

# Staff perceptions of community health centre team function in Ontario

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## Abstract

**Objective** To examine perceptions of different staff groups about team functioning in mature, community-governed, interprofessional primary health care practices.

**Design** Cross-sectional online survey.

**Setting** The 75 community health centres (CHCs) in Ontario at the time of the study, which have cared for people with barriers to access to traditional health services in community-governed, interprofessional settings, providing medical, social, and community services since the 1970s.

**Participants** Managers and staff of primary care teams in the CHCs.

**Main outcome measures** Scores on the short version of the Team Climate Inventory (with subscales addressing vision, task orientation, support for innovation, and participative safety), the Organizational Justice Scale (with subscales addressing procedural justice and interactional justice), and the Organizational Citizenship Behavior Scale, stratified by staff group (clinical manager, FP, nurse practitioner [NP], registered nurse, medical secretary, social worker, allied health provider, counselor, outreach worker, and administrative assistant).

### EDITOR'S KEY POINTS

- In Ontario, community health centres (CHCs) provide primary health care, health promotion, and community development services in an interprofessional team model. The quality of team function has been linked to innovation and effectiveness in primary care (PC), as well as to technical quality of care.
- This study examined how PC staff members in CHCs rate the functioning of their teams and aimed to determine if there were differences in perceptions of team functioning between different groups of staff.
- Different CHC staff groups were generally positive in their ratings of team climate, organizational justice, and organizational citizenship behaviour, indicating that CHC PC team members are generally in agreement about their team's vision and fairness of decision making, and that they work well together. In contrast, FPs and nurse practitioners rated procedural justice (perceived fairness) lower than others did, which might be related to the governance and management structure of CHCs.

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**Results** A total of 674 staff members in 58 of 75 (77%) CHCs completed surveys. All staff groups generally reported positive perceptions of team function. The procedural justice subscale showed the greatest variation between groups. Family physicians and NPs rated procedural justice much lower than nurses and administrators did.

**Conclusion** This study provides a unique view of the perceptions of different groups of staff in a long-standing interprofessional practice model. Future research is needed to understand why FPs and NPs perceive procedural justice more negatively than other team members do, and whether such perceptions affect outcomes such as staff turnover and health outcomes for patients.

# Perception du personnel quant au fonctionnement des équipes des centres de santé communautaire de l'Ontario

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## Résumé

**Objectif** Examiner les perceptions de différents groupes d'employés quant au fonctionnement en équipe dans les pratiques de soins de santé primaires bien établies, communautaires et interprofessionnelles.

**Type d'étude** Une enquête transversale en ligne.

**Contexte** Les 75 centres de santé communautaires (CSC) de l'Ontario au moment de l'étude, qui s'occupaient de personnes éprouvant des difficultés à accéder aux services de santé traditionnels, dans des installations communautaires interprofessionnelles offrant des services médicaux, sociaux et communautaires depuis les années 1970.

**Participants** Les gestionnaires et les membres du personnel des équipes de soins primaires des CSC.

**Principaux paramètres à l'étude** Les scores obtenus à la version courte du *Team Climate Inventory* (avec des sous-échelles pour la vision, l'orientation des tâches, l'appui à l'innovation et la sécurité participative), à l'*Organizational Justice Scale* (avec sous-échelles pour la justice procédurale et la justice interactionnelle) et à l'*Organizational Citizenship Behavioural Scale*, stratifié en fonction des groupes d'employés (gestionnaire clinique, MF, infirmière praticienne (IP), infirmière diplômée, secrétaire médicale, travailleur social, autres prestataires de soins, conseiller, travailleur de proximité et adjoint administratif).

### POINTS DE REPÈRE DU RÉDACTEUR

- En Ontario, les centres de santé communautaires (CSC) sont responsables de fournir des soins de santé primaires, de promouvoir de saines habitudes de vie et de développer des services communautaires, et ce, en fonctionnant en tant qu'équipe interdisciplinaire. La qualité du fonctionnement en équipe est souvent associée à l'innovation et à l'efficacité dans les soins primaires (SP), de même qu'à la qualité technique de ces soins.
- Cette étude cherchait à déterminer ce que les membres des équipes de SP des CSC pensent du mode de fonctionnement de leur équipe et à établir s'il y avait des différences dans la perception du fonctionnement en équipe parmi différents groupes d'employés.
- En général, les différents groupes d'employés des CSC évaluaient de façon positive le climat de travail, la justice organisationnelle et le comportement citoyen de l'organisation, ce qui indique que les membres des équipes de SP des CSC s'entendent généralement sur la vision et sur l'équité du processus décisionnel de leur équipe, et qu'ils travaillent bien ensemble. Par contre, les MF et les infirmières praticiennes évaluaient la justice procédurale (l'équité perçue) à un niveau plus faible que les autres, ce qui pourrait être relié à la structure de gouvernance et de gestion des CSC.

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**Résultats** Un total de 674 membres du personnel de 58 des 75 CSC (77 %) ont répondu à l'enquête. Dans l'ensemble, les groupes d'employés ont tous déclaré avoir une opinion favorable du mode de fonctionnement de leur équipe. C'est dans la sous-échelle pour la justice organisationnelle qu'on observait le plus de différences entre les groupes. Les médecins de famille et les IP attribuaient une note plus basse à la justice organisationnelle que les infirmières diplômées et les administrateurs.

**Conclusion** Cette étude présente un panorama unique de ce que pensent différents groupes d'employés au sein d'un type d'établissement de santé interdisciplinaire établi depuis longtemps. Il faudra d'autres études pour élucider les raisons pour lesquelles les MF et les IP attribuent une cote plus basse que les infirmières diplômées et les administrateurs à la justice organisationnelle, et pour déterminer si cette opinion influe sur des questions telles que le renouvellement du personnel et la santé des patients.

Interprofessional primary health care teams are a priority in many jurisdictions in Canada.<sup>1</sup> Until now, there has been more emphasis placed on who team members are than on what they do or how they work together.<sup>2</sup> Primary health care is a broad concept that includes community and public health services.<sup>3</sup> This study is limited to the narrower concept of primary care (PC) or services provided to individuals.<sup>3</sup> Members of PC teams vary widely depending on the setting,<sup>1</sup> and patient care is provided by “the integrated activities of clinical and non-clinical members of primary care teams.”<sup>4</sup> Team function (processes used and psychosocial traits of the team) is presumed to link a team’s task design (including types and features of the tasks and membership of the team) and the team’s effectiveness.<sup>5</sup> The quality of team function has been linked to innovation and effectiveness in PC,<sup>6</sup> as well as to technical quality of care.<sup>7</sup> The quality of team function might even have more influence over clinical behaviour in PC than individual provider or practice characteristics do.<sup>8</sup> Some interventions have been able to improve aspects of team function.<sup>9</sup>

Community health centres (CHCs) are non-profit, community-governed organizations that have provided primary health care, health promotion, and community development services in an interprofessional team model for more than 40 years.<sup>10</sup> Ontario’s CHCs deliver care to socially disadvantaged and hard-to-serve populations and employ almost 400 PC physicians, more than 300 nurse practitioners (NPs), and many other professional and non-professional staff.<sup>11</sup> All staff members in CHCs are salaried, and CHC PC team staff generally report to a clinical director who in turn reports to the executive director (ED) of the CHC. Studies have shown that the quality of PC delivered in CHCs is equivalent or superior to that in other PC models in Ontario.<sup>1,12-14</sup>

Despite CHCs’ longevity and association with high-quality care, little is known about team functioning among PC staff in CHCs. In Quebec, community-governed practices (which are somewhat like Ontario CHCs) tended to have lower scores for team climate than professionally governed practices did.<sup>15</sup> Community health centres employ a range of staff members who might have different perceptions of how their teams work together. In Quebec, where most practices are run by physicians, administrative staff reported “suboptimal” team climate more often than FPs did.<sup>15</sup> In the United States, physicians who worked in CHCs reported dissatisfaction with high workloads and administrative management.<sup>16,17</sup>

This study examines how PC staff members in CHCs rate the functioning of their teams and aims to determine if there are differences in perceptions of team functioning between different groups of staff.

## METHODS

### Design

This cross-sectional study was part of a larger project to examine the effects of organizational factors, team functioning, and patient outcomes. Ethics approval was granted by the research ethics boards of the Ottawa Health Science Network and Bruyère Continuing Care in Ottawa, Ont.

All 75 CHCs in Ontario at the time of the study were included. The CHC PC teams, including any person who provided or supported the provision of clinical care on a regular basis (including administration and reception), were eligible to participate. The EDs of the CHCs were informed about the study at a provincial meeting. All EDs received an e-mail inviting them to allow their CHC to participate in the study. Upon agreement to participate, each ED was asked to distribute an online survey to all the members of his or her CHC’s PC team, including the manager. Any CHC staff members who were not part of the PC team were excluded.

### Survey instrument

The survey instrument was pilot-tested with a group of managers and clinic staff from different Ontario CHCs. General descriptive information was collected: professional role, full-time status, number of years employed at the CHC, and whether the respondent worked off-site from the main clinic. The bulk of the survey consisted of 3 pre-existing validated scales, which were chosen to provide a range of measures used to assess individuals’ perceptions of team performance and decision making based on theoretical constructs within social exchange theory<sup>18</sup> and the assumption that fair organizations enable well-functioning teams and good patient outcomes.<sup>4</sup> All items in all scales were rated on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Composite scores for all scales and subscales were computed by averaging items’ scores.

The Team Climate Inventory (TCI) is a widely used measure of the shared perceptions of the organization’s policies, practices, and procedures within a team.<sup>19</sup> The TCI is linked to qualitative measures of team function<sup>20</sup> and has been inconsistently linked to patient-reported access and satisfaction, continuity, and quality of diabetes care.<sup>21</sup> A “modest” association was found between TCI scores and technical quality of care in PC in Quebec.<sup>7</sup> The TCI is widely used to assess team function in Canada, and to allow comparison with other studies we elected to use the validated short 14-item version.<sup>22</sup> The 4 subscales include vision (4 items), participative safety (4 items), task orientation (3 items), and innovation (3 items).

The 13-item Organizational Justice (OJ) Scale assesses staff perceptions of fairness, equity, and respect.<sup>23</sup> It has

been used extensively in Finland<sup>9,24-26</sup> and in the United Kingdom<sup>4,8,27</sup> to assess individual staff members' perceptions of organizational decision making in PC and other health care settings. Perceptions of OJ have been shown to predict behaviour (such as a willingness to support decision makers and decisions), work attitudes (such as job involvement and commitment to the organization), and stress-related outcomes of employees.<sup>28</sup> The OJ scale has 2 subscales: 7 items on procedural justice (perceived fairness) and 6 items on interactional justice (dignity and respect).

The 13-item Organizational Citizenship Behavior (OCB) Scale assesses staff perceptions of the presence of work-related behaviour that is discretionary, not related to the formal reward system, and in the aggregate promotes the effective functioning of the organization.<sup>23,29</sup> Organizational citizenship behaviour is thought to result as a consequence of employee attitudes and as an antecedent of positive organizational outcomes.<sup>29</sup> It is related to managers' ratings of employee performance, employee turnover, absenteeism, productivity, and efficiency.<sup>30</sup> It has been linked to procedural justice but it might also be a mediator between procedural justice and some clinical behaviour.<sup>8</sup>

## Analysis

Data entry and analyses were performed using SPSS, version 19. Means and SDs or frequencies were calculated to describe provider characteristics. The survey responses were stratified by staff group (clinical manager, FP, NP, registered nurse, medical secretary,

social worker, allied health provider, counselor, outreach worker, and administrative assistant). The allied health provider group consisted of pharmacists, physiotherapists, dietitians, and occupational therapists.

One-way ANOVA (analysis of variance) was conducted to determine if there was an overall difference in TCI, OJ, and OCB scores between the different staff groups. To isolate which groups were different, we conducted a Bonferroni post hoc analysis based on the a priori hypothesis that the clinical providers' ratings would be significantly different from those of the administrative groups. Tests of a priori hypotheses were conducted on the scales showing differences between staff groups on the ANOVA using Bonferroni adjusted  $\alpha$  levels of .05 per test.

## RESULTS

In total, 58 of 75 CHCs (77%) and 674 staff participated. Because the survey was distributed via an e-mail link sent from the CHCs' EDs to an unknown number of individuals we were unable to calculate the exact denominator; however, an organizational survey conducted as a separate component of the larger study revealed an estimated denominator of 1106.5 full-time equivalent positions. Thus, there was an overall response rate of approximately 60% of staff. Overall, FPs, NPs, and nurses represented 57% of the respondents. We excluded system navigators from analyses owing to small numbers, leaving 666 respondents (**Table 1**). Staff had been employed at the CHC for an average of 6 years. Most staff members

**Table 1. Respondent characteristics and TCI, OJ scale, and OCB scale scores: Respondents (N = 666) from 58 CHCs.**

CHARACTERISTICS	NPs (N = 123)	FPS (N = 111)	NURSES (N = 146)	SOCIAL WORKERS (N = 44)	ALLIED HEALTH PROVIDERS (N = 55)	OUTREACH WORKERS (N = 20)	MEDICAL SECRETARIES (N = 84)	ADMINISTRATIVE ASSISTANTS (N = 46)	CLINICAL MANAGERS (N = 37)	TOTAL (N = 666)
Mean (SD) no. of years employed in the CHC	6.0 (6.2)	7.1 (7.0)	5.6 (6.4)	5.7 (6.2)	5.4 (6.0)	6.2 (6.3)	6.2 (5.5)	5.3 (4.1)	6.5 (5.6)	6.0 (6.1)
Full time, %	79	41	65	86	67	75	72	89	100	75
Mean (SD) TCI scores*										
• Vision subscale	5.2 (1.1)	5.4 (0.9)	5.6 (1.0)	5.6 (1.0)	5.5 (0.8)	5.1 (1.2)	5.6 (0.9)	5.7 (0.9)	5.6 (0.7)	5.5 (1.0)
• Safety subscale	5.2 (1.3)	5.7 (1.1)	5.6 (1.2)	5.2 (1.1)	5.5 (1.0)	4.9 (1.5)	5.5 (1.2)	5.5 (1.0)	5.7 (0.9)	5.5 (1.1)
• Innovation subscale	4.7 (1.4)	5.0 (1.3)	5.2 (1.2)	4.9 (1.2)	5.2 (1.1)	5.0 (1.3)	5.5 (1.2)	5.4 (1.2)	5.4 (1.2)	5.1 (1.3)
• Task orientation subscale	4.9 (1.3)	4.9 (1.3)	5.2 (1.3)	4.7 (1.4)	5.3 (1.0)	4.7 (1.1)	5.3 (1.2)	5.3 (1.1)	5.2 (1.3)	5.1 (1.3)
• Total TCI	5.0 (1.1)	5.3 (1.0)	5.4 (1.0)	5.1 (1.0)	5.4 (0.7)	4.9 (1.1)	5.5 (1.0)	5.5 (0.9)	5.5 (0.9)	5.3 (1.0)
Mean (SD) OJ scale score*										
• Interactional justice subscale	5.3 (1.2)	5.5 (1.1)	5.6 (1.0)	5.5 (1.1)	5.6 (0.9)	5.1 (1.4)	5.5 (1.4)	5.6 (0.9)	5.4 (1.1)	5.5 (1.1)
• Procedural justice subscale	4.5 (1.4)	4.4 (1.4)	5.0 (1.3)	4.6 (1.3)	4.6 (1.3)	4.4 (1.4)	5.1 (1.4)	5.4 (1.1)	5.3 (1.2)	4.8 (1.4)
• Total OJ	4.9 (1.2)	4.9 (1.1)	5.3 (1.0)	5.0 (1.1)	5.1 (1.0)	4.7 (1.2)	5.3 (1.2)	5.5 (0.9)	5.4 (1.1)	5.1 (1.1)
Mean (SD) OCB scale score*	4.9 (1.1)	5.0 (1.0)	5.1 (0.9)	4.9 (0.9)	5.0 (1.1)	5.0 (0.9)	5.2 (1.1)	5.3 (0.9)	5.0 (0.8)	5.0 (1.0)

CHC—community health centre, NP—nurse practitioner, OCB—Organizational Citizenship Behavior, OJ—Organizational Justice, TCI—Team Climate Inventory.

\*All scales range between 1 and 7.



in each group were employed full-time; however, only 41% of the physicians worked full-time. There were many missing values in responses provided by medical secretaries. The average score across all staff groups was 5.3 for the TCI, 5.1 for the OJ scale, and 5.1 for the OCB scale.

One-way ANOVA indicated a significant difference between staff groups for the overall TCI score ( $F_{8,510}=2.2$ ,  $P=.03$ ), the innovation subscale of the TCI ( $F_{8,515}=2.5$ ,  $P=.01$ ), the total OJ score ( $F_{8,511}=2.41$ ,  $P=.01$ ), and the procedural justice score ( $F_{8,512}=4.4$ ,  $P<.01$ ). There were no differences between staff groups in how they rated the other subscales in the TCI, interactional justice, or OCB.

Post hoc Bonferroni tests indicated that there were no specific staff groups with differences between mean scores on the TCI or its innovation subscale; however, differences between staff groups were found for procedural justice at the .05 level of significance. On average, FPs and NPs reported lower procedural justice (4.4 and 4.5, respectively) compared with other staff groups, with statistically significant lower scores than nurses (5.0), clinical managers (5.3) and administrative assistants (5.4).

## DISCUSSION

As a whole, CHC PC teams had TCI scores similar to those in other Canadian PC studies<sup>7,31</sup> and OJ and OCB scores within the range of results reported elsewhere.<sup>8,24</sup> We found an overall difference between the average scores for total TCI score (and its innovation subscale) and for OJ and the procedural justice (perceived fairness) subscale among staff groups. These findings indicate that (as expected) different types of team members have different perceptions of their team's performance and decision making, similar to the findings of Beaulieu et al.<sup>15</sup> On the other hand, different staff groups did not differ in their rating of interactional justice, OCB, or the participatory safety, task orientation, or vision subscales of the TCI. These findings appear to demonstrate that all CHC staff groups have similar views of their organizations' vision and mandates, and believe that team members work cordially together and help each other.

We found that NPs and FPs perceived there to be statistically significantly lower procedural justice than administrative staff and nurses did, meaning that NPs and FPs believed there was less fairness in decision making. In PC, higher procedural justice ratings by FPs and nurses have been linked to improved quality of diabetes care<sup>8</sup> and better patient glycemic control.<sup>24</sup> Physicians<sup>32</sup> and nurses perceiving high procedural justice have greater job satisfaction even in unfavourable conditions.<sup>33,34</sup> Injustice is linked to poorer quality and productivity of health care work<sup>35,36</sup> and stress-related disorders among staff.<sup>37</sup> Unfortunately, we are unable to

link our findings in the CHCs we studied to differences in the processes or outcomes of the care they provide.

In Ontario, FPs in CHCs are salaried employees working on teams managed by nonphysicians. The governance structure and the setting and work expectations in CHCs might promote low procedural justice ratings by this group. Low OJ ratings by PC FPs are more common in Finland's public practices than in the private sector. The public PC FPs also have low job satisfaction and organizational commitment and higher levels of psychological distress and sleeping problems.<sup>32</sup> In CHCs in the United States physicians report dissatisfaction with high workloads,<sup>16,17</sup> hierarchical administrative structures, limited physician input into practice, the lack of clear mechanisms for providing input into administration and operations, and an inability to change their work environment.<sup>17</sup> Being a salaried physician and working in a group setting might be more likely to impose bureaucratic controls that limit physician autonomy.<sup>38</sup> Higher perceived autonomy and lower perceived patient complexity have been linked to PC physician career satisfaction.<sup>39</sup>

Working conditions and personal characteristics might also affect CHC FPs' procedural justice ratings. Most staff in all groups other than FPs worked full-time. Part-time physicians are more resistant to change,<sup>40</sup> less satisfied with their jobs, and less committed to the organization than full-time physicians are.<sup>32</sup> On the other hand, FPs in our sample had been employed longer at the CHCs than other staff groups had, which has been linked to better views of team function,<sup>41</sup> improved satisfaction, and commitment to the organization.<sup>32</sup>

The causes of NPs' low procedural justice ratings might be similar to those for FPs. In addition, there is considerable overlap in scope of practice between FPs and NPs, which, if not negotiated openly and respectfully, might cause resentments and tensions on the team.<sup>1</sup> In addition, NPs have also expressed unhappiness about their wages in PC compared with hospital wages, potentially leading to feeling there is injustice within their organizations.<sup>42</sup>

## Strengths and limitations

The strengths of this study include the large number of CHC staff who completed the survey and the use of validated instruments that are associated with outcomes in other settings. The main weakness was the inability to determine the proportion of individuals in each staff group who responded to the questionnaire. Amalgamating survey results from very different organizations across the province and reporting the results in the aggregate might remove differences that would be observed at the level of the organization.

## Conclusion

Different CHC staff groups were generally positive in their ratings of team climate, OJ, and OCB, indicating

that CHC PC team members are generally in agreement about their teams' vision and fairness of decision making, and that they work well together. In contrast, FPs and NPs rated procedural justice lower than others did. While we do not know for certain, this finding might be related to the governance and management structure of CHCs. Further exploration of this finding with qualitative studies, an analysis of the scores at the level of the individual organization, correlation with patient outcomes, and comparisons with NP and FP perceptions in other models of primary health care delivery might help to explain these differences, determine their effect on care, and, if important, uncover ways to resolve them.

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# Contributors

Both authors made substantial contributions to project conception and design, acquisition of data, analysis and interpretation of data, and writing and approving the final version of the article.

# Competing interests

Both authors are employees of community health centres.

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# References

- Hutchison B, Levesque JF, Strumpf E, Coyle N. Primary health care in Canada: systems in motion. *Milbank Q* 2011;89(2):256-88.
- Beaulieu MD, Geneau R, Del Grande C, Denis JL, Hudon E, Haggerty JL, et al. Providing high-quality care in primary care settings. How to make trade-offs. *Can Fam Physician* 2014;60:e281-9. Available from: [www.cfp.ca/content/cfp/60/5/e281.full.pdf](http://www.cfp.ca/content/cfp/60/5/e281.full.pdf). Accessed 2017 May 16.
- Muldoon L, Hogg W, Levitt M. Primary care (PC) and primary health care (PHC). What is the difference? *Can J Public Health* 2006;97(5):409-11.
- Eccles MP, Hrisos S, Francis JJ, Stamp E, Johnston M, Hawthorne G, et al. Instrument development, data collection, and characteristics of practices, staff, and measures in the Improving Quality of Care in Diabetes (iQuaD) study. *Implement Sci* 2011;6:61.
- Lemieux-Charles L, McGuire WL. What do we know about healthcare team effectiveness? A review of the literature. *Med Care Res Rev* 2006;63(3):263-300.
- Bower P, Campbell S, Bojke, Sibbald B. Team structure, team climate and the quality of care in primary care: an observational study. *Qual Saf Health Care* 2013;12(4):273-9.
- Beaulieu MD, Haggerty J, Tousignant P, Barnsley J, Hogg W, Geneau R, et al. Characteristics of primary care practices associated with high quality of care. *CMAJ* 2013;185(12):E590-6.
- Elovainio M, Steen N, Presseaub J, Franscisc J, Hrisosb S, Hawthorne G, et al. Is organizational justice associated with clinical performance in the care for patients with diabetes in primary care? Evidence from the improving Quality of care in Diabetes study. *Fam Pract* 2013;30(1):31-9. Epub 2012 Aug 29.
- Heponiemi T, Manderback K, Vänskä J, Elovainio M. Can organizational justice help the retention of general practitioners? *Health Policy* 2013;110(1):22-8. Epub 2013 Feb 26.
- Association of Ontario Health Centres [website]. *Community health centres*. Toronto, ON: Association of Ontario Health Centres. Available from: <http://aohc.org/community-health-centres>. Accessed 2015 Jul 22.
- Hutchison B, Glazier R. Ontario's primary care reforms have transformed the local care landscape, but a plan is needed for ongoing improvement. *Health Aff (Millwood)* 2013;32(4):695-703.
- Dahrouge S, Hogg WE, Russell G, Tuna M, Geneau R, Muldoon LK, et al. Impact of remuneration and organizational factors on completing preventive manoeuvres in primary care practices. *CMAJ* 2012;184(2):E135-43.
- Glazier R, Zagorski B, Rayner J. *Comparison of primary care models in Ontario by demographics, case mix and emergency department use, 2008/09 to 2009/10*. Toronto, ON: Institute of Clinical Evaluative Sciences; 2012. Available from: [www.ices.on.ca/Publications/Atlases-and-Reports/2012/Comparison-of-Primary-Care-Models](http://www.ices.on.ca/Publications/Atlases-and-Reports/2012/Comparison-of-Primary-Care-Models). Accessed 2017 May 16.
- Russell GM, Dahrouge S, Hogg W, Geneau R, Muldoon L, Tuna M. Managing chronic disease in Ontario primary care: the impact of organizational factors. *Ann Fam Med* 2009;7(4):309-18.
- Beaulieu MD, Dragieva N, Del Grande C, Dawson J, Haggerty JL, Barnsley J, et al. The Team Climate Inventory as a measure of primary care teams' processes: validation of the French version. *Health Policy* 2014;9(3):40-54.
- Cole AM, Doescher M, Phillips WR, Ford P, Stevens NG. Satisfaction of family physicians working in community health centers. *J Am Board Fam Med* 2012;25(4):470-6. Erratum in: *J Am Board Fam Med* 2013;26(3):345.
- Cole AM, Chen FM, Ford PA, Phillips WR, Stevens NG. Rewards and challenges of community health center practice. *J Prim Care Community Health* 2014;5(2):148-51. Epub 2013 Aug 26.
- Homans GC. Social behaviour as exchange. *Am J Sociol* 1958;63:597-606.
- Anderson NR, West MA. Measuring climate for work group innovation: development and validation of the Team Climate Inventory. *J Organ Behav* 1998;19(2):235-58.
- Brown JB, Ryan BL, Thorpe C, Markle EK, Hutchison B, Glazier RH. Measuring teamwork in primary care: triangulation of qualitative and quantitative data. *Fam Syst Health* 2015;33(3):193-202.
- Goh TT, Eccles MP. Team climate and the quality of care in primary health care: a review of studies using the Team Climate Inventory in the United Kingdom. *BMC Res Notes* 2009;2:222.
- Kivimäki M, Elovainio M. A short version of the Team Climate Inventory: development and psychometric properties. *J Occup Organ Psychol* 1999;72:241-6.
- Moorman R. Relationship between organizational justice and organizational citizenship behaviors: do fairness perception influence employee citizenship? *J Appl Psychol* 1991;76(6):845-55.
- Virtanen M, Oksanen T, Kawachi I, Subramanian SV, Elovainio M, Suominen S, et al. Organizational justice in primary-care health centers and glycemic control in patients with type 2 diabetes. *Med Care* 2012;50(10):831-5.
- Elovainio M, Kivimäki M, Helkama K. Organizational justice evaluations, job control and occupational strain. *Appl Psychol* 2001;86(3):418-24.
- Elovainio M, Kivimäki M, Vahtera J. Organizational justice: evidence of a new psychosocial predictor of health. *Am J Public Health* 2002;92(1):105-8.
- Eccles MP, Hawthorne G, Johnston M, Hunter M, Steen N, Francis J, et al. Improving the delivery of care for patients with diabetes through understanding optimised team work and organisation in primary care. *Implement Sci* 2009;4:22.
- Elovainio M, Heponiemi T, Kuusio H, Sinervo T, Hintsä T, Aalto AM. Developing a short measure of organizational justice: a multisample health professionals study. *J Occup Environ Med* 2010;52(11):1068-74.
- Organ DW. A restatement of the satisfaction-performance hypothesis. *J Manag* 1988;14(4):547-57.
- Podsakoff NP, Whiting SW, Podsakoff PM, Blume BD. Individual- and organizational-level consequences of organizational citizenship behaviors: a meta-analysis. *J Appl Psychol* 2009;94(1):122-41.
- Howard M, Brazil K, Akhtar-Danesh N, Agarwal G. Self-reported teamwork in family health team practices in Ontario. Organizational and cultural predictors of team climate. *Can Fam Physician* 2011;57(5):e185-91. Available from: [www.cfp.ca/content/cfp/57/5/e185.full.pdf](http://www.cfp.ca/content/cfp/57/5/e185.full.pdf). Accessed 2017 May 16.
- Heponiemi T, Kuusio H, Sinervo T, Elovainio M. Job attitudes and well-being among public vs. private physicians: organizational justice and job control as mediators. *Eur J Public Health* 2011;21(4):520-5. Epub 2010 Aug 13.
- Aalto A, Heponiemi T, Vaananen A, Bergbom B, Sinervo T, Elovainio M. Is working in culturally diverse working environment associated with physicians' work-related well-being? A cross-sectional survey study among Finnish physicians. *Health Policy* 2014;117(2):187-94. Epub 2014 Feb 14.
- Heponiemi T, Elovainio M, Kouvonen A, Kuusio H, Noro A, Finne-Soveri H, et al. The effects of ownership, staffing level and organisational justice on nurse commitment, involvement, and satisfaction: a questionnaire study. *Int J Nurs Stud* 2011;48(12):1551-61. Epub 2011 Jun 24.
- Pekkarinen L, Sinervo T, Elovainio M, Noro A, Finne-Soveri H. Drug use and pressure ulcers in long-term care units: do nurse time pressure and unfair management increase the prevalence? *J Clin Nurs* 2008;17(22):3067-73.
- Heponiemi T, Elovainio M, Laine J, Pekkarinen L, Eccles M, Noro A, et al. Productivity and employees' organizational justice perceptions in long-term care for the elderly. *Res Nurs Health* 2007;30(5):498-507.
- Nieuwenhuijsen K, Bruinvels D, Frings-Dresen M. Psychosocial work environment and stress-related disorders, a systematic review. *Occup Med (Lond)* 2010;60(4):277-86.
- Grembowski D, Ulrich CM, Paschane D, Diehr P, Katon W, Martin D, et al. Managed care and primary physician satisfaction. *J Am Board Fam Pract* 2003;16(5):383-93.
- Katerndahl D, Parchman M, Wood R. Perceived complexity of care, perceived autonomy, and career satisfaction among primary care physicians. *J Am Board Fam Med* 2009;22(1):24-33.
- Christl B, Harris MF, Jayasinghe UW, Proudfoot J, Taggart J, Tan J. Readiness for organisational change among general practice staff. *Qual Saf Health Care* 2010;19(5):e12. Epub 2010 Mar 1.
- Goh TT, Eccles MP, Steen N. Factors predicting team climate, and its relationship with quality of care in general practice. *BMC Health Serv Res* 2009;9:138.
- Silversides A, Laupacis A. Lower pay hampers nurse practitioner recruitment in primary care. *Healthy Debate* 2012 Jul 5. Available from: <http://healthydebate.ca/2012/07/topic/community-long-term-care/nurse-practitioners>. Accessed 2015 Jul 22.