------|----------------|---------|----------|
| Team Autonomy | Highly negative | Positive | Medium | Highly positive |
| Involvement in the Decision-Making Process | Highly negative | Highly positive | Negative | Negative |
| Work Role Performance | Highly negative | Highly positive | Positive | Medium |
| Conflict Between Co-Workers | Highly negative | Positive | Highly positive | Positive |
| Team Collaboration | Highly negative | Highly positive | Medium | Positive |
| Job Satisfaction | Highly negative | Highly positive | Medium | Positive |
| Outcomes | Category 1 (n = 84; 25.7%) | “Metropolitan network: middle-age men with positive outcomes” | Category 2 (n = 66; 20.1%) | “Metropolitan network: older women with few MH problems” |
| Service user characteristics | Category 3 (n = 88; 26.9%) | “Metropolitan and other networks: service users with complex MH problems and negative outcomes” | Category 4 (n = 89; 27.2%) | “Urban and semi-urban networks: young service users with drug disorders” |
| Sites | Exclusively Metropolitan MH service network | From the three networks | Urban and semi-urban MH service networks |
| Gender | Exclusively male | Mainly female | Mixed |
| Age categories | Mainly 45–54 | Mainly 55 and over | Mixed |
| Number of MH disorders | Positive | Highly positive | Highly positive | Positive |
| Personality disorders | Highly positive | Highly positive | Highly negative | Positive |
| Drug Abuse Screening Test (DAST) | Positive | Highly positive | Negative | Positive |
| Alcohol Use Disorders Identification Test (AUDIT) | Highly negative | Highly positive | Negative | Positive |
| Severity of needs | Highly positive | Positive | Highly negative | Negative |
| Adequacy of help received | Negative | Highly negative | Highly positive | Positive |
| Alberta Continuity of Services Scale (ACSS) for Mental Health | Highly positive | Negative | Negative | Negative |
| Recovery Self-Assessment Scale (RSA) | Highly positive | Negative | Highly negative | Medium |
| Quality of life (Satisfaction with Life Domains Scale – SLDS) | Highly positive | Positive | Highly negative | Negative |
Table 5: Two-step cluster analyses of structures, processes and outcomes in three mental health (MH) service networks.

| Structures | Manager characteristics | Category 1 (n = 10; 22.2%) | Category 2 (n = 9; 20.0%) | Category 3 (n = 19; 42.2%) | Category 4 (n = 7; 15.6%) | Combined (n = 45; 10%) |
|------------|-------------------------|-----------------------------|---------------------------|---------------------------|------------------------|----------------------|
|            |                         | Metropolitan network: primary care teams | Metropolitan network: specialized MH teams | Urban network: all teams | Semi-urban network: all teams |                      |
| Settings (n., %) | Metropolitan MH service network | 10 | 100% | 9 | 100% | 0 | 0.0% | 0 | 0.0% | 19 | 100% |
|             | Urban MH service network | 0 | 0.0% | 0 | 0.0% | 19 | 100% | 0 | 0.0% | 19 | 100% |
|             | Semi-urban MH service network | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 7 | 100.0% | 7 | 100% |
| Government financial support for MH per inhabitant | Metropolitan MH service network | 125.8 CAN$ | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 7 | 100.0% | 7 | 100% |
|             | Urban MH service network | 0 | 0.0% | 0 | 0.0% | 19 | 100% | 0 | 0.0% | 19 | 100% |
|             | Semi-urban MH service network | 10 | 100% | 9 | 100% | 0 | 0.0% | 0 | 0.0% | 19 | 100% |
| Proportion of population with low income (n., %) | Metropolitan MH service network | 21.5% | 10 | 52.6% | 9 | 47.4% | 0 | 0.0% | 0 | 0.0% | 19 | 100% |
|             | Urban MH service network | 10.0% | 0 | 0.0% | 0 | 0.0% | 0 | 0.0% | 7 | 100.0% | 7 | 100% |
|             | Semi-urban MH service network | <5.0% | 0 | 0.0% | 0 | 0.0% | 19 | 100.0% | 0 | 0.0% | 19 | 100% |
| High emergency room (ER) users (%), SD | Metropolitan MH service network | 20.0 | 27.1 | 39.3 | 27.5 | 27.8 | 26.4 | 12.1 | 15.3 | 25.9 | 26.1 |
|             | Urban MH service network | 5.5 | 17 | 6.1 | 1.8 | 6.1 | 1.8 | 6.4 | 2.4 | 6.0 | 1.9 |
|             | Semi-urban MH service network | 24.9 | 4.3 | 29.4 | 5.7 | 28.4 | 5.5 | 25.4 | 5.5 | 27.4 | 5.5 |
| Organizational culture (Mean, SD) (rating: 0–600) | Clan culture | 298.8 | 37.3 | 163.1 | 46.5 | 177.4 | 63.7 | 187.7 | 59.3 | 203.1 | 74.5 |
|            | Entrepreneurial culture | 111.6 | 31.3 | 122.2 | 27.9 | 113.8 | 34.5 | 124.6 | 53.2 | 116.7 | 35.2 |
|            | Market culture | 66.1 | 19.3 | 148.8 | 21.0 | 117.9 | 38.5 | 89.1 | 46.0 | 108.1 | 43.5 |
|            | Hierarchical culture | 131.8 | 33.5 | 196.0 | 71.1 | 198.4 | 47.0 | 213.9 | 87.2 | 185.5 | 63.0 |
| Frequency of interaction with other teams and services (Mean, SD) (rating: 0–5) | Metropolitan MH service network | 1.9 | 0.6 | 1.9 | 0.5 | 2.3 | 0.8 | 1.9 | 0.5 | 2.1 | 0.6 |
|             | Urban MH service network | 3.0 | 0.6 | 3.1 | 0.6 | 2.6 | 0.5 | 2.7 | 0.6 | 2.8 | 0.6 |
|             | Semi-urban MH service network | (Contd.) |
| Team processes | Category 1 (n = 92; 29.6%) | Category 2 (n = 112; 36.0%) | Category 3 (n = 69; 22.2%) | Category 4 (n = 38; 12.2%) | Combined (n = 311; 100%) |
|----------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
|                | Metropolitan MH service network: psychosocial professionals | Metropolitan and urban networks: senior medical professionals | Urban network: psychosocial professionals | Semi-urban network: all professionals | n | Mean | %/SD | n | Mean | %/SD | n | Mean | %/SD | n | Mean | %/SD |
| Sites (n, %)   | Metropolitan MH service network | 85 | 92.4% | 69 | 61.6% | 0 | 0.0% | 0 | 0.0% | 154 | 100% |
|                | Urban MH service network | 2 | 2.2% | 43 | 38.4% | 69 | 100% | 0 | 0.0% | 114 | 100% |
|                | Semi-urban MH service network | 5 | 5.4% | 0 | 0.0% | 0 | 0.0% | 38 | 100% | 43 | 100% |
| Professions (n, %) | Medical professions | 35 | 38.0% | 65 | 58.0% | 0 | 0.0% | 8 | 21.1% | 108 | 100% |
|                | Psychosocial professions | 53 | 57.6% | 26 | 23.2% | 69 | 100% | 21 | 55.3% | 169 | 100% |
|                | General professions | 4 | 4.3% | 21 | 18.8% | 0 | 0.0% | 9 | 23.7% | 34 | 100% |
| Seniority in profession (Mean, SD) | 8.3 | 10.1 | 10.4 | 11.4 | 9.5 | 11.4 | 5.4 | 7.8 | 8.9 | 10.7 |
| Recovery-Oriented Services (Mean, SD) (Rating: 0–7) | 4.6 | 0.6 | 5.4 | 0.6 | 5.2 | 0.5 | 4.9 | 0.6 | 5.1 | 0.7 |
| Team Interdependence (Mean, SD) (Rating: 0–21) | 12.3 | 3.0 | 15.1 | 2.7 | 13.3 | 3.1 | 13.6 | 2.9 | 13.7 | 3.1 |
| Team Support (Mean, SD) (Rating: 0–7) | 4.3 | 1.1 | 5.4 | 0.9 | 4.5 | 1.2 | 5.1 | 1.1 | 4.8 | 1.2 |
| Team Autonomy (Mean, SD) (Rating: 0–7) | 4.4 | 1.3 | 5.2 | 1.1 | 4.8 | 1.3 | 5.6 | 1.1 | 4.9 | 1.2 |
| Involvement in the Decision-Making Process (Mean, SD) (Rating: 0–7) | 4.3 | 1.4 | 5.6 | 1.0 | 4.7 | 1.4 | 5.6 | 0.9 | 5.0 | 1.3 |
| Work Role Performance (Mean, SD) (Rating: 0–42) | 32.9 | 3.0 | 36.3 | 2.8 | 34.0 | 3.1 | 34.9 | 3.0 | 34.6 | 3.2 |
| Conflict Between Co-Workers (Mean, SD) (Rating: 0–21) | 10.3 | 3.7 | 8.4 | 2.4 | 8.9 | 2.5 | 7.6 | 1.5 | 9.0 | 2.9 |
| Team Collaboration (Mean, SD) (Rating: 0–28) | 16.3 | 3.1 | 21.4 | 3.1 | 19.2 | 3.2 | 20.9 | 3.6 | 19.3 | 3.8 |
| Job Satisfaction (Mean, SD) (Rating: 0–35) | 22.5 | 3.1 | 26.2 | 3.3 | 25.0 | 3.3 | 26.0 | 3.1 | 24.8 | 3.6 |

(Contd.)
| Outcomes                          | Category 1 (n = 84; 25.7%) | Category 2 (n = 66; 20.1%) | Category 3 (n = 88; 26.9%) | Category 4 (n = 89; 27.2%) | Combined (n = 327; 100%) |
|----------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------|
| Service user characteristics     |                             |                             |                             |                             |                           |
| Sites (n., %)                    | Metropolitan MH service network | 84 100%                     | 66 100%                     | 43 48.9%                    | 0 0.0%                    | 193 100%                  |
|                                  | Urban MH service network     | 0 0.0%                      | 0 0.0%                      | 31 35.2%                    | 45 50.6%                  | 76 100%                   |
|                                  | Semi-urban MH service network | 0 0.0%                      | 0 0.0%                      | 14 15.9%                    | 44 49.4%                  | 58 100%                   |
| Gender (n., %)                   | Female                       | 0 0.0%                      | 66 100%                     | 53 60.3%                    | 45 50.6%                  | 164 100%                  |
|                                  | Male                         | 84 100%                     | 0 0.0%                      | 35 39.8%                    | 44 49.4%                  | 163 100%                  |
| Age categories (n., %)           | 18–44                        | 19 22.6%                    | 15 22.7%                    | 28 31.8%                    | 50 56.2%                  | 112 100%                  |
|                                  | 45–54                        | 36 42.9%                    | 20 30.3%                    | 31 35.2%                    | 20 22.5%                  | 107 100%                  |
|                                  | 55 and over                  | 29 34.5%                    | 31 47.0%                    | 29 33.0%                    | 19 21.3%                  | 108 100%                  |
| Number of MH disorders (Mean, SD) | 1.5 0.8                     | 1.4 0.7                     | 2.7 2.0                     | 1.6 1.1                     | 1.1 1.1                   |                           |
| Personality disorders (n., %)    | 0 0.0%                       | 0 0.0%                      | 88 100%                     | 5 5.4%                      | 93 100%                   |                           |
| Drug Abuse Screening Test (DAST) (Mean, SD; (rating: 1–5) | 2.4 1.7                     | 2.2 1.4                     | 2.4 1.6                     | 3.9 3.9                     | 2.8 2.5                   |                           |
| Alcohol Use Disorders Identification Test (AUDIT) (Mean, SD; (rating: 0-10) | 6.2 4.8                     | 3.9 3.9                     | 5.6 8.0                     | 4.6 7.3                     | 5.2 6.4                   |                           |
| Severity of needs (Mean, SD; (rating: 0–260) | 38.9 26.5                   | 39.3 24.5                   | 60.0 33.0                   | 53.4 35.2                   | 48.6 31.7                 |                           |
| Adequacy of help received (Mean, SD; (rating: 0–520) | 64.6 51.8                   | 51.0 40.2                   | 86.5 52.0                   | 74.8 59.1                   | 70.5 53.2                 |                           |
| Alberta Continuity of Services Scale (ACSS) for Mental Health (Mean, SD) (rating: 0–215) | 136.3 17.5                   | 131.5 14.5                  | 130.8 16.1                  | 130.6 15.4                  | 132.3 16.1                |                           |
| Recovery Self Assessment Scale (RSA) (Mean, SD) (rating: 0–410) | 168.2 25.1                   | 163.6 17.7                  | 162.3 20.2                  | 164.2 28.0                  | 164.6 23.4                |                           |
| Quality of life (Satisfaction with Life Domains Scale – SLDS (Mean, SD) (rating: 0–140) | 102.0 16.3                   | 99.2 17.8                   | 90.9 20.2                   | 95.3 18.7                   | 96.6 18.8                 |                           |
“Urban network: all teams” (Table 4), which registered the lowest proportion of low-income service users. The hierarchical culture was predominant. This category was also notable for the highest frequency of interaction with other teams or services, and lowest score on frequency in use of integration strategies.

In terms of team processes, MHP from the urban MHSN belonged primarily to category 3 labelled “Urban network: psychosocial professionals”. Category 3 had the second lowest scores on team interdependence, team support, team autonomy, involvement in the decision-making process, work role performance, team collaboration, and job satisfaction, but the second to highest score on conflict between co-workers. The remaining MHP were included among the “Metropolitan and Urban networks: service users with complex MH problems and negative outcomes”), described previously, and in category 4, which included the greatest proportion of service users under age 45, with the highest score on drug use disorders. Category 4 also included services users from the Semi-urban MHSN. This category was labelled “Urban and Semi-urban networks: young service users with drug disorders”.

**Network 3: The Semi-urban MHSN**

This network was also more homogenous than the metropolitan MHSN. Regarding structures, all managers belonged to category 4 labelled “Semi-urban network: all teams” (Table 4), in which financial resources were most scarce, but managers made the most use of clinical approaches, and had the fewest high ER users. Category 4 also had the highest scores on the entrepreneurial and hierarchical cultures, but the lowest score on frequency of interaction with other MH teams or services.

Regarding processes, almost all professionals in this network belonged to category 4, and seniority in profession was lowest. Category 4 had the highest scores on team autonomy and involvement in the decision-making process, and the lowest score on conflict between co-workers. This category was labelled “Semi-urban network: all professionals”. Most service users from the semi-urban service network were included among “Urban and Semi-urban networks: young service users with drug disorders”, and the others among “Metropolitan and other networks: service users with complex MH problems and negative outcomes”, both of which were previously described.

**Discussion**

This study partially confirmed our hypothesis that structures would relate to better team processes, and to more positive outcomes for service users. Although structures seemed to influence team processes in these MHSNs, links between team processes and service user outcomes were harder to establish. The establishment of service user categories in terms of: “Metropolitan network: middle-age men with positive outcomes” versus “Metropolitan and other networks: service users with complex MH problems and negative outcomes” demonstrates that service user outcomes were largely associated with clinical characteristics, regardless of network configurations. One explanation may be that structures and processes were quite distal to outcomes [63]. According to Kilbourne et al. [63], as compared with other health sectors, quality assessments in MH care tend to be weaker due to multiple structural barriers such as lack of professional training and support and cultural obstacles to integrated care, contributing to poor outcomes. Moreover, a recent review on outcomes stemming from multidisciplinary collaboration in primary health care found that the relationship between processes and outcomes was difficult to determine and, contrary to investigations on structures, processes were often poorly described in studies [64]. In Quebec, the 2005 MH Action Plan also provided few descriptions of the operational mechanisms (processes) underlying the reform, as compared with descriptions of new structures and services and their implementation, which were fully described [65].

The heterogeneity revealed within the metropolitan MHSN, which brought together two categories with very different characteristics in terms of structures and processes, was an interesting finding. Some studies also found that integrated care was more difficult to implement in large MHSN, especially in those with a psychiatric hospital, as was the case for the Metropolitan MHSN in this study. This type of networks tended to operate in silo [66–68]. Concerning structures, the results for category 1 within the metropolitan MHSN described the situation of new MH primary care teams that were created in HSSC over the course of the MH reform; whereas category 2 reflected that of specialized MH teams. The capacity of primary care services to assess and treat MH disorders (MHD) is frequently viewed as limited [69–72], which may explain the less frequent use of clinical procedures, tools, and approaches among “Metropolitan network: primary care teams” (category 1). The clan culture, which links MHP to family members while focusing less on standardization and best practices, is viewed as typical of primary care teams [42]. By contrast, “Metropolitan network: specialized MH teams” (category 2) reflected a better mix of organizational cultures, and possessed strengths emanating from each: stability and efficiency (hierarchical culture); competitiveness and inter-organizational interaction (market culture); flexibility, innovation and external focus (entrepreneurial culture) [73]. According to Tietschert et al. [22], a good mix of organizational cultures is desirable to produce a higher patient-perceived level of integrated care.

Concerning structures, the exclusive distribution of managers from the Semi-urban MHSN within a single category (category 4) reflected the concentration of both primary care and specialized MH teams within a single institution, enhancing a shared vision and practices while promoting integrated care. The entrepreneurial culture, more predominant in the Semi-urban MHSN, suggested better adaptive ability among MH teams [73]. Tietschert et al. [22] found that the entrepreneurial culture was strongly associated with a high level of patient-perceived...
integrated care. The concentration of all managers from the Urban MHSN within a single category (category 3) is more difficult to explain, since primary care teams were located in a HSSC and specialized services in a MH university institute, similar to the Metropolitan MHSN. It is possible that the primary care and specialized MH teams had successfully created an integrated vision and practices, which are usually reported as positively associated with better quality and continuity of care [32]. The accumulation of high ER users in the Urban MHSN might explain the frequent use of clinical procedures, tools and approaches. The highest frequency of interaction with other teams or services in the Urban MHSN combined with the lowest scores on use of integration strategies in this network seemed contradictory. One explanation may be that the long-term collaboration among MHP from different teams and organizations in the Urban MHSN had eliminated the need to formalize these arrangements. Formalized integration mechanisms are more pressing when few traditions around collaboration exist, and would be needed to insure collaboration in a reform context [74].

Concerning team processes, the concentration of high scores among the Metropolitan and Urban networks: senior medical professionals (category 2) and low scores among “Metropolitan network: psychosocial professionals” (category 1) was logical, as these variables are often strongly related even though they measure distinct concepts. Previous studies have identified associations between job satisfaction and team collaboration [75], involvement in the decision-making process [76], team autonomy [77], recovery-oriented services [78] and lower conflict between co-workers [76]. Associations were also found between team interdependence, team support and work role performance [17, 79].

The low team process scores identified among “Metropolitan network: psychosocial professionals” suggests that these professionals, who were transferred from specialized MH services to the newly formed primary care teams in this network, may have experienced adaptation problems in their new environment. According to a recent literature review, professionals involved in joint practice often have difficulties in adapting their usual work methods [80]. Better overall team process scores were found instead among the “Metropolitan and Urban networks: senior medical professionals”, which was also the only category with mainly medical professionals. Studies have identified greater satisfaction with teamwork among physicians as compared with professionals lower down in the team hierarchy (e.g., nurses, social workers), who are more likely to burn out or quit their jobs [75, 81–83]. Moreover, the hierarchical culture predominated in “Metropolitan network: specialized MH teams”, suggesting clear role definition in these teams, as well as stability, and greater capacity among team members to control their jobs [84] and work effectively. Experienced professionals would also enjoy mutual familiarity, another facilitator of positive team processes (e.g., team collaboration, team interdependence, job satisfaction, and less team conflict) [85].

Concerning processes, almost all professionals from the Semi-urban MHSN were concentrated in a single category (category 4), and had the least seniority. Younger professionals, who tend to be more dynamic and open to innovation, characteristic of the entrepreneurial culture [42], were predominant in this network. High scores on team autonomy and involvement in the decision-making process for the Semi-urban MHSN may also have reflected their working conditions in a remote area with relatively few resources [86]. A more proactive and autonomous approach is another feature associated with the entrepreneurial culture. Finally, the profile for MHP in the “Urban network: psychosocial professionals” was quite similar to that for “Metropolitan network: psychosocial professionals”, which may explain their low team process scores.

Concerning service user outcomes, higher QOL and recovery scores in the “Metropolitan network: middle-age men with positive outcomes” (category 1) likely resulted from the greater availability and continuity of services in this network. Strong associations between quality of life, recovery and continuity of care were previously identified [57, 58, 87]. The substantial financial resources available to the Metropolitan MHSN would also have allowed for better follow-up of “Metropolitan network: middle-age men with positive outcomes”, who were mainly affected by alcohol use disorders requiring ongoing and coordinated help from various resources such as MH services, SUD rehabilitation centers, primary care services, and support groups like Alcoholics Anonymous.

Outcomes were also positive for the “Metropolitan network: older women with few MH problems” (category 2), except on adequacy of help received. Service users with less severe conditions may have been disadvantaged, e.g., in terms of wait times for services, as complex cases usually receive priority care. Moreover, MH needs tended to be unmet among older service users [88, 89], particularly those related to co-occurring MH and physical health disorders [88].

The widespread negative outcomes described for “Metropolitan and other networks: service users with complex MH problems and negative outcomes” (category 3) seem to reflect the complexity of MH profiles in this category, including personality disorders and higher risk of self-harm or suicide ideation, which presented challenges for both primary care and specialized MH service teams [90]. The integration of several sectors (including health and social services, but also employment and education) is often necessary in order to meet the needs of this vulnerable population [80]. Service users with personality disorders were also high users of ER and other services and were often dissatisfied with the adequacy of help received [91]. Severity of needs, previously identified as associated with lower QOL [92–95] and lower recovery [96–99], was highest among “Metropolitan and other networks: service users with complex MH problems and negative outcomes”, even though they reported greater adequacy of help received. These results seem contradictory, but may have been offset by the tendency of MH services to prioritize treatment and follow-up for service users with more severe, complex or co-occurring disorders [100–102].
Finally, results identified “Urban and Semi-urban networks: young service users with drug disorders” (category 4). According to previous research, these service users are more likely to drop out prematurely from services [103], which may explain their lower service continuity scores in this study. Another characteristic of this group is their greater reliance on self-help rather than help-seeking [104]. Interestingly, service users from the Semi-urban MHSN category tended to be followed by MHP with lower professional seniority (team processes). Yet these professionals, being younger, may have felt more affinity with younger service users, possibly facilitating professional-service user relationships.

Limitations
This study had limitations that should be addressed. First, cluster analyses necessarily use a limited number of variables. Second, as most service users used multiple services, it was not possible to clearly associate each service user group with a specific network or category in terms of structures and processes. Third, the use of cross-sectional data precluded an interpretation of results for the four categories over time. Finally, major reforms, as in the case of Quebec, take time to implement fully and for positive outcomes to become apparent.

Conclusions
This study was innovative in attempting to identify categories of related variables associated with structures, team processes and service user outcomes in three Quebec MHSN using cluster analyses. The main contribution of the study was to identify service user outcomes that were largely associated with clinical characteristics, regardless of network configurations with different structures and team processes. All networks included service users with complex MH profiles, including multiple MHD such as personality disorders, which contributed to negative outcomes. Another important finding of this study was the greater heterogeneity identified in the Metropolitan MHSN in terms of structures and team processes, as compared with the Urban and Semi-urban MHSN, which suggests that implementation of the MH reform was relatively more difficult in this type of network. More particularly, primary care teams in the Metropolitan MHSN, which mainly consisted of psychosocial professionals, made less use of clinical procedures, tools, and approaches than did specialized MH teams, which may have affected their capacity to evaluate and treat service users with MHD. The results also suggested that a good balance of organizational cultures was associated with better team processes. This study also revealed that more positive team processes were associated with greater presence of medical and senior professionals among team members, which was more characteristic of specialized MH service teams.

Overall, this study points to the need for better support to psychosocial professionals on the part of MH decision makers. Shared-care initiatives should be promoted, and additional resources allocated to reinforce MH services in primary care, including follow-up of younger service users with SUD, and most especially high ER users with complex clinical profiles. Extended implementation of best-practices and integration strategies in all service networks, especially in primary care teams, positively influenced team processes scores, and other outcomes, which implies that these measures should be promoted. Finally, this study supports greater promotion of organizational cultures focused on innovation and results-orientation, as well as greater inter-organizational interaction.

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Competing Interests
The authors have no competing interests to declare.

References
1. Breton M, Wankah P, Guillette M, Couturier Y, Belzile L, Gagnon D, et al. Multiple Perspectives Analysis of the Implementation of an Integrated Care Model for Older Adults in Quebec. International Journal of Integrated Care, 2019; 19(4): 6. DOI: https://doi.org/10.5334/ijic.4634
2. Cash-Gibson L, Tigova O, Alonso A, Binkley G, Rosenmoller M. Project INTEGRATE: Developing a Framework to Guide Design, Implementation and Evaluation of People-centred Integrated Care Processes. International Journal of Integrated Care, 2019; 19(1): 3. DOI: https://doi.org/10.5334/ijic.4178
3. Lewis S, Damarell RA, Tieman JJ, Trenergy C. Finding the Integrated Care Evidence Base in PubMed and Beyond: A Bibliometric Study of the Challenges. International Journal of Integrated Care, 2018; 18(3): 11. DOI: https://doi.org/10.5334/ijic.3975
4. Read DMY, Dalton H, Booth A, Goodwin N, Hendry A, Perkins D. Using the Project INTEGRATE Framework in Practice in Central Coast, Australia. International Journal of Integrated Care, 2019; 19(2): 1–12. DOI: https://doi.org/10.5334/ijic.4624
5. Middelton L, Rea H, Pledger M, Cumming J. A realist evaluation of local networks designed to achieve more integrated care. International Journal of Integrated Care, 2019; 19(2): 4. DOI: https://doi.org/10.5334/ijic.4183
6. Hogan M. Mental health reform under policy mainstreaming: needed, but uncertain. Epidemiology and Psychiatric Sciences, 2014; 23(1): 11–6. DOI: https://doi.org/10.1017/S2045796013000632
7. Ministère de la Santé et des Services sociaux. Plan d’action en santé mentale 2005–2010 — La force des liens. Québec: Ministère de la Santé et des Services sociaux; 2005.
8. Ministère de la Santé et des Services sociaux. Projet de Loi 83. Loi modifiant la Loi sur les services de santé et les services sociaux et d’autres dispositions législatives. Québec: Ministère de la Santé et des Services sociaux; 2005.
9. Gonzalez-Ortiz LG, Calciolari S, Goodwin N, Stein V. The Core Dimensions of Integrated Care: A Literature Review to Support the Development of a Comprehensive Framework for Implementing Integrated Care. *International Journal of Integrated Care*, 2018; 18(3): 10. DOI: https://doi.org/10.5334/ijic.4198

10. Donabedian A. Aspects of Medical Care Administration: Specifying Requirements for Health Care. *Cambridge Harvard University Press for the Commonwealth Fund*; 1973.

11. Bainbridge D, Brazil K, Krueger P, Ploeg J, Taniguchi A. A proposed systems approach to the evaluation of integrated palliative care. *BMC Palliative Care*, 2010; 9: 8. DOI: https://doi.org/10.1186/1472-684X-9-8

12. Burns LR. Medical organization structures that promote quality and efficiency: research and future considerations. *Quality Management in Health Care*, 1995; 3(4): 10–8. DOI: https://doi.org/10.1097/00019514-199503040-00002

13. Ravelli DP, Buwalda VJ, Slooff CJ, Schrijvers AJ, van Engelnd H. Do integrated mental healthcare organisations facilitate process quality in the treatment of people with schizophrenia and related psychoses? *International Journal of Integrated Care*, 2003; 3:e17. DOI: https://doi.org/10.5334/ijic.74

14. Deneckere S, Robyns N, Vanhaecht K, Euwema M, Panella M, Lodewijckx C, et al. Indicators for follow-up of multidisciplinary teamwork in care processes: results of an international expert panel. *Evaluation & the Health Professions*, 2011; 34(3): 258–77. DOI: https://doi.org/10.1017/S014574121000001X

15. Korner M, Lippenberger C, Becker S, Reichler L, Muller C, Zimmermann L, et al. Knowledge integration, teamwork and performance in health care. *Journal of Health Organization and Management*, 2016; 30(2): 227–43. DOI: https://doi.org/10.1108/JHOM-12-2014-0217

16. Sorensen M, Stenborg U, Garnweidner-Holme L. A Scoping Review of Facilitators of Multi-Professional Collaboration in Primary Care. *International Journal of Integrated Care*, 2018; 18(3): 13. DOI: https://doi.org/10.5334/ijic.3959

17. Griffin MA, Neal A, Parker SK. A new model of work role performance: positive behavior in uncertain and interdependent contexts. *Academy of Management Journal*, 2007; 50(2): 327–47. DOI: https://doi.org/10.5465/amj.2007.24634438

18. Salas E, Burke CS, Cannon-Bowers JA. Teamwork: emerging principles. *International Journal of Management Reviews*, 2000; 2(4): 339–56. DOI: https://doi.org/10.1111/1468-2370.00046

19. Langfred CW, Moje NA. Effects of task autonomy on performance: an extended model considering motivational, informational, and structural mechanisms. *Journal of Applied Psychology*, 2004; 89(6): 934–45. DOI: https://doi.org/10.1037/0021-9010.89.6.934

20. Touati N, Rodriguez C, Paquette MA, Maillet L, Denis JL. Professional Role Identity: At the Heart of Medical Collaboration Across Organisational Boundaries. *International Journal of Integrated Care*, 2019; 19(2): 1. DOI: https://doi.org/10.5334/ijic.4184

21. Chiocchio F, Grenier S, O’Neill TA, Savaria K, Williams JD. The effects of collaboration on performance: A multilevel validation in project teams. *International Journal of Project Organisation and Management*, 2012; 4(1): 1–37. DOI: https://doi.org/10.1504/IJPOM.2012.045362

22. Tietschert MV, Angeli F, van Raak AJA, Clark J, Singer SJ, Ruwaard D. Can Organisational Culture of Teams Be a Lever for Integrating Care? An Exploratory Study. *International Journal of integrated care*, 2019; 19(4): 10. DOI: https://doi.org/10.5334/ijic.4681

23. Busetto L, Luijkkx KG, Vrijhoef HJM. Development of the COMIC Model for the comprehensive evaluation of integrated care interventions. *International Journal of Care Coordination*, 2016; 19(1–2): 47–58. DOI: https://doi.org/10.11177/2053434516661700

24. Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O. Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Quarterly*, 2004; 82(4): 581–629. DOI: https://doi.org/10.1111/j.0887-378X.2004.00325.x

25. Auschra C. Barriers to the Integration of Care in Inter-Organisational Settings: A Literature Review. *International Journal of Integrated Care*, 2018; 18(1): 5. DOI: https://doi.org/10.5334/ijic.3068

26. Harris MF, Advocat J, Crabtree BF, Levesque JF, Miller WL, Gunn JM, et al. Interprofessional teamwork innovations for primary health care practices and practitioners: evidence from a comparison of reform in three countries. *Journal of Multidisciplinary Healthcare*, 2016; 9: 35–46. DOI: https://doi.org/10.2147/JMDH.S97371

27. Goh TT, Eccles MP, Steen N. Factors predicting team climate, and its relationship with quality of care in general practice. *BMC Health Services Research*, 2009; 9: 138. DOI: https://doi.org/10.1186/1472-6963-9-138

28. Bosch M, Faber MJ, Crujsberg J, Voerman GE, Leatherman S, Grol RP, et al. Review article: Effectiveness of patient care teams and the role of clinical expertise and coordination: a literature review. *Medical Care Research and Review*, 2009; 66(Suppl): 55–35S. DOI: https://doi.org/10.1177/1077558709343295

29. Clements D, Dault M, Priest A. Effective teamwork in healthcare: research and reality. *Healthcare Papers*, 2007; 7 Spec No: 26–34. DOI: https://doi.org/10.12927/hcpap.2013.18669

30. Provan KG, Milward HB. A preliminary theory of interorganizational network effectiveness: A comparative study of four community mental health systems. *Administrative Science Quarterly*, 1995; 40: 1–33. DOI: https://doi.org/10.2307/2393698

31. Lorant V, Nazroo J, Nicaise P, Title107 Study Group. Optimal Network for Patients with Severe
Mental Illness: A Social Network Analysis. *Administration and Policy in Mental Health*, 2017; 44(6): 877–887. DOI: https://doi.org/10.1007/s10488-017-0800-7

32. Fitzpatrick SJ, Perkins D, Handley T, Brown D, Luland T, Corvan E. Coordinating Mental and Physical Health Care in Rural Australia: An Integrated Model for Primary Care Settings. *International Journal of Integrated Care*, 2018; 18(2): 19. DOI: https://doi.org/10.5334/ijic.3943

33. Herman SE, Mowbray CT. Client typology based on functioning level assessments: utility for service planning and monitoring. *Journal of Mental Health Administration*, 1991; 18(2): 101–15. DOI: https://doi.org/10.1007/BF02518604

34. Guzzetta F, Miglio R, Santone G, Picardi A, Norcio B, Bracco R, et al. First-time admitted psychiatric inpatients in Italy: clinical characteristics and reasons contributing to admission: findings from a national survey. *Psychiatry Research*, 2010; 176(1): 62–8. DOI: https://doi.org/10.1016/j.psychres.2008.11.005

35. Fisher S, Stevens RF. Subgroups of frequent users of an inpatient mental health program at a community hospital in Canada. *Psychiatric Services*, 1999; 50(2): 244–7. DOI: https://doi.org/10.1176/ps.50.2.2444

36. Rocca P, Montemagni C, Mingrone C, Crivelli B, Sigaudo M, Bogetto F. A cluster-analytical approach toward real-world outcome in outpatients with stable schizophrenia. *European Psychiatry*, 2016; 32: 48–54. DOI: https://doi.org/10.1016/j.eurpsy.2015.11.007

37. Huynh C, Tremblay J, Fleury MJ. Typologies of Individuals Attending an Addiction Rehabilitation Center Based on Diagnosis of Mental Disorders. *Journal of Substance Abuse Treatment*, 2016; 71: 68–78. DOI: https://doi.org/10.1016/j.jsat.2016.09.007

38. Fleury MJ, Grenier G, Banvita JM, Perreault M, Caron J. Typology of adults diagnosed with mental disorders based on socio-demographic and clinical and service use characteristics. *BMC Psychiatry*, 2011; 11: 67. DOI: https://doi.org/10.1186/1471-244X-11-67

39. Cohen SG, Bailey DE. What makes teams work: Group effectiveness research from the shop floor to the executive suite. *Journal of Management*, 1997; 23(3): 239–90. DOI: https://doi.org/10.1177/014920639702300303

40. Doupe MB, Palatnick W, Day S, Chateau D, Soodeen R-A, Burchill C, et al. Frequent Users of Emergency Departments: Developing Standard Definitions and Defining Prominent Risk Factors. *Annals of Emergency Medicine*, 2012; 60(1): 24–32. DOI: https://doi.org/10.1016/j.annemergmed.2011.11.036

41. Cameron KS, Quinn RE. Diagnosing and changing organizational culture based on the Competing Values Framework. Revised edition. San Francisco: Jossey-Bass; 2006.

42. Scammon DL, Tabler J, Brunisholz K, Gren LH, Kim J, Tomoeba-Cotisel A, et al. Organizational culture associated with provider satisfaction. *Journal of the American Board of Family Medicine*, 2014; 27(2): 219–28. DOI: https://doi.org/10.3122/jabfm.2014.02.120338

43. Kozlowski SWJ, Bell B. Work groups and teams in organizations. In: Weiner IB, Schmidt NW and Highhouse S (eds.), *Handbook of Psychology. Industrial and Organizational Psychology*. London: Wiley; 2003. pp. 333–75. DOI: https://doi.org/10.1002/0471264385.we1214

44. O’Connell M, Tondora J, Croog G, Evans A, Davidson L. From rhetoric to routine; assessing perceptions of recovery-oriented practices in a state mental health addiction system. *Psychiatric Rehabilitation Journal*, 2005; 28(4): 378–86. DOI: https://doi.org/10.2975/28.2005.378.386

45. Rossi ME. The development and validation of the comprehensive team interdependence scale. South Florida: University of South Florida; 2008.

46. Spreitzer GM. Social structural characteristics of psychological empowerment. *Academy of Management Journal*, 1996; 39(2): 483–504. DOI: https://doi.org/10.2307/256789

47. Chiocchio F, Lebel P, Therriault PY, Boucher A, Hass C, Rabbat F-X, et al. Stress and Performance in Health Care Project Teams. Newtown Square, PA: Project Management Institute; 2012.

48. Campion MA, Medsker GJ, Higgs AC. Relations between work group characteristics and effectiveness: Implications for designing effective work groups. *Personnel Psychology*, 1993; 46(4): 823–50. DOI: https://doi.org/10.1111/j.1744-6570.1993.tb01571.x

49. Dubé JN. Interactions entre les professionnels d’une équipe de sons intensifs: les déterminants influençant la collaboration. Montréal (QC) Canada: Université de Montréal; 2014.

50. Jehn KA, Mannix EA. The dynamic nature of conflict: A longitudinal study of intragroup conflict and group performance. *Academy of Management Journal*, 2001; 44(2): 238–51. DOI: https://doi.org/10.2307/3069453

51. Chiocchio F, Forgues D, Paradis D, Iordanova A. Teamwork in Integrated Design Projects: Understanding the Effects of Trust, Conflict, and Collaboration on Performance. *Project Management Journal*, 2011; 42(6): 78–91. DOI: https://doi.org/10.1002/pmj.20268

52. Spector PE. Measurement of human service staff satisfaction: development of the Job Satisfaction Survey. *American Journal of Community Psychology*, 1985; 13(6): 693–713. DOI: https://doi.org/10.1007/BF00929796

53. Gavin DR, Ross HE, Skinner HA. Diagnostic validity of the drug abuse screening test in the assessment of DSM-III drug disorders. *British Journal of Addiction*, 1989; 84(3): 301–7. DOI: https://doi.org/10.1111/j.1360-0443.1989.tb03463.x
54. Bohn MJ, Babor TF, Kranzler HR. The Alcohol Use Disorders Identification Test (AUDIT): validation of a screening instrument for use in medical settings. *Journal of Studies on Alcohol*, 1995; 56(4): 423–32. DOI: https://doi.org/10.15288/jsa.1995.56.423

55. Gache P, Michaud P, Landry U, Accietto C, Arfaoui S, Wengler O, et al. The Alcohol Use Disorders Identification Test (AUDIT) as a screening tool for excessive drinking in primary care: reliability and validity of a French version. *Alcoholism: Clinical and Experimental Research*, 2005; 29(11): 2001–7. DOI: https://doi.org/10.1097/01. alc.0000187034.58955.64

56. Tremblay J, Bamvita JM, Grenier G, Fleury MJ. Utility of the Montreal assessment of need questionnaire for community mental health planning. *Journal of Nervous and Mental Disease*, 2014; 202(9): 677–87. DOI: https://doi.org/10.1097/NMD.000000000000180

57. Roux P, Passerieu C, Fleury MJ. Mediational analysis of severity of needs, service performance and outcomes for patients with mental disorders. *British Journal of Psychiatry*, 2016; 209(6): 511–6. DOI: https://doi.org/10.1192/bjp.bp.116.184010

58. Adair CE, McDougall GM, Mitton CR, Joyce AS, Wild TC, Costigan N, et al. Continuity of care and health outcomes among persons with severe mental illness. *Psychiatric Services*, 2005; 56(9): 1061–9. DOI: https://doi.org/10.1176/appi.ps.56.9.1061

59. Salzer MS, Brusilovskiy E. Advancing recovery science: reliability and validity properties of the Recovery Assessment Scale. *Psychiatric Services*, 2014; 65(4): 442–53. DOI: https://doi.org/10.1176/appi.ps.201300089

60. Poule J. Le rétablissement : Recherche exploratoire sur la procédure de validation de deux échelles, MARS et RAS-41. Aix Marseille: Aix Marseille Université 2013.

61. Baker F, Intagliata J. Quality of life in the evaluation of Community support systems. *Evaluation and Program Planning*, 1982; 5: 69–79. DOI: https://doi.org/10.1016/0197-7189(82)90059-3

62. Caron J, Mercier C, Tempier R. [Validation of Satisfacation with Life Domains Scale in Quebec]. *Santé Mentale au Québec*, 1997; 22(2): 195–217. DOI: https://doi.org/10.7202/032422ar

63. Kilbourne AM, Beck K, Spaeth-Rublee B, Ramanuj P, O’Brien RW, Tomoyasu N, et al. Measuring and improving the quality of mental health care: a global perspective. *World Psychiatry*, 2018; 17(1): 30–8. DOI: https://doi.org/10.1002/wps.20482

64. Scheppman S, Hansen J, de Putter ID, Batenburg RS, de Bakker DH. The common characteristics and outcomes of multidisciplinary collaboration in primary health care: a systematic literature review. *International Journal of Integrated Care*, 2015; 15: e027. DOI: https://doi.org/10.5334/ijic.1359

65. Fleury MJ, Grenier G, Vallee C, Aube D, Farand L, Bamvita JM, et al. Implementation of the Quebec mental health reform (2005–2015). *BMC Health Services Research*, 2016; 16(1): 586. DOI: https://doi.org/10.1186/s12913-016-1832-5

66. Leutz WN. Five Laws for Integrating Medical and Social Services: Lessons from the United States and the United Kingdom. *The Milbank Quarterly*, 1999; 77(1): 77–110. DOI: https://doi.org/10.1111/1468-0009.00125

67. Jiwani I, Fleury MJ. Divergent modes of integration: the Canadian way. *International Journal of Integrated Care*, 2011; 11: e018. DOI: https://doi.org/10.15334/ijic.578

68. Suter E, Oelke ND, Adair CE, Armitage GD. Ten key principles for successful health systems integration. *Healthcare Quarterly*, 2009; 13 Spec No:16–23. DOI: https://doi.org/10.12927/hcq.2009.21092.

69. Walters P, Tylee A, Goldberg D. Psychiatry in Primary Care. In: Murray RM, Kendler KS, McGuffin P, Wessely S, Castle DJ (eds.), *Essential Psychiatry*, 4 ed. UK: Cambridge University Press; 2008. p. 479–97. DOI: https://doi.org/10.1017/CBO9780511544125.022

70. Fleury MJ, Imboua A, Aube D, Farand L, Lambert Y. General practitioners’ management of mental disorders: a rewarding practice with considerable obstacles. *BMC Family Practice*, 2012; 13: 19. DOI: https://doi.org/10.1186/1471-2299-13-19

71. Barkil-Oteo A. Collaborative care for depression in primary care: how psychiatry could “troubleshoot” current treatments and practices. *The Yale Journal of Biology and Medicine*, 2013; 86(2): 139–46.

72. Katon W. Collaborative depression care models: from development to dissemination. *American Journal of Preventive Medicine*, 2012; 42(5): 550–2. DOI: https://doi.org/10.1016/j.amepre.2012.01.017

73. Heritage B, Pollock C, Roberts L. Validation of the organizational culture assessment instrument. *PloS One*, 2014; 9(3): e92879. DOI: https://doi.org/10.1371/journal.pone.0092879

74. Fleury MJ. Integrated service networks: the Quebec case. *Health Services Management Research*, 2006; 19(3): 153–65. DOI: https://doi.org/10.1258/095148406777888080

75. Onyett S. Revisiting job satisfaction and burnout in community mental health teams. *Journal of Mental Health*, 2011; 20(2): 198–209. DOI: https://doi.org/10.3109/09638237.2011.556170

76. Happell B, Martin T, Pinikahana J. Burnout and job satisfaction: a comparative study of psychiatric nurses from forensic and a mainstream mental health service. *International Journal of Mental Health Nursing*, 2003; 12(1): 39–47. DOI: https://doi.org/10.1046/j.1440-0979.2003.00267.x

77. Judge TA, Thoresen CJ, Bono JE, Patton GK. The job satisfaction-job performance relationship: a qualitative and quantitative review. *Psychological Bulletin*, 2001; 127(3): 376–407. DOI: https://doi. org/10.1037/0033-2909.127.3.376

78. Osborn LA, Stein CH. Mental Health Care Providers’ Views of Their Work with Consumers and Their
Reports of Recovery-Oriented, Job Satisfaction, and Personal Growth. *Community Mental Health Journal*, 2016; 52(7): 757–66. DOI: https://doi.org/10.1007/s10597-015-9927-8

79. Mathieu J, Maynard MT, Rapp T, Gilson L. Team Effectiveness 1997–2007: A review of recent advancements and a glimpse into the future. *Journal of Management*, 2008; 34: 410–77. DOI: https://doi.org/10.1177/0149206308316061

80. van Duijn S, Zonneveld N, Lara Montero A, Minkman M, Nies H. Service Integration Across Sectors in Europe: Literature and Practice. *International Journal of Integrated Care*, 2018; 18(2): 6. DOI: https://doi.org/10.5334/ijic.3107

81. Chang WY, Ma JC, Chiu HT, Lin KC, Lee PH. Job satisfaction and perceptions of quality of patient care, collaboration and teamwork in acute care hospitals. *Journal of Advanced Nursing*, 2009; 65(9): 1946–55. DOI: https://doi.org/10.1111/j.1365-2648.2009.05085.x

82. Lichtenstein R, Alexander JA, McCarthy JF, Wells R. Status differences in cross-functional teams: effects on individual member participation, job satisfaction, and intent to quit. *Journal of Health and Social Behavior*, 2004; 45(3): 322–35. DOI: https://doi.org/10.1177/002244930404500306

83. Evans S, Huxley P, Gately C, Webber M, Mears A, Pajak S, et al. Mental health, burnout and job satisfaction among mental health social workers in England and Wales. *British Journal of Psychiatry*, 2006; 188: 75–80. DOI: https://doi.org/10.1192/bjp.188.175

84. Knapp S. Lean Six Sigma implementation and organizational culture. *International Journal of Health Care Quality Assurance*, 2015; 28(8): 855–63. DOI: https:// doi.org/10.1108/IJHCQA-06-2015-0079

85. Maynard MT. The impact of experience and familiarity: An examination in project teams: University of Connecticut; 2007.

86. Provan KG, Sebastian JG, Milward HB. Interorganizational cooperation in community mental health: a resource-based explanation of referrals and case coordination. *Medical Care Research and Review*, 1996; 53(1): 94–119. DOI: https://doi.org/10.1007/107755879605300105

87. Ho WW, Chiu MY, Lo WT, Yiu MG. Recovery components as determinants of the health-related quality of life among patients with schizophrenia: structural equation modelling analysis. *Australian & New Zealand Journal of Psychiatry*, 2010; 44(1): 71–84. DOI: https://doi.org/10.3109/00048670903393654

88. Hansson L, Bjorkman T, Svensson B. The assessment of needs in psychiatric patients. Interrater reliability of the Swedish version of the Camberwell Assessment of Needs instrument and results from a cross-sectional study. *Acta Psychiatrica Scandinavica*, 1995; 92(4): 285–93. DOI: https://doi.org/10.1111/j.1600-0447.1995.tb09584.x

89. Middelboe T, Mackeprang T, Hansson L, Werdelin G, Karlsson H, Bjarnason O, et al. The Nordic Study on schizophrenic patients living in the community. Subjective needs and perceived help. *European Psychiatry*, 2001; 16(4): 207–14. DOI: https://doi.org/10.1016/S0924-9338(01)00566-1

90. Laugharne R, Flynn A. Personality disorders in consultation-liaison psychiatry. *Current Opinion in Psychiatry*, 2013; 26(1): 84–9. DOI: https://doi.org/10.1097/YCO.0b013e328359977f

91. Lawn S, McMahon J. Experiences of care by Australians with a diagnosis of borderline personality disorder. *Journal of Psychiatry and Mental Health Nursing*, 2015; 22(7): 510–21. DOI: https://doi.org/10.1111/jpm.12226

92. Hansson L, Bjorkman T. Are factors associated with subjective quality of life in people with severe mental illness consistent over time?–A 6-year follow-up study. *Quality of Life Research*, 2007; 16(1): 9–16. DOI: https://doi.org/10.1007/s11136-006-9119-7

93. Lasalvia A, Bonetto C, Salvi G, Bissoli S, Tansella M, Ruggeri M. Predictors of changes in needs for care in patients receiving community psychiatric treatment: a 4-year follow-up study. *Acta psychi atrica Scandinavica Supplementum*, 2007; 437: 31–41. DOI: https://doi.org/10.1111/j.1600-0447.2007.01091.x

94. Fleury MJ, Grenier G, Bamvita JM, Tremblay J, Schmitz N, Caron J. Predictors of quality of life in a longitudinal study of users with severe mental disorders. *Health and Quality of Life Outcomes*, 2013; 11: 92. DOI: https://doi.org/10.1186/1477-7525-11-92

95. Slade M, Leese M, Ruggeri M, Kuipers E, Tansella M, Thornicroft G. Does meeting needs improve quality of life? *Psychotherapy and Psychosomatics*, 2004; 73(3): 183–9. DOI: https://doi.org/10.1055/s00076-456

96. Bitter NA, Roeg DP, van Nieuwenhuizen C, van Weeghel J. Identifying profiles of service users in housing services and exploring their quality of life and care needs. *BMC Psychiatry*, 2016; 16(1): 419. DOI: https://doi.org/10.1186/s12888-016-1122-0

97. Crane-Ross D, Lutz WJ, Roth D. Consumer and case manager perspectives of service empowerment: relationship to mental health recovery. *Journal of Behavioral Health Services & Research*, 2006; 33(2): 142–55. DOI: https://doi.org/10.1007/s11414-006-9012-8

98. Lloyd C, King R, Moore L. Subjective and objective indicators of recovery in severe mental illness: a cross-sectional study. *International Journal of Social Psychiatry*, 2010; 56(3): 220–9. DOI: https://doi.org/10.1177/0020764009105703

99. Werner S. Subjective well-being, hope, and needs of individuals with serious mental illness. *Psychiatry Research*, 2012; 196(2–3): 214–9. DOI: https://doi.org/10.1016/j.psychres.2011.10.012

100. Kent S, Fogarty M, Yelowlees P. A review of studies of heavy users of psychiatric services. *Psychiatric Services*, 1995; 46(12): 1247–53. DOI: https://doi.org/10.1176/ps.46.12.1247
101. Chaput YJA, Lebel M-J. Demographic and Clinical Profiles of Patients Who Make Multiple Visits to Psychiatric Emergency Services. *Psychiatric Services*, 2007; 58(3): 335–41. DOI: https://doi.org/10.1176/appi.ps.58.3.335

102. Fok ML, Stewart R, Hayes RD, Moran P. The impact of co-morbid personality disorder on use of psychiatric services and involuntary hospitalization in people with severe mental illness. *Social Psychiatry and Psychiatric Epidemiology*, 2014; 49(10): 1631–40. DOI: https://doi.org/10.1007/s00127-014-0874-4

103. Edlund MJ, Wang PS, Berglund PA, Katz SJ, Lin E, Kessler RC. Dropping out of mental health treatment: patterns and predictors among epidemiological survey respondents in the United States and Ontario. *American Journal of Psychiatry*, 2002; 159(5): 845–51. DOI: https://doi.org/10.1176/appi.ajp.159.5.845

104. Kessler RC, Berglund PA, Bruce ML, Koch JR, Laska EM, Leaf PJ, et al. The prevalence and correlates of untreated serious mental illness. *Health Services Research*, 2001; 36(6 Pt 1): 987–1007.