Stress, burnout, and strategies for reducing them

What's the situation among Canadian family physicians?

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ABSTRACT

OBJECTIVE To ascertain Canadian family physicians' levels of stress and burnout and the strategies they use to reduce these problems.

DESIGN Census survey.

SETTING Kitchener-Waterloo, an urban area with a population of approximately 300 000 in southwestern Ontario.

PARTICIPANTS Family physicians.

MAIN OUTCOME MEASURES Scores on the Family Physician Stress Inventory, scores on strategies to reduce personal stress, scores on strategies to reduce stress on the job, and scores on the Maslach Burnout Inventory.

RESULTS Participation rate was 77.8% (123 of 158 surveys returned). About 42.5% of participants had high stress levels. Burnout was defined by 3 components: emotional exhaustion, depersonalization (going through the day like an "automaton"), and perceived lack of personal accomplishment. Many respondents scored high on the burnout inventory, and almost half had high levels of emotional exhaustion and depersonalization (47.9% and 46.3%, respectively). No demographic factors were associated with high scores on these components. Use of strategies to reduce personal and occupational stress was associated with lower levels of burnout. Scores on the Family Physician Stress Inventory correlated highly with scores on the Maslach Burnout Inventory.

CONCLUSION Regardless of demographic factors, family physicians are at risk of having high levels of stress and burnout. Classic burnout is related to stress brought on by factors such as too much paperwork, long waits for specialists and tests, feeling undervalued, feeling unsupported, and having to abide by rules and regulations. Common strategies for reducing personal stress included eating nutritiously and spending time with family and friends. Common strategies for reducing stress on the job included valuing relationships with patients and participating in continuing medical education. Stress and burnout are related to the desire to give up practice and are, therefore, a human resources issue for the entire health care system.

EDITOR'S KEY POINTS

- This study explores levels of stress and burnout among family physicians in an urban area. In 2001, a survey of rural family physicians found a self-reported burnout rate of 55%.
- Results of this study indicate that stress and burnout on the job are commonly experienced by Canadian family physicians. Use of strategies to reduce personal and occupational stress was associated with lower levels of burnout.
- About 64% of physicians had high levels of job satisfaction despite stress and burnout.

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Stress, épuisement et stratégies pour les atténuer

La situation chez les médecins de famille canadiens

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RÉSUMÉ

OBJECTIF Déterminer les niveaux de stress et d'épuisement des médecins de famille canadiens, et les stratégies qu'il adoptent pour réduire ces problèmes.

TYPE D'ÉTUDE Questionnaire auto-administré.

CONTEXTE La région urbaine de Kitchener-Waterloo, dans l'ouest de l'Ontario, comptant environ 300 000 habitants.

PARTICIPANTS Médecins de famille.

PRINCIPAUX PARAMÈTRES À L'ÉTUDE Scores obtenus au *Family Physician Stress Inventory*, scores pour les stratégies de réduction du stress personnel, scores pour les stratégies de réduction du stress au travail et scores au *Maslach Burnout Inventory*.

RÉSULTATS Le taux de participation était de 77,8% (123 questionnaires retournés sur 158). Environ 42,5% des participants présentaient un niveau de stress élevé. L'épuisement était défini par 3 éléments: épuisement émotionnel, dépersonnalisation (passer la journée comme un automate) et impression de n'arriver à rien. Plusieurs répondants ont eu des scores élevés au *Burnout Inventory* et près de la moitié montraient de hauts niveaux d'épuisement émotionnel et de dépersonnalisation (47,9% et 46,3%, respectivement). Aucun facteur démographique n'était associé aux scores élevés pour ces éléments. Le recours à des stratégies pour atténuer le stress personnel et professionnel était associé à un moindre niveau d'épuisement. Il y avait une forte corrélation entre les scores obtenus au Family Physician Stress Inventory et ceux du Maslach Burnout Inventory.

CONCLUSION Indépendamment des caractéristiques démographiques, les médecins de famille risquent fort d'avoir des niveaux élevés de stress et d'épuisement. L'épuisement typique est relié au stress, lequel résulte de facteurs tels que la paperasse trop abondante, les longues attentes pour les spécialistes et les examens, le sentiment de dévalorisation, le manque de soutien et l'obligation de respecter des règles et des règlements. Les stratégies fréquentes pour réduire le stress personnel incluaient s'alimenter sainement et passer du temps avec la famille et les amis. Les stratégies fréquentes pour réduire le stress au travail incluaient favoriser les relations avec les patients et participer à la formation médicale continue. Stress et épuisement sont associés à l'intention d'abandonner la pratique, constituant par là une menace pour l'ensemble du système de santé.

POINTS DE REPÈRE DU RÉDACTEUR

- Cette étude explore les niveaux de stress et d'épuisement chez les médecins de famille d'un milieu urbain. Lors d'une enquête en 2001, des médecins de famille ruraux rapportaient un taux d'épuisement de 55%.
- Les présents résultats indiquent que stress et épuisement au travail sont fréquents chez les médecins de famille canadiens. Le recours à des stratégies pour réduire le stress personnel et professionnel était associé à un moindre niveau d'épuisement.
- Malgré le stress et l'épuisement, environ 64% des médecins disaient avoir un haut niveau de satisfaction au travail.

***Le texte intégral est accessible en anglais à www.cfp.ca.**

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Occupational stress has been recognized as a problem for family physicians.[1] The term *burnout* has come to mean a combination of emotional exhaustion, feelings of depersonalization, and perceived lack of personal accomplishment.[2] A survey of rural family physicians in 2001 showed a self-reported burnout rate of 55%.[3]

Changes in policy and practice seem to have contributed to high levels of stress and burnout in the medical profession and have brought about a loss of autonomy, diminished prestige, and deep dissatisfaction.[4,5] Professionally desirable personality traits, such as a desire for high achievement and perfectionism, could also have contributed to depression, burnout, and higher suicide rates among physicians.[6,7] Female physicians often have greater family responsibilities in addition to their practice than their male counterparts do.[8-10] The declining rate of new graduates choosing to enter family medicine residency might be partly due to the perception of stress in family medicine. If fewer physicians choose to practise family medicine, this will aggravate the existing shortage of family physicians and further reduce access to primary care.[11,12]

The purpose of this study was to explore levels of stress and burnout among family physicians in an urban area in Canada and to discover whether use of strategies to reduce personal and occupational stress was associated with lower rates of stress and burnout. We also looked at participants' demographic characteristics to see which, if any, were associated with stress and burnout.

METHODS

Sample and design

The survey was distributed to all 158 family physicians in Kitchener-Waterloo, an urban area with a population of approximately 300 000 in southwestern Ontario. Only physicians whose principal work was family practice were included. Those retired or exclusively engaged in other work, such as hospital work, emergency practice, walk-in clinics, dermatology, sports medicine, or psychotherapy, were excluded.

The survey was a self-administered questionnaire distributed using proven methods to increase participation.[13] Ethics approval was obtained from the University of Western Ontario in London.

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Sample size calculation

To test the hypothesis that a correlation of $r=0.25$ exists between burnout and the use of strategies to cope with it, with a 2-sided α of 0.05 and a β of 0.20, the sample size required was 123.[14]

Measures

Participants were asked to complete the Maslach Burnout Inventory and the Family Physician Stress Inventory, to describe their strategies for coping with personal and occupational stress, and to complete questions on demographics. The Maslach Burnout Inventory is a well established list of 22 questions that has been validated for measuring burnout in health professionals, including physicians.[2,15,16] The 3 dimensions of burnout measured were emotional exhaustion, depersonalization, and perceived lack of personal accomplishment.

The Family Physician Stress Inventory and questionnaire on strategies for coping with personal and occupational stress were new measures developed after conducting in-depth interviews with 10 family physicians. Data from these interviews were subjected to thematic analysis by 2 of the authors. We followed an iterative sequence of pretesting, revising, shortening, and validating the questionnaire with the help of 10 other family physicians.

Participants responded on a 5-point scale to the 20 questions on the Family Physician Stress Inventory. Each question was scored between 1 and 5 for a total score of between 20 and 100. A score of 60 or less indicated low stress, 61 to 67 indicated moderate stress, and 68 or higher indicated high stress. Category scores were determined based on the scores of a small pretest sample of physicians.

Data analysis

Data were input into SPSS 9.0 for Windows for analysis. Associations between stress and burnout and between use of strategies and burnout were tested using a Pearson product moment correlation coefficient. Associations between demographic factors and the outcome variables of strategies, stress, and burnout were tested using *t* tests and analysis of variance. Finally, multivariate analysis was used to test the primary hypothesis, controlling for any demographic variables found to be significant, using multiple regressions.

RESULTS

The overall return rate was 77.8%; 123 of 158 surveys sent to all Kitchener-Waterloo family physicians were returned.

Demographic characteristics

Of the respondents 62.6% were male and 37.4% were female. Most participants were married, living common-law, or with a partner (95.9%), and were a median of 47 years old. Participants had been in practice a median of 18 years, and they worked a median of 47 hours in a typical week. Hospital privilege status was active for 15.4% of respondents, courtesy for 70.7%, and no privileges for 13.8%. A slim majority (50.4%) claimed fee-for-service as their main type of remuneration, and the rest were paid through health service organizations (23.6%), family health networks (13.0%), family health groups (10.6%), and salaried positions (2.4%).

About one-quarter (25.4%) anticipated they would stop practising family medicine in the area within the next 5 years.

Challenges

Results of the Family Physician Stress Inventory are shown in **Table 1.** The most frequently cited challenge was paperwork. The other top challenges were long waits for accessing specialists, diagnostic tests, and community resources; feeling undervalued; difficult patients; and medicolegal issues. Other challenges cited by most participants included having to abide by rules and regulations, too strong a sense of personal obligation, overwhelming amounts of new medical information, the shortage of family physicians, the business aspects of practice, and not feeling well supported by local specialists.

Stress

Scores on the Family Physicians Stress Inventory indicated that 42.5% of participants were highly stressed, 26.7% were moderately stressed, and 30.8% had low stress levels. No demographic factors, including age, sex, marital status, practice experience, hospital privilege status, or method of remuneration, were significantly associated with stress.

Relationships between stress and each of the 3 components on the Maslach Burnout Inventory are shown in **Table 2.** The higher the stress scores, the higher the mean emotional exhaustion and depersonalization scores. Personal accomplishment scores, as expected, were lower when stress scores were higher. In a similar manner, stress was positively correlated with emotional exhaustion (0.719, $P<.01$) and depersonalization (0.519, $P<.01$), and negatively correlated with personal accomplishment (-0.478, $P<.01$).

Strategies for coping with stress

Stress was significantly negatively correlated with use of personal and occupational strategies for coping with it (-0.413, $P<.01$ and -0.334, $P<.001$, respectively). **Table 3** shows that most respondents employed strategies for reducing personal stress at least weekly. The strategies used most frequently were eating in a healthy, nutritious manner and scheduling time for self and family. **Table 4** shows that almost all participants used strategies for coping with stress on the job, at least occasionally. The strategies used most frequently were appreciating relationships with patients and participating in continuing medical education.

Burnout

Table 5 shows the rates at which physicians suffered the 3 components of burnout. Almost half reported a high degree of emotional exhaustion and depersonalization. Fewer reported a high degree of personal accomplishment.

Stopping practice

About one-quarter of participants anticipated that they would stop practising within the next 5 years. Post-hoc analysis showed that those who were anticipating stopping practice had higher scores on the stress inventory, used fewer strategies to cope with stress, and were more likely to score higher on all 3 components of the burnout inventory than those who were not thinking of stopping practice.

DISCUSSION

Measuring stress and burnout

This study and a few conducted previously have shown that stress and burnout are common among Canadian family physicians.[3,17] This study found a high degree of stress and burnout among physicians, particularly among urban family physicians. The lack of association between stress and burnout and any demographic factors, including age, sex, practice experience, or type of remuneration, suggests that all family physicians are vulnerable. Previous studies, not specifically of family physicians, have also shown no association between demographic characteristics and burnout or work satisfaction.[4,18] Some studies have focused on the particular challenges facing female physicians with young children.[19-21] Measures to reduce stress and burnout should be targeted at all family physicians rather than at a subsection of the profession. Burnout might not be due to demographic factors, but could be due to practice or personal issues.

Family physicians' stress and burnout

The stresses of family practice are well known. The challenges mentioned most frequently in family medicine were identified again in this study: paperwork; feeling undervalued; long waits for accessing specialists, diagnostic tests, and community resources; difficult patients; and medicolegal issues. Although other studies of physicians have mentioned these issues,[22-25] this is the first study that has focused on these issues specifically among family physicians.

Use of electronic health records or other health professionals to provide documentation might reduce paperwork. Newer models of remuneration and acknowledgment of the value of the role family physicians play might address feelings of being undervalued. System-wide solutions will be required for long waits for services and medicolegal issues. Continuing medical education courses could be designed to address practical approaches to dealing with difficult patients.

Table 1. Physicians' responses on the Family Physician Stress Inventory: *Physicians rated their agreement with the 20 statements on a scale of 1-5, where 1—strongly agree, 2—somewhat agree, 3—neutral, 4—somewhat disagree, and 5—strongly disagree.*

STATEMENTS	STRONGLY AGREE (%)	SOMEWHAT AGREE (%)	NEUTRAL (%)	SOMEWHAT DISAGREE (%)	STRONGLY DISAGREE (%)
1. My sense of professional obligation is too strong for my own good	10.7	48.3	23.0	13.1	4.9
2. I have learned to effectively say no to the many demands of my work	12.3	43.5	13.9	27.0	3.3
3. I find that I can balance family and personal life with my career well	17.2	43.4	15.6	19.7	4.1
4. I find keeping up with new medical information overwhelming	25.4	36.1	20.5	13.1	4.9
5. The amount of paperwork to do is far too much	63.9	24.6	4.1	4.9	2.5
6. Some of my difficult patients can ruin my whole day	35.2	37.8	8.2	13.1	5.7
7. I find patients with complex medical problems an interesting challenge	9.8	44.3	21.3	18.9	5.7
8. My current practice workload is under control	18.0	38.5	18.9	21.3	3.3
9. I use effective time management in my practice	14.8	36.8	24.6	23.8	0.0
10. Recent changes in the roles of family physicians have been good for me	9.0	21.3	40.2	13.9	15.6
11. I find the business aspect of practice stressful	18.0	34.5	22.1	18.0	7.4
12. Long waits for accessing specialists, diagnostic tests, and community resources bother me a lot	55.1	30.8	8.3	5.0	0.8
13. Current rules and regulations set by the College of Physicians and Surgeons and the Ontario Drug Benefit Program are reasonable	0.8	16.7	20.8	37.5	24.2
14. I find that medicolegal issues and required documentation adversely affect the way I practice	27.5	40.8	16.7	11.7	3.3
15. I feel well supported by our local specialists	3.3	27.5	17.5	39.2	12.5
16. Fellow family physician colleagues are a great support to me	20.8	38.4	27.5	10.0	3.3
17. The shortage of family physicians makes it more difficult for me to enjoy my practice	18.3	35.9	20.8	20.8	4.2
18. I think that family medicine is the most undervalued discipline in medicine	54.1	31.7	10.0	2.5	1.7
19. I suffer from a high level of professional stress	12.5	30.0	25.0	20.0	12.5
20. I have a high level of job satisfaction	15.8	48.4	23.3	7.5	5.0

Strategies for coping with stress

Using personal strategies, such as eating nutritiously and spending time with family, and occupational strategies, such as valuing patient-doctor relationships and participating in continuing medical education, appears to help reduce stress and burnout. It is unclear whether this association is due to self-selection or cause and effect. It might be that those who chose to use strategies for coping with stress were naturally more resilient. Or it might be that the association was causal, and if this is so, promotion of stress-reducing strategies in the profession could be important. Some readers might not agree that strategies identified in this study, such as working on finances or pursuing continuing medical education, reduce stress, but these strategies were identified in the qualitative study that preceded this study. Educational sessions might function not only as an opportunity for disseminating and sharing information, but also as a source of support for members in the group. Experience with these stress-reducing activities suggests that being aware that they are helping to prevent themselves

Table 2. Stress levels and mean burnout scores

PHYSICIANS' STRESS INVENTORY SCORES	MEAN EMOTIONAL EXHAUSTION SCORE	MEAN DEPERSONALIZATION SCORE	MEAN PERSONAL ACCOMPLISHMENT SCORE
High (scores of ≥68)	34.4	13.7	36.3
Moderate (scores of 61-67)	24.8	8.7	38.5
Low (scores of ≤60)	16.4	6.7	41.3

Table 3. Personal strategies for managing stress: *Percentage of physicians who use these strategies frequently, occasionally, and infrequently.*

STRATEGY	FREQUENTLY (%)	OCCASIONALLY (%)	INFREQUENTLY (%)
I eat in a healthy, nutritious manner	83.4	10.0	6.6
I schedule time for myself and my family	57.5	34.2	8.3
I am involved in sports activities or exercise	48.3	33.3	17.4
I spend time in personal self-reflection	37.0	26.9	36.1
I am involved in cultural activities, music, art, or other hobbies	24.2	29.2	46.6
I spend time looking after my financial situation	10.8	21.7	67.5
I am involved in charities or community service	8.4	17.5	74.1

Table 4. Strategies for managing stress on the job: *Percentage of physicians who use these strategies frequently, occasionally, and infrequently.*

STRATEGIES	FREQUENTLY (%)	OCCASIONALLY (%)	INFREQUENTLY (%)
I strongly value my relationships with my patients	85.8	10.0	4.2
I participate in continuing medical education	80.0	16.7	3.3
I review my workload and scheduling	57.5	33.3	9.2
I discuss issues and problems with my staff	57.5	33.3	9.2
I use other nonphysician health professionals regularly in my practice	57.5	26.7	15.8
I am consistent in setting limits to my practice	41.7	47.5	10.8
I approach difficult tasks as opportunities to learn and develop my skills	39.2	31.7	29.1

Table 5. Components of burnout: *Percentage of physicians who had high, moderate, and low levels of emotional exhaustion, feelings of depersonalization, and a sense of personal accomplishment.*

SCORES FOR THE 3 COMPONENTS	EMOTIONAL EXHAUSTION (%)	DEPERSONALIZATION (%)	LACK OF PERSONAL ACCOMPLISHMENT (%)
High (≥27, ≥10, ≤33)	47.9	46.3	17.4
Moderate (19-26, 6-9, 34-39)	23.2	23.1	34.7
Low (≤18, ≤5, ≥40)	28.9	30.6	47.9
TOTAL	100	100	100

from becoming stressed and burned out means physicians are more satisfied with their work.[26,27]

Human resource issues

Post-hoc analysis revealed a relationship between stress and burnout and a desire to leave practice. While not surprising, this is a serious issue. Burned-out family physicians will not be the role models needed for recruitment and retention of physicians into the profession during a time of shortages. The notion that family medicine is "the most undervalued area of medicine" will not inspire medical students to choose family medicine as a career.

Limitations

Limitations of this study include the setting, a single urban area, and use of new, unproven ways of measuring stress. The new measures, however, were well supported in the study.

Conclusion

Family physicians, regardless of their demographic characteristics, are at risk of burnout. In these times of high stress rates in the profession, it is important for all family physicians to become aware of the problems that can arise from stress and burnout. Personal and occupational strategies for coping with stress are associated with a reduction in burnout and are, therefore, highly recommended. The results of this study lead us to recommend the 2 most frequently cited personal strategies: eating nutritiously and scheduling time with family. Occupational strategies for coping with stress include learning to value patient-doctor relationships and pursuing continuing medical education, particularly in small, supportive learning groups. Family physicians should be encouraged to develop skills to deal with paperwork and difficult patients.

Burnout and stress might lead to a decision to withdraw from practice early. The profession's recognition and awareness of the serious issues of stress and burnout might be important in addressing the problem of the shortage of family physicians. Attempts to alleviate stress at a systemic level would be helpful as many challenges, such as paperwork, long waits, feeling undervalued, and medicolegal issues, require systemic solutions.

Scores on the Family Physician Stress Inventory correlated well with scores on the Maslach Burnout Inventory as a measure of burnout. The Family Physician Stress Inventory was designed specifically for family physicians, and therefore, after more tests of reliability and validity, might be useful in future studies to assess the prevalence of burnout among family physicians.

Contributors

Dr Lee *conceived, designed, and conducted the study, analyzed and interpreted the data, and drafted and revised the article.* **Dr Stewart** *assisted with development of the survey, analysis and interpretation of data, and revising the article.* **Dr Brown** *assisted with thematic analysis of the data from the in-depth interviews used to develop the survey, interpretation of data, and revising the article. All the authors gave final approval to the manuscript submitted.*

Competing interests

None declared

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References

1. Post D. Values, stress, and coping among practicing family physicians. *Arch Fam Med* 1997;6(3):252-5.
2. Maslach C, Jackson S, Leiter M. *Maslach Burnout Inventory manual.* 3rd ed. Palo Alto, CA: Consulting Psychologists Press, Inc; 1996.
3. Thommasen H, Lavanchy M, Connelly I, Berkowitz J, Grzybowski S. Mental health, job satisfaction, and intention to relocate. Opinions of physicians in rural British Columbia. *Can Fam Physician* 2001;47:737-44.
4. Zuger A. Dissatisfaction with medical practice. *N Engl J Med* 2004;350(1):69-75.
5. Kaufmann M. Rehumanizing: overcoming personal and professional isolation. *Ont Med Rev* 1999;66:44-5.
6. Sotile W, Sotile M. *The resilient physician: effective emotional management for doctors and their medical organizations.* Chicago, IL: American Medical Association Press; 2002. p. 3-132.
7. Johnston C. Suicide totals for MDs: sad reminder of stresses facing medicine, conference told. *CMAJ* 1996;155(1):109-11.
8. Moukas E, Davidson A, Kaufmann V. OMA Physician Health Program explores help-seeking behaviours of women physicians. *Ont Med Rev* 2003;70:41-3.
9. Brown J, Carroll J, Reid A. How family influences practice of obstetrics. Do married women family physicians make different choices? *Can Fam Physician* 1996;42:1319-26.
10. Carroll J, Brown J, Reid A. Female family physicians in obstetrics: achieving personal balance. *CMAJ* 1995;153(9):1283-9.
11. Hawaleshka D. The doctor is in … pain. *Maclean's* 2003;116(49):38-42.
12. MacKean P, Gutkin C. Fewer medical students selecting family medicine. Can family practice survive? *Can Fam Physician* 2003;49:408-9 (Eng), 415-7 (Fr).
13. Hoddinott S, Bass M. The Dillman Total Design Survey Method: a sure-fire way to get high survey return rates. *Can Fam Physician* 1986;32:2366-8.
14. Hulley SB, Cummings SR, Browner WS. Estimating sample size and power: the nitty-gritty. In: *Designing clinical research.* Philadelphia, PA: Lippincott Williams & Wilkins; 2001. p. 65-91.
15. Rafferty J, Lemkau J, Purdy R, Rudisill J. Validity of the Maslach Burnout Inventory for family practice physicians. *J Clin Psychol* 1986;42(3):488-92.
16. Chopra S, Sotile W, Sotile M. Physician burnout. *JAMA* 2004;291(5):633.
17. Canadian Medical Association. *Centre for Physician Health and Well-Being to focus on research.* Ottawa, ON: Canadian Medical Association; 2003.
18. Bovier P, Perneger T. Predictors of work satisfaction among physicians. *Eur J Public Health* 2003;13(1):81-7.
19. Bruce CT, Sanger MM, Thomas PS, Petkus JR, Yates DH. Factors affecting female or male consultant stress in an Australian teaching hospital. *Med J Aust* 2003;179:174-5.
20. Young D. The ultimate balancing act. *Aust Fam Physician* 2004;33(3):101-2.
21. Robinson G. Career satisfaction in female physicians. *JAMA* 2004;291(5):635.
22. Landon B. Career satisfaction among physicians. *JAMA* 2004;291(5):634.
23. Mechanic D. Physician discontent—challenges and opportunities. *JAMA* 2003;290(7):941-6.
24. Janes R, Dowell A. New Zealand rural general practitioners 1999 survey. Part 3: rural general practitioners speak out. *N Z Med J* 2004;117(1191):815-24.
25. Parsons J. Red tape, burnout and fatigue. *Aust Fam Physician* 2003;2(11):869.
26. Kaufmann M. Physician burnout. Part II: personal factors in burnout prevention and health maintenance. *Ont Med Rev* 2002;69(1):1-6.
27. Novack DH, Suchman AL, Clark W, Epstein RM, Najberg E, Kaplan C. Calibrating the physician: personal awareness and effective patient care. Working Group on Promoting Physician Personal Awareness, American Academy on Physician and Patient. *JAMA* 1997;278(6):502-9.