The effects of distress and the dimensions of coping strategies on physicians’ satisfaction with competence

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Abstract

Objectives: The purposes of this study were to (1) articulate the dimensions of Coping strategies used by physicians, and (2) determine whether Coping strategies alleviated Distress and enhanced Satisfaction with Competence.

Methods: Comprehensive questionnaires on factors associated with Satisfaction with Competence were sent to a stratified sample of 5300 physicians across Canada. The response rate was 57% with negligible bias. Factor analysis was used to articulate the dimensions of Coping strategies. The classic Baron and Kenny regression series was used to establish whether Coping mediates the effects of Distress on Satisfaction with Competence. Years in Practice, Self-Reported Health, and Duties of Physicians were control factors.

Results: A reliable 15-item measure of Coping was confirmed \(\alpha = .76\) with four reasonably reliable dimensions: Collegiality \(\alpha = .80\), Attitude \(\alpha = .63\), Managing Work \(\alpha = .60\), and Self-Care \(\alpha = .62\). Physicians reported a mean Satisfaction with Competence of \(M=4.26\) out of 6.0, standard deviation \(SD = 0.64\) with General practitioners reporting slightly lower levels of Satisfaction with Competence than average. Conversely, chronic disease, clinical, and procedural specialists reported higher levels of Satisfaction with Competence. The mean Distress level for all physicians was \(M=3.66\) out of 7.0, \(SD = 0.93\). The highest levels of distress were reported by emergency physicians, general practitioners, and surgeons. Clinical specialists, anesthesiologists, and psychiatrists reported the lowest levels of distress. Physicians reported \(M=4.48\) out of 7.0, \(SD = 0.78\) as the mean level of Coping ability with clinical specialists and general practitioners reporting lower than average abilities to cope. Laboratory and chronic care specialists reported greater than average coping abilities. Regression analyses established Coping as a mediator of Distress which predicted physicians’ Satisfaction with Competence.

Conclusion: Four groups of coping strategies were significant in relieving the pressures of work: (1) Collegiality, (2) Self-Care, (3) Managing Work, and (4) Positive Attitude.

Keywords

Physicians, distress, coping, satisfaction with competence, performance

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have used many ways to cope with the pressures of practicing medicine, most prominently collegial support; however, there is little evidence on whether Coping methods alleviate Distress or positively influence SwC. The purposes of this study were to (1) articulate the dimensions of Coping strategies used by physicians, and (2) determine whether Coping strategies alleviated Distress and enhanced SwC.

**Satisfaction with competence**

Self-assessments of performance are made practically every day by physicians to provide confidence in moving ahead with treatment plans for their patients, to seek help from medical literature/databases, or to refer to other physicians with special expertise. Paradoxically, self-assessments of competence are not strongly correlated with objective assessments and self-assessments do not always lead physicians to focus their Continuing Medical Education (CME) on aspects that they actually need to improve; sometimes physicians focus on refining existing specialized expertise.

While self-assessments may not correlate highly with formal assessments of overall competence, there is growing evidence that physicians can accurately assess their competence to solve practice problems at the moment they must make clinical decisions by asking themselves three critical questions: (1) “Am I good enough to do X myself or should I get help or should I get another colleague to do X?” (2) “Am I doing X correctly?” and (3) “Should I be doing X or what do I need to learn in order to do X?”. The evidence suggests that physicians are responsible in self-assessment, and they know how many of their patients’ needs are being met; this being integral to their SwC. However, unrelenting stress negatively affects perceived practice quality which is embedded within the competencies of SwC.

**Concepts of stress**

There have been many studies on stress and most of them intertwine concepts of stress, strain, and burnout, combining elements of each under a common label of stress. The term burnout originally defined by Maslach and Jackson has generally been used at high levels of severity to identify individuals at high risk of physical or mental illness. The term strain was originally referred to as mental strain by earlier studies of Karasek and Theorell et al. Later, the term strain was most often used to describe daily hassles and fatigue. Cooper et al. and Serido et al. used the general term stress and stressors. Furthermore, many instruments used to measure stress have tended to focus on a single end of the stress spectrum, either at high or low levels.

For clarity and precision, the measure Daily Distress was developed in a study of physicians across Canada to be sensitive enough to capture the full range of stress levels for all physicians, from low levels that reflect daily hassles, through middle levels of fatigue generally referred to as stress or strain, to high levels which identify individuals at risk of burnout. Daily Distress was used in the companion study and in this analysis.

In Canada, 13% of physicians reported very high levels of Distress, with 14.3% of female physicians and 17% of general practitioners reporting very high levels of Distress. About 15% of physicians in the United States and the United Kingdom suffer from mental illness, alcoholism, and/or substance abuse which at some point prevents fulfillment of professional obligations. A large scale meta-analysis of 12 studies involving 1034 physicians from every continent showed that 31.1% of physicians suffered from excessive anxiety, 46.7% had difficulties sleeping, and 61.7% reported high stress levels.

**Coping strategies used by physicians to manage daily distress**

Physicians use a variety of ways to cope with Distress such as seeking collegial advice, planning tasks, setting priorities, and being optimistic. The first attempt to codify Coping strategies was the development of the Ways of Coping Checklist. Subsequently, two broad dimensions of Coping emerged describing (1) instrumental efforts to deal with stressors, and (2) emotion-focused attempts to handle emotions aroused by stressors. These dimensions were shown to be multi-faceted with problem-solving, self-reliance, negotiation, accommodation, delegation, information, and support seeking being specific abilities sought by medical schools; and conversely, helplessness, isolation, submission, and opposition were considered to be maladaptive. Recently, coping strategies have been positively correlated with the personality traits of extraversion, conscientiousness, optimism, and resiliency with the latter two found to influence perceived competence by physicians.

To date, there have not been many conclusive studies of Coping strategies used by physicians to deal with stress. Of the three large studies identified, two were conducted in Europe and only one in Canada. A major study in the United Kingdom investigated stress and burnout among nurses and doctors finding that surgeons relied less on the Coping strategies of collegial support and maintenance of positive attitudes than nurses; that surgeons experienced a greater degree of depersonalization and lower sense of accomplishment than nurses, but nurses followed better self-care habits than surgeons. In a Norwegian study, male physicians relied on collegial support and a positive attitude to buffer stress and reduce exhaustion, while female physicians adopted strategies of engagement with patients and building cohesion among colleagues to prevent exhaustion from high workloads. In a study of physicians in Western Canada, Lemaire and Wallace found that collegial advice, planning tasks, setting priorities, and being optimistic were associated with lower levels of emotional exhaustion.
This national study hypothesized for the first time the existence of four factors of Coping strategies: Collegiality, Managing Work, Self-Care, and Positive Attitude within the 15-item Coping measure reported in the companion study and used in this analysis.

Regarding Collegiality, talking with colleagues about professional practice issues and sharing of responsibilities are time honored Coping strategies used by physicians. Collegial support has been found to buffer the negative effects of work demands, improve mental health, and increase job satisfaction and retention of health professionals. Collegial support has been found to be particularly important in the making of complex treatment decisions for patients having multiple serious co-morbidities and when dealing with demanding and needy patients.

In Managing Work, physicians understand their responsibilities include diagnosing and treating patients in the evenings, weekends, and at times late at night. Although physicians are most satisfied when they feel they have done everything they can for their patients, particularly those with complex needs, the danger of becoming over-committed is ever-present. Physicians with young families facing conflicting family and work responsibilities are especially vulnerable to becoming over-committed. Effective time management, sharing of responsibilities, priority setting, and communication with colleagues and staff reduces distress among physicians.

Self-Care encompasses restful sleep, regular exercise, and proper nutrition which are often compromised in the busy lives of physicians and nurses. Relaxation and release techniques (e.g. meditation and music) have been shown to reduce stress among health professionals. Most importantly, Self-Care involves maintaining an appropriate separation of personal life from work. Furthermore, physicians need to understand their own limitations, including the acceptance that on occasion when work threatens to overwhelm their capacities to perform their duties, relief or help is a sign of wisdom not weakness.

Finally, the flow of work in practicing medicine can be overwhelming unless a positive attitude is adopted. Sometimes physicians ignore signals of exhaustion “going on as if nothing is wrong,” and optimism can erode. A positive attitude in making a difference in the lives of patients is important for health-care professionals. Feeling undervalued, dealing with difficult patients, and complex medical legal issues, on the other hand, lead to emotional exhaustion.

Explaining SwC and testing whether coping alleviates distress

This research examines the influence of Coping strategies as the crucial link between Distress and SwC. It was hypothesized that physicians experiencing higher levels of Distress report lower SwC; and that physicians reporting higher levels of Coping report higher levels of SwC at every given level of Distress.

Methods

Participants and procedure

Comprehensive questionnaires on SwC and factors associated with work environment and quality of health services were sent to a large sample (n = 5300) of physicians across Canada, that was stratified to obtain sufficient response from female specialists and physicians practicing in smaller communities. Ethics approval was obtained from the Behavioral Sciences Research Ethics Board of the University of Saskatchewan (BEH 197-2007) prior to having the sample drawn from the Canadian Medical Association Masterfile. Physicians were sent three full mailings and two reminders using the classic Dillman approach. Details on the sample stratification are found in Lepnurm et al. Besides describing the purpose of the study, the cover letter stated that returning the questionnaire in the postage paid envelope constituted consent.

Of the total sample, 193 physicians had moved and 149 were ineligible (retired, practicing less than half-time, returned to medical school, on maternity leave, or serious illness) yielding an eligible sample of 4958 physicians. Of the eligible participants, 2810 completed questionnaires for an effective response rate of 56.7%. Since this study focused on physicians who examined and treated individual patients, administrative (n = 30), research (n = 38), and population health (n = 103) physicians were not included, for a final study population of 2639 physicians.

To check for response bias, a one page survey containing key items from the original questionnaire was sent to all 2148 non-responders. Subsequently, 686 non-response bias surveys were returned by mail or fax. Response bias was negligible on the basis of career satisfaction, authority to make clinical decisions, location, specialty, official language (English or French), age, or gender.

Measures

SwC was measured using the 12-item scale of Lepnurm et al. that covers the competencies established by the Royal College of Physicians and Surgeons of Canada (RCPSC). Distress was captured using the 13-item scale of Lepnurm et al. scored on 7-point scales ranging from Never to Daily. Coping, complementary to Distress, was measured using 15 items scored on the same 7-point scales. Control variables were Years in Practice, Self-Reported Health, and Duties of Physicians. Self-Reported Health used a 5-point scale ranging from very poor to very good, and was included because it was significantly correlated with Distress and Coping, yet sufficiently independent from both. Duties of Physicians was measured in percentages for patient care,
academic and administrative responsibilities, as in Canadian Medical Association surveys of physicians. Academic and administrative duties represent minor proportions of responsibilities for most physicians; therefore, these percentages were transformed by natural log.

**Statistical analyses**

Principal components factor analysis with Varimax rotation was used to identify the dimensions within the 15-item Coping measure; factor loadings were used to determine which items belong to each dimension; and Cronbach’s alpha was used to establish their reliabilities.

To establish whether Coping mediates the effect of Distress on SwC, analyses were conducted in three steps using the approach of Baron and Kenny:39 (1) the mediator Coping was regressed on Distress, then (2) SwC was regressed on Distress, and (3) SwC was regressed on both Distress and Coping. Years in Practice, Self-Reported Health, and Duties of Physicians were controlling factors. To determine the importance, direction, and magnitude of the independent factors, $\beta$ values and Coefficients of determination $R^2$ were interpreted.50

For verification, the same regressions were conducted separately for general practitioners and specialists, as well as by gender and language. For visual corroboration, homogeneous group means of five levels of Distress at three levels of Coping were plotted against SwC using Scheffé statistics with 95% confidence interval.

**Results**

**Descriptive findings**

Male respondents on average were 5 years older ($M=50.6$, $SD=9.7$) than female respondents ($M=45.0$, $SD=8.5$). For SwC, general practitioners ($M=4.16$ out of 6.0, $SD=0.65$) reported slightly lower levels of SwC than average ($M=4.26$, $SD=0.64$). Conversely, the specializations of chronic disease, clinical, and procedural specialists reported SwC levels of ($M=4.47$, $SD=0.59$); $M=4.47$, $SD=0.59$; and $M=4.39$, $SD=0.65$, respectively (Table 1).

The mean Distress level for all physicians was ($M=3.66$ out of 7.0, $SD=0.93$). The highest levels of distress were reported by emergency physicians ($M=3.97$, $SD=0.83$), general practitioners ($M=3.85$, $SD=0.89$), and surgeons ($M=3.83$, $SD=0.86$). Clinical specialists ($M=3.24$, $SD=0.92$), anesthesiologists ($M=3.31$, $SD=0.93$), and psychiatrists ($M=3.37$, $SD=0.93$) reported the lowest levels of distress (Table 1). Female physicians reported slightly higher levels of Distress than male physicians for 11 of the 14 broad specializations. Only emergency physicians and male surgeons reported higher levels of Distress than female physicians.

Coping ability did not vary much for the specializations ($M=4.48$ out of 7.0, $SD=0.78$). Clinical specialists ($M=4.33$, $SD=0.81$) and general practitioners ($M=4.40$, $SD=0.77$) reported significantly lower than average abilities to cope. Laboratory ($M=4.70$, $SD=0.69$) and chronic care specialists ($M=4.61$, $SD=0.81$) reported greater than average coping abilities (Table 1).

**Reliability of measures**

The reliabilities and the dimensional structures of the SwC and Distress measures were established in the modeling study of Lepnurm et al.5 This study verified the reliability of the Coping scale ($\alpha=.76$). The factor structure explained 54.5% of the variance conforming to the four dimensions of Coping hypothesized, with reasonable reliabilities for Collegiality ($\alpha=.80$), Attitude ($\alpha=.63$), Manage-Work ($\alpha=.60$), and Self-Care ($\alpha=.62$), explaining 16.1%, 13.3%, 12.8%, and 12.3% of the variance and Eigenvalues after rotation of 2.4, 2.0, 1.9, and 1.8, respectively (Table 2). The items loaded onto the hypothesized dimensions in that primary loadings exceeded cross-loadings for all four dimensions.

The first dimension, Collegiality, consisted of three items:

- A colleague is willing to take on extra work so that you can take time for CME.
- If you needed a week off to attend to special needs a colleague would fill in for you.
- When you need to talk about a problem there are colleagues available for advice.

The factor loadings were very high ranging from .70 to .87 with no competing cross-loadings (Table 2). Inter-item correlations ranged from .48 to .74 with the first two items being highly correlated, colleagues specifying two distinct reasons for providing relief (Table 3).

The second dimension, Attitude, consisted of four items:

- Feel excited about the work you do.
- Feel good because a patient resolved a health issue.
- Maintain an optimistic attitude throughout the day.
- Approach difficult tasks as opportunities to learn.

The factor loadings ranged from .76 to .54 with two competing cross-loadings (Table 2). The third item on optimism cross-loaded (.25) onto the factor of Self-Care; however, the primary loading was higher (.55). The last item on difficult tasks cross-loaded (.39) onto the factor of Managing Work; however, the primary loading was higher (.54) (Table 2). Inter-item correlations ranged from .15 to .41 with the second item having the weakest correlations (Table 3).

The third dimension, Managing Work, consisted of four items:

- How frequently do you review or plan tasks.
- Set aside time for specific activities of professional interest.
Discuss issues and problems with staff.
Spend time keeping up with clinical knowledge.

The factor loadings ranged from .77 to .50 with one competing cross-loading (Table 2). The last item on keeping up with knowledge cross-loaded (.45) onto the factor of Attitude with the primary loading being slightly higher (.50) (Table 2). Moreover, the second and last items were significantly correlated (.50). Inter-item correlations ranged from .16 to .60 with the last item having the weakest correlations with the other three items (Table 3).

The fourth dimension, Self-Care, consisted of four items:

- How frequently do you eat a nutritious meal during the workday.
- Engage in physical exercise.
- Get a restful night's sleep.
- Pause for a relaxing break during the workday.

The factor loadings ranged from .87 to .47 with one competing cross-loading (Table 2). The last item, pause for a break, cross-loaded (.38) onto the factor of Managing Work; however, the primary loading was higher (.47) (Table 2). Inter-item correlations ranged from .16 to .60 with the last item having the weakest correlations with the other three items (Table 3).

**Does ability to cope reduce distress and enhance SwC?**

As expected, SwC, Distress, and Coping were all found to be significantly inter-correlated; and the controlling variables of Years in Practice and Self-Reported Health were both significantly correlated with SwC, Distress, and Coping (Table 4). Although the presence of academic and administrative duties of physicians had marginal effects on variation in SwC, Distress, and Coping, they were statistically significant, and therefore included (Table 5).

In the first step, Coping was regressed on Distress. Self-Reported Health was found to explain 7.9% of the total variance in Daily Distress scores for physicians sampled ($\beta = -.217, p = .000$), and Coping was found to explain a further 3.6% of the variance in Daily Distress scores ($\beta = -.203, p = .000$; Panel 1, Table 5). Collectively, the controlling factors and Coping explained a total of 15.7% of the variation in Distress (Panel 1, Table 6). Similarly, Self-Reported Health was found to explain 7.4% ($\beta = -.210, p = .000$) of the variance in Daily Distress scores for female physicians and 8.3%
A colleague is willing to take on extra work so that you can take time for special training or CME
If you needed a week off to attend to special needs a colleague would fill in for you
When you need to talk about a problem there are colleagues available who can give you sound advice
  • Feel excited about the work that you do
  • Feel really good because a patient had resolved a health issue
  • Maintain optimistic attitude throughout the day
  • Approach difficult tasks as opportunities to learn and develop skills
How frequently do you: review tasks, plan accordingly
Set aside time for specific activities of professional interest
Discuss issues and problems with staff
Spend time keeping up or advancing your clinical knowledge or skills
  Eat a nutritious lunch sometime during the workday
  Engage in physical exercise
  Get a restful night’s sleep
  Pause for a relaxing break
Eigenvalues after rotations 2.41 1.99 1.93 1.84
Variance explained by each component 16.08% 13.30% 12.84% 12.28%

In the third step, Distress and Coping were regressed on SwC. Examined together, Self-Reported Health was found to explain 8.4% of the total variance in SwC among sampled physicians ($\beta = -.093$, $p = .000$); Coping was found to explain an additional 10.4% of the total variance in SwC ($\beta = .258$, $p = .000$); and Distress was found to explain a further 14.6% of the total variance in SwC ($\beta = -.416$, $p = .000$; Panel 3, Table 6). Collectively, the controlling factors, Coping, and Distress explained a total of 35.8% of the variation in SwC (Panel 3, Table 6). Similarly, Self-Reported Health was found to explain 7.8% ($\beta = -.094$, $p = .000$) of the variance in SwC for female physicians and 8.9% ($\beta = -.091$, $p = .000$) for male physicians; Coping was found to explain an additional 10.5% ($\beta = .259$, $p = .000$) for female physicians and an additional 10.3% ($\beta = .257$, $p = .000$) for male physicians; and Distress was found to explain a further 13.9% ($\beta = -.402$, $p = .000$) of the variation in SwC for female physicians and a further 15.2% ($\beta = -.427$, $p = .000$) for male physicians. Collectively, the controlling factors, Coping, and Distress explained a total of 34.2% of the variation in SwC for female physicians and 37.0% of the variation in SwC for male physicians.
The regression analyses for all physicians, and by gender, clearly showed that Coping mediates Distress and enhances SwC. Analysis comparing general practitioners with specialists also showed the same pattern of results. Collectively, the controlling factors, Coping, and Distress explained 35.6% of the variance in SwC, and for physicians corresponding in French ($n=352$), these factors explained 33.8% of the variance.

For visual corroboration, Scheffé statistics demarcated homogeneous subsets of Distress, Coping, and SwC, which clearly illustrated that at all five levels of Distress, as Coping ability increases so does SwC. Of the 2639 responding physicians, 300 reported very low Distress levels and of these, 300 reported very low Distress levels and of these,

Table 3. Inter-item correlations and alpha if deleted for Dimensions of Coping.

|                      | A colleague take on extra work so you can take CME | A colleague would fill in for you | Cronbach’s alpha if item deleted |
|----------------------|---------------------------------------------------|----------------------------------|---------------------------------|
| Collegiality sub-scale alpha .801 | .504                                              | .477                             | .848                            |
| When you need to talk about a problem there are colleagues available who can give you sound advice | .737                                             |                                   | .642                            |
| A colleague is willing to take on extra work so that you can take time for special training or CME | .665                                             |                                   |                                  |
| If you needed a week off to attend to special needs a colleague would fill in for you | .665                                             |                                   |                                  |

**Attitude sub-scale alpha .597**

| Maintain optimistic attitude throughout the day | Opportunities to learn | Feel excited about the work that you do | Feel good because a patient had resolved a health issue | Cronbach’s alpha if item deleted |
|------------------------------------------------|------------------------|----------------------------------------|--------------------------------------------------------|---------------------------------|
| Approach difficult tasks as opportunities to learn and develop skills | .229                   | .410                                   | .152                                                   | .533                            |
| • Feel excited about the work that you do | .292                   | .223                                   | .425                                                   | .551                            |
| • Feel really good because a patient had resolved a serious health issue | .292                   | .223                                   | .425                                                   | .551                            |

**Managing Work sub-scale alpha .616**

| Review tasks, plan accordingly | Set aside time for activities of professional interest | Discuss issues with staff | Spend time advancing clinical knowledge | Cronbach’s alpha if item deleted |
|--------------------------------|------------------------------------------------------|--------------------------|----------------------------------------|---------------------------------|
| Set aside time for specific activities of professional interest | .419                                                | .286                     | .155                                   | .533                            |
| Discuss issues and problems with staff | .231                                                 | .231                     | .425                                   | .449                            |
| Spend time keeping up or advancing your clinical knowledge or skills | .201                                                 | .201                     | .587                                   | .576                            |

**Self-Care sub-scale alpha .627**

| Pause for a relaxing break | Eat lunch | Physical exercise | Restful sleep | Cronbach’s alpha if item deleted |
|----------------------------|-----------|--------------------|---------------|---------------------------------|
| Eat a nutritious lunch sometime during the workday | .352      | .222               | .222          | .600                            |
| Engage in physical exercise | .597      | .222               | .219          | .425                            |
| Get a restful night’s sleep | .160      | .222               | .222          | .637                            |

Table 4. Correlations between Satisfaction with Competence and Distress with components of Coping.

|                          | Stressscale | Collegiality | PAttitude | Self Care | Manage Work |
|--------------------------|-------------|--------------|-----------|-----------|-------------|
| N=2639                   | Pearson correlation | .520   | .269      | .391      | .167        | .229        |
|                          | Sig. (2-tailed)   | .000      | .000      | .000      | .000        | .000        |
| Satisfaction with Competence | Pearson correlation | 1      | -.145     | -.177     | -.263       | -.221       |
|                          | Sig. (2-tailed)   | .000      | .000      | .000      | .000        | .000        |

CME: Continuing Medical Education.
Table 6. Coping and Distress regressed on to Satisfaction with Competence.

| Step | Factor           | R square | Change statistics | Std coeffs | t    | Sig. |
|------|------------------|----------|-------------------|------------|------|------|
|      |                  |          | R square change   | F change   | Sig. F change | Beta |
| 1    | YearsPractice    | .030     | .030              | 80.100     | .000 | -171 | -35.465 | .000 |
| 2    | Rate Health      | .108     | .079              | 232.428    | .000 | -217 | -11.538 | .000 |
| 3    | PtCare%          | .109     | .011              | 2.578      | .108 | -053 | -1.786 | .079 |
| 4    | Academic%        | .118     | .008              | 25.151     | .000 | -065 | -2.833 | .005 |
| 5    | Admin%           | .121     | .003              | 9.480      | .002 | .075 | 3.376  | .001 |
| 6    | COPING           | .157     | .036              | 113.254    | .000 | -203 | -10.642 | .000 |
|      | df=2632          |          |                   |            |      |      |        |      |

Panel 2. Distress regressed on Satisfaction with Competence

| Step | Factor      | R square | Change statistics | Std coeffs | t    | Sig. |
|------|-------------|----------|-------------------|------------|------|------|
|      |             |          | R square change   | F change   | Sig. F change | Beta |
| 1    | YearsPractice| .010     | .010              | 25.312     | .000 | .028 | 1.677  | .094 |
| 2    | Rate Health | .093     | .084              | 242.903    | .000 | .153 | 8.971  | .000 |
| 3    | PtCare%     | .093     | .000              | 0.466      | .495 | .093 | 4.262  | .000 |
| 4    | Academic%   | .107     | .014              | 41.331     | .000 | .111 | 5.424  | .000 |
| 5    | Admin%      | .108     | .001              | 3.351      | .067 | .074 | 3.678  | .000 |
| 6    | DISTRESS    | .301     | .193              | 725.975    | .000 | -468 | -26.944 | .000 |
|      | df=2632     |          |                   |            |      |      |        |      |

Panel 3. Distress and Coping regressed on Satisfaction with Competence

| Step | Factor      | R square | Change statistics | Std coeffs | t    | Sig. |
|------|-------------|----------|-------------------|------------|------|------|
|      |             |          | R square change   | F change   | Sig. F change | Beta |
| 1    | YearsPractice| .010     | .010              | 25.312     | .000 | .017 | 1.030  | .303 |
| 2    | Rate Health | .093     | .084              | 242.903    | .000 | .093 | 5.535  | .000 |
| 3    | PtCare%     | .093     | .000              | 0.466      | .095 | .093 | 4.932  | .000 |
| 4    | Academic%   | .107     | .014              | 41.331     | .000 | .082 | 4.059  | .000 |
| 5    | Admin%      | .108     | .001              | 3.351      | .067 | .064 | 3.305  | .001 |
| 6    | COPING      | .212     | .104              | 345.725    | .000 | .258 | 15.199 | .000 |
| 7    | DISTRESS    | .358     | .146              | 596.487    | .000 | -416 | -24.423 | .000 |
|      | df=2631     |          |                   |            |      |      |        |      |

161 physicians reported high levels of Coping and the highest ratings of SwC ($M=4.87$, $SD=0.54$), 81 physicians reported moderate levels of Coping with slightly lower ratings of SwC ($M=4.71$, $SD=0.49$), and 58 reported low levels of Coping with still lower ratings of SwC ($M=4.62$, $SD=0.49$). This pattern is repeated, with 349 physicians reporting very high levels of Distress and of these, 171 physicians reported low levels of Coping and the lowest ratings of SwC ($M=3.53$, $SD=0.60$), 106 physicians reported moderate levels of Coping with slightly higher ratings of SwC.
(M = 3.94, SD = 0.54), and 72 reported high levels of Coping with still higher ratings of SwC (M = 4.00, SD = 0.68). This pattern is consistent at all intermediate levels of Distress and Coping for ratings of SwC (Figure 1, Table 7).

Two-way analysis of variance (ANOVA) clearly established the significant effect of Distress on SwC ($F = 138.2, p < .001$), and the weaker effects of Coping ($F = 13.2, p < .001$), confirming the regression analyses. Therefore, Coping and its dimensions positively mediate the negative effects of Distress on SwC.

**Discussion**

The findings of this study articulated four families of interrelated Coping strategies: Collegiality, Managing Work, Self-Care, and Positive Attitude within the overall Coping scale. Positive Attitude was most highly correlated with enhancing SwC, while Self-Care was most highly correlated with reducing Distress.

**Positive attitude**

This study found that Positive Attitude was the most important Coping strategy associated with SwC ($r = .391, p = .000$) and also significant in alleviating Distress ($r = -.177, p = .000$). The flow of work in practicing medicine can be overwhelming unless positive attitudes are adopted contributing to constructive organizational behavior. Without such attitudes, optimism erodes and workers are more likely to adopt patterns of behavior designed to conserve their psychological reserves, rather than performing to the limits of their capabilities, due to risk aversion and avoidance of criticism.

A positive attitude toward their various job responsibilities (i.e. “being excited about medicine” and “looking at challenges as opportunities to learn new skills”) is particularly helpful to health-care professionals in maintaining their morale. Having a positive attitude in working with colleagues and contributing to group practice operations and philosophy creates the environment where collective solutions are developed in dealing with conflict between work and family responsibilities. Sharing of clinical responsibilities allows each physician to contribute their expertise and also to recognize their own limitations rather than each individual attempting to master and do everything.

**Self-care**

Given their hectic working hours, restful sleep, regular exercise, and proper nutrition are often compromised in the lives
of physicians. The results of this research confirmed the importance of Self-Care by physicians in looking after their own health. Self-care was found to have the highest correlation with reducing Distress \((r = -0.263, p = .000)\) of the four components. Between the many routine cases there are patients who demand inappropriate treatments; take more time to understand explanations; need more reassurance than seems necessary; do not follow advice, for economic or behavioral reasons; and do not take responsibility for their own health. Such patients generate frustration, anger, discomfort, or general loss of control over the therapeutic relationship between patient and doctor. When complications or adverse events occurred for some of these patients, compounded by less than ideal therapeutic relationships, moral Distress occurred for about half of all physicians.

Despite experiencing high stress and difficulties in sleeping, physicians have been very reluctant to seek professional help. Many underestimate or suppress their problems feeling that admission is a sign of weakness or their careers could be adversely affected; while others fear documentation, potential legal consequences, or lack of confidentiality should help be sought; with unwanted interventions and potential stigmatization by colleagues.

Mindfulness-based stress reduction programs focused on meditation and relaxation in response to moment to moment sensations, experiences, and reactions plus psychological education focusing on cognitive behavioral stress prevention has frequently proven to be effective for reducing negative feelings, rumination, negative thoughts, and enhancing capacity for empathy. Cognitive restructuring of situations has also been shown to be effective in reducing stress and to reduce the maladaptive coping mechanisms of withdrawal, denial, substance abuse, or suicide.

Self-Care was found to be the most important Coping factor in reducing Distress (Table 4). As a result, physicians with better Self-Care practices are more likely to achieve a healthy work–life balance. Self-Care was also highly intercorrelated with Positive Attitude, with well-known associations with Psychological Well-Being. These results confirmed the importance of Self-Care; however, the moderate mean score of 4.86 out of 6 \((SD = 1.48)\) suggests many physicians neglect their personal health. This study found that physicians take very few pauses to relax during their workday. In the United States, physicians are at greater risk of burnout, depression, and suicide relative to the general population.

Collegiality

This research confirmed the importance of having colleagues available to give sound advice about problems, to provide relief, and to fill in while a colleague participates in CME or attends to special needs. Collegiality was found to be the most important factor within the coping construct and moderately correlated with increased SwC and slightly correlated with reduction of Distress. Talking with colleagues about professional practice issues and sharing of responsibilities are well-known coping strategies used by physicians. Collegial support has been found to buffer the negative effects of work demands, improve mental health, and increase job satisfaction and retention of health professionals. Working in teams has also been found to reduce stress and enhance satisfaction with performance of duties. More importantly, collegiality has been found to increase the quality of care provided to patients. Errors do occur in practicing medicine; and frank discussion with trusted colleagues and mentors encourages constructive learning and relieves high levels of distress. Effective mentorship by medical faculty also reduces anxiety and exhaustion among younger health professionals.

Managing work

Our results confirmed the importance of effectively managing work, being significantly correlated with reducing distress and increasing SwC. These findings fall in line with many other studies which suggest that multi-disciplinary group practices offer the best opportunities to provide care to patients in a collaborative fashion emphasizing teamwork, rather than having all first contact or gatekeeping responsibilities fall on the general practitioners’ shoulders. Physicians working in academic multi-disciplinary practices simultaneously reported higher levels of SwC, lower levels of Distress and higher levels of Coping than physicians working in traditional group practices, allowing individuals flexibility in scheduling to meet work and family commitments corroborating earlier studies.

### Table 7. Mean scores of Satisfaction with Competence by levels of Distress and Coping.

| Distress     | Coping  | Mean  | Std dev | N  |
|--------------|---------|-------|---------|----|
| Very High \((n=349)\) | Low     | 3.53  | 0.60    | 171|
|              | Moderate| 3.94  | 0.54    | 106|
|              | High    | 4.00  | 0.68    | 72 |
| High \((n=659)\) | Low     | 3.83  | 0.60    | 272|
|              | Moderate| 4.07  | 0.49    | 215|
|              | High    | 4.18  | 0.60    | 172|
| Moderate \((n=740)\) | Low     | 4.11  | 0.47    | 230|
|              | Moderate| 4.32  | 0.50    | 247|
|              | High    | 4.46  | 0.49    | 263|
| Low \((n=591)\) | Low     | 4.29  | 0.54    | 149|
|              | Moderate| 4.46  | 0.49    | 194|
|              | High    | 4.76  | 0.51    | 248|
| Very Low \((n=300)\) | Low     | 4.62  | 0.49    | 58 |
|              | Moderate| 4.71  | 0.49    | 81 |
|              | High    | 4.87  | 0.54    | 161|
| Total        |         | 4.26  | 0.64    | 2639|
Mentoring and training in effective time management, priority setting, distribution of responsibilities, and constructive communication with colleagues and staff reduces Distress among physicians. Clinical directors, hospital administrators, and department heads at academic health centers need to ensure that clinical, teaching, research, and administrative responsibilities are distributed among medical staff suitably and fairly. Medical societies need to support programs designed to improve physicians’ ability to cope with challenging workloads.

CME has reinforced the concept of resiliency with emphasis on younger physicians as their careers develop, but from time to time supporting physicians throughout their careers. Physicians in the middle stages of their careers are often asked to take on leadership positions: chairing key hospital committees, spearheading academic programs, and serving as clinical department heads which they find to be fulfilling, and our results demonstrate that academic duties are positively correlated with SwC:

Four main aspects of resiliency have been observed: 1) positive attitudes and perspectives which include valuing one’s role as a physician, maintaining interest, developing self-awareness and acceptance of personal limitations; 2) balance and prioritization, which includes setting limits, taking effective approaches to professional development and honoring one’s own well-being; 3) practice management style which includes sound business management, having good staff, and using effective practice arrangements; and 4) supportive relations, which include positive personal relationships, effective professional relationships, and good communication.

The mediating effects of coping

This study has documented the mediating effects of Coping in alleviating distress partially offsetting the erosion of SwC for physicians across Canada. Without the offsetting effects of Coping, Distress accounted for 19.3% ($\beta = -0.468, p < .001$; Panel 2, Table 6) of the explained variance in SwC. When Coping was entered with Distress, the effects of Coping were small 10.4% ($\beta = .258, p < .001$; Panel 3, Table 6); however, the effects of Distress on SwC were reduced by nearly 5% to 14.6% ($\beta = -0.416, p < .001$ Panel 3, Table 6), thus corroborating the mediating effects of Coping. The Coping strategies selected by physicians depended on the nature of distress, whether physical fatigue from overwork; emotional exhaustion from dealing with patients with intense needs; or the hassles of getting many tasks done properly, under time pressure within the resource constraints of the health system.

Coping skills seek to offset distress

Coping methods have been examined in this study and specific methods for coping with Daily Distress for physicians have been articulated. The results of this research were consistent with the findings of Lemaire and Wallace that physicians used an extensive range of coping skills ranging from maintaining a positive attitude, viewing challenging tasks as opportunities to learn, calling on colleagues to seek advice, taking proper meal breaks, getting exercise, setting aside time for activities of professional interest, planning tasks to be done, and discussing problems with staff. Recent formal programs in coping skills such as relation training; diversionary activities; and mindfulness behavior control methods are designed to increase resiliency and reduce anxiety.

Our results indicated that Coping strategies were correlated with SwC ($r = .40, p < .001$). At lower levels of Distress, when SwC falters but before burnout occurs, effective Coping may prevent medical errors; at higher levels of Distress, effective Coping may increase resiliency in physicians to enhance their capacities to carry out their responsibilities. Mentoring by peers can be valuable to help distressed physicians avoid maladaptive coping methods. Help for physicians at work can be provided at two levels: (1) peer support teams have been shown to increase the capacities of physicians in dealing with administrative challenges and frustrating patients, and (2) group debriefing sessions have been effective in resolving crises for physicians who are at risk of being overwhelmed by their responsibilities. Physicians also need to recognize their own limitations in providing care to patients and in meeting organizational responsibilities, demarcating clear limits being necessary to preserve their capacities for empathy and fulfilling their various duties.

Research limitations

The research design was cross-sectional; thus, relationships between variables should be considered as associations. Furthermore, the values of each measure are perceptions of physicians. Nevertheless, the sample was appropriately stratified, an adequate response rate obtained, and bias found to be negligible. The mediating effects of Coping were modest, but consistent at all levels of Distress, suggesting the existence of additional Coping techniques not captured by this research. Our Coping measure did not capture the maladaptive Coping methods of excessive use of alcohol or other substances. It is also possible that other variables such as organizational culture may be associated with both Distress and SwC. Further research is necessary to examine these factors. This research also suggested two additional Coping strategies: “diversion from work through pursuit of special interests” and “personal life as a sanctuary from pressures of medical practice.”

Conclusion

The positive effects of Coping abilities to alleviate Distress and enhance SwC are important findings. Collegial relief
and advice regarding clinical practice issues increase SwC, but Managing Work, Positive Attitude, and Self-Care are also important. From the perspective of patients, the most important aspect of Collegiality is discussion of clinical problems, treatment options, and care plans. Clinical discussions with patients can be emotionally exhausting when doctors have to inform families about risky and sometimes negative clinical outcomes. While empathetic communications skills can be learned, the processes of recognizing the diversity of patient responses—as they go through stages in receiving, understanding, having to accept and reframe their expectations of quality, and sometimes length, of life—can be emotionally exhausting for doctors: “Empathy is the ability to understand the patient’s experience, to communicate and confirm that understanding with the patient and then to act in a helpful manner.” Back and Arnold articulate specific communication skills necessary in working with patients as they go through stages in developing their care plans, and in the case of patients facing terminal illnesses, reframing objectives to focus on the time left for the patient so they can achieve what is most important to them.

In a study of 7584 physicians in Argentina, highly empathetic individuals are those with broad perspectives and Positive Attitudes. They are better able to understand the life situations, fears, and concerns of their patients, compared to individuals with narrower perspectives and more insular attitudes. Individuals with aversion to dealing with emotions preferring to focus on objective issues when faced with high levels of Distress are at risk of compassion fatigue leading to greater use of sick days or even burnout. Those individuals who are more altruistic with broad perspectives on life find helping patients satisfying and derive compassion satisfaction from their empathetic concern. Physicians specializing with aging issues, cancer, and debilitating conditions have to “break bad news” more often than physicians in other specializations.

Finally, having broad perspectives and altruism are also important attributes for younger specialists who undergo many years of residency training and then have to wait for opportunities to use their skills in an era where competition for permanent specialist positions is very high under the supply constraints imposed by government budgets.

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