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Resilience, Well-being, and Empathy Among Private Practice Physicians and Advanced Practice Providers in Texas: A Structural Equation Model Study

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Abstract

Objective: To investigate structural relationships of latent constructs such as occupational wellbeing, resilience, work meaningfulness, and psychological empowerment with affective and cognitive clinical empathy among a community of physicians and advanced practice providers.

Methods: We conducted a cross-sectional observational study. We gathered data by an anonymous self-administered multidimensional questionnaire disseminated electronically between March and May 2016. Participants were physicians and advanced practice providers belonging to the Health Texas Provider Network, a group private practice affiliated with the Baylor Scott and White Health system. We excluded allied health care staff (eg, nurses) and trainees (eg, residents, medical students). We pursued a 3-step strategy: (1) confirmatory factor analysis of a theory-driven measurement model, (2) a modified structural equation model from which pathways with nonsignificant path coefficients were deleted, and (3) multigroup analyses of the modified model.

Results: Cognitive empathy was the strongest predictor of affective empathy. We observed modest positive associations of resilience with cognitive and affective empathy and of well-being and meaning with affective but not with cognitive empathy. Resilience, meaning, and psychological empowerment were surprisingly negatively associated with well-being, suggesting diminished self-care among practitioners. Effects of psychological empowerment on empathy and well-being were mediated by resilience and meaning.

Conclusion: Cognitive empathy directly influenced affective empathy; well-being and meaningfulness exerted direct positive effects on affective but not on cognitive empathy, whereas resilience had direct positive associations with both empathy dimensions. Resilience and meaning manifested direct, negative associations with well-being, revealing clinicians' disproportionate focus on patient care at the expense of self-care.

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Clinical empathy is a key component of the professionalism of physicians and other patient-care practitioners.[1-3] It is defined as the capacity to resonate with or to understand what others (eg, patients) feel without confusion between one's self and others.[4] Empathetic clinical decision-making incorporates the patients' emotional experiences.[5] Empathy is a multidimensional construct[6] that is conceptualized, in health care, as comprising both an affective and a cognitive dimension. The cognitive dimension involves one's ability to understand the thoughts or perspectives of patients under one's care and to use those insights to plan and deliver their care. The affective dimension comprises one's ability to attune to or relate with patients' feelings and experiences and to communicate that to them. Cognitive empathy was once seen as the essential skill that

clinicians had to foster while staying detached emotionally.[7,8] Most experts now acknowledge the co-equal role of the affective dimension,[5,9,10] as is shown by growing neuroscientific evidence.[4,11] Instead of a passive, spontaneous, or automatic trait, empathy is also increasingly understood as a dynamic capacity that can be cultivated through deliberation, training, and practice.[12-15]

Empathy consolidates the patient-clinician relationship by facilitating greater patient trust in practitioners, which in turn improves patients' adherence to recommended treatments plus satisfactoriness of their experiences of receiving care.[16,17] Greater efficacy of prescribed treatments and higher levels of job satisfaction have been reported in physicians who engage in empathic responses more frequently.[9] Previous studies found that these benefits of greater clinician empathy collectively contribute to improved patient outcomes.[18-21] Empathetic communication by physicians is also linked to reduced risk of medical malpractice lawsuits[22] and declining health care costs due to decreases in low-value diagnostic testing.[23] Interpersonal clinical empathy could also potentially play a role in addressing disparities in health care delivery.[24]

In recent years, the well-being of physicians and other clinicians is also more widely acknowledged as an issue of paramount importance.[25-30] In the United States, physicians suffer higher rates of job distress, occupational burnout, work-related depression, and suicides than other professionals.[31-35] Diverse factors underlie such widespread demoralization among physicians.[36] Growing accountability demands, information technology changes, intractable social inequities, resource cutbacks, shrinking autonomy, and time pressure collectively create a sense of disempowerment, reducing the perceived quality of work-life.[36-41] Clinician distress is linked to greater patient dissatisfaction and mistrust plus lower adherence to treatment.[42] It interferes with the capacity to provide empathetic patient care,[43] whereas well-being enhances empathy.[44,45] A functional magnetic resonance imaging study linked burnout severity to reduced empathy-related brain activity.[46] Resilience, which is defined as one's capacity or ability to adapt, to bounce back, or even

to thrive after adversity,[47,48] acts as a buffer against stress and burnout.[49] The traditional view of resilience as a static character trait has been upended by theory[50,51] and evidence[52-54] that identifies its dynamic and transient quality. Thus, optimizing one's resilience could deepen empathy. Indeed, resilience coaching was reported, in one study, to enhance empathy.[55] Some studies find a correlation between resilience and empathy,[56] but others do not.[57] Nurturing the meaningfulness of patient care is also touted as a key to reducing clinician stress and deepening empathy.[58] Meaningfulness of work refers to the sense that work is intrinsically motivating and purposeful.[59-61] Some studies find patient-care work meaningfulness associated with clinician resilience[49]; others do not.[62] The meaning ascribed by resident physicians to patient care was found, in 1 study, to correlate with clinical empathy.[63] Individuals vary in their motivation to express empathy.[64-66] This calls for research into the extent to which empathy is driven by self-determined agency,[67] psychological empowerment,[68] and other factors conceptualized by behavioral motivation models like self-determination theory.[69] The interplay of such motivators with variables such as work meaningfulness, resilience, and professional well-being in building or deepening clinical empathy merits deeper investigation.

This study examined the association between clinical empathy and self-reported levels of psychological empowerment, inherent meaning ascribed to patient care, resilience to adversity, and occupational well-being among a population of physicians and advanced practice providers (APPs) after accounting for contextual and personal attributes. We hypothesized a significant positive association between empathy and occupational well-being, resilience, meaningfulness of patient care, and psychological empowerment or self-determined motivation. We also hypothesized that resilience, work meaningfulness, and psychological empowerment exert direct effects on occupational well-being, which then partially mediates their influence on empathy. We further hypothesized that psychological empowerment exerts an indirect effect on well-being partially mediated by its direct association with work meaningfulness

and resilience to adversity. We hypothesized these associations to be independent of individual attributes or dispositions and contextual variables.

METHODS

Study Design
We investigated the hypotheses through a cross-sectional, observational survey design. The local Institutional Review Board approved the study under protocol number 012-035. The Institutional Review Board deemed it as presenting minimal risk to participants and waived the requirements for written informed consent. Prospective participants read an information sheet that described the purposes of the study and affirmed that survey responses would be completely anonymous, that recipients were free to respond or not to respond to the survey, and that completion of the questionnaire would indicate one's informed consent.

Study Population and Data Collection
The study's target population was physicians and APPs employed by the Health Texas Provider Network (HTPN), a not-for-profit subsidiary of Baylor Scott and White Health's integrated delivery system in North and Central Texas. The HTPN functions as a group private practice. The study excluded allied health staff (eg, nurses) as they serve under a different contractual arrangement and trainees (eg, medical students) with only a transitory attachment to the institution. The data collection instrument was a self-administered multi-dimensional survey questionnaire distributed by electronic mail to prospective participants between March 29 and May 19, 2016, as a SurveyMonkey (Momentive Inc.) hyperlink. An initial email announcement followed by 2 weeks of promotional campaigns at department or division meetings preceded the survey. After its launch, we sent out 3 reminder emails, at intervals of 2 weeks apart, to encourage response from eligible prospects who were yet to participate. Of 1180 eligible respondents solicited for participation, 405 returned questionnaires (response rate of 34.32%). A total of 317 individuals provided complete responses and were included in analyses (effective response rate of 26.86%). Thus, we had complete responses from 229 of 920 (24.89%) physicians and 88 of 260 (33.85%) APPs.

Study Measures
Dependent Variables. The principal study outcomes were the following.

Clinical empathy was defined according to the 2-dimensional framework outlined before. We measured the affective dimension of empathy using the empathic concern subscale of the Interpersonal Reactivity Index (IRI) and the cognitive dimension using the perspective taking subscale of the IRI.[6] The dimension of empathic concern is the tendency to have unselfish feelings of empathy and concern toward others (eg, patients). Perspective taking is the tendency to empathically understand subjective points of view and experiences of others (eg, patients).[70] Each subscale comprises 7 items (eg, for empathic concern: *I often have tender, concerned feelings for people less fortunate than me;* for perspective taking: *I sometimes find it difficult to see things from the other person's point of view*). Respondents rate each item according to a 5-point Likert format ranging from 1, "does not describe me well", to 5, "describes me very well". We focus, in this study, on the affective and cognitive subscales of the IRI because they are most relevant to clinical practice and correlate more strongly (than the fantasy or personal distress subscales) with other valid measures of clinical empathy.[71] Two empathic concern items and 3 perspective taking items are negatively worded. Each dimension is scored by first reverse coding negative items in its subscale, then summing up all items. Thus, higher subscale scores indicate greater empathy.

Occupational well-being was conceptualized as a sum of subjective (hedonic), eudaimonic, and psychological components of well-being[72] as experienced by medical professionals during patient-care work. Our hypotheses did not focus on physical or social components of well-being. We measured this construct using the Mayo Clinic Physician Well-being Index (MCPWBI), a validated, 7-item scale that interrogates a respondent on which of 7 adverse scenarios (eg, *Have you felt burned out from your work?*) he or she has experienced in the past month.[73] Based on the set of yes/no responses, one obtains a score ranging from 0 to 7 (1 point for each item answered yes). The MCPWBI is a

self-assessment tool that enables practitioners to identify the specific effects of providing patient care that most frequently lead to work-related adversity and distress.

The secondary or intermediate outcomes of the study were the following.

Resilience was defined in our study as the extent to which practitioners positively cope with work distress or adversity by adapting effectively, bouncing back, and maintaining or enhancing their well-being.[47,48] Consistent with contemporary conceptualization, we framed resilience not as an immutable trait but as an ability or capacity that is developable with the help of personal and social resources.[50,51] We assessed resilience using the 10-item abbreviated version[74] of the original Connor-Davidson Resilience Scale (CD-RISC),[75] which a review found to be 1 of 3 most reliable measures of this construct.[76] Inclusion of factors (eg, spirituality) that foster resilience but are not part of the construct limits the original CD-RISC's conceptual validity.[77] Most studies also fail to support the original scale's 5-factor structure.[78,79] We used the 10-item scale because it has superior validity and reliability to other published versions of the CD-RISC.[80] Respondents rate each item (eg, *Having to cope with stress can make me stronger*) on a Likert-style scale ranging from 0, "not true at all", to 4, "true nearly all of the time". The scale is scored by summing up constituent items such that higher scale scores indicate greater resilience. Our pragmatic, parsimonious approach operationalized resilience as a unidimensional "overall" construct rather than a complex, multidimensional one.

Work meaningfulness, defined as the quality[59] and quantity[60] of significance that one attaches to work, was measured by the meaning subscale of the Psychological Empowerment Instrument (PEI),[68,81] which comprises 3 items (eg, *The work I do is meaningful to me*).

Independent Variables. The main predictor variables were 3 psychological empowerment cognitions:

- *competence* (ie, the self-confident perception that one has the skills, mastery, and expertise to successfully complete work tasks and responsibilities), which was measured by the PEI's 3-item

competence subscale (eg, *I am confident about my ability to do my job*);

- *sense of self-determined agency* (ie, perception of volitional engagement in intentional, goal-directed behaviors and actions that are congruent with one's intrinsic values and personal interests), which was measured by the PEI's 3-item self-determination subscale (eg, *I can decide on my own how to go about doing my work*); and

- *ability to effect or impact change* (ie, self-perceived extent to which one influences clinical, strategic, administrative, or operating outcomes), which was assessed by the PEI's 3-item impact subscale (eg, *My impact on what happens in my department is large*).

Respondents rate their agreement with each PEI subscale item according to a 7-level Likert-style format that ranges from 1, "strongly disagree", to 7, "strongly agree".[81]

Covariates. *Personality traits*, the secondary predictor variable, were assessed by the 10-Item Personality Inventory (TIPI),[82] a short-form measure derived from the 5-dimensional Big Five model of personality.[83] The TIPI comprises 2 brief descriptions for each of 5 personality dimensions: agreeableness, conscientiousness, extraversion, neuroticism, and openness (eg, *extraverted, enthusiastic* for extraversion). Each item leads with the stem "I see myself as," followed by a personality trait's description to which respondents indicate agreement based on a 7-point Likert-style rating from 1, "disagree strongly", to 7, "agree strongly". Researchers tend to use the TIPI when personality is not the principal focus of study hypotheses and a brief screening measure will suffice.

We further assessed provider demographics such as age, sex, relationship status, race or ethnicity, length of organizational tenure (in years) with HTPN, title of clinical position or role, physician vs APP status, and primary vs specialty or subspecialty care service.

Statistical Analyses

We first screened the distribution of study variables for univariate and multivariate

normality. We measured the internal consistency reliability of each scale and subscale using the ordinal coefficient α (which is more accurate than Cronbach α for assessing ordinal variables),[84,85] the composite (congeneric) reliability,[86] and the average variance extracted (AVE).[87] We used a polychoric correlation matrix of subscale and scale scores to assess unadjusted bivariate associations between latent constructs. Polychoric correlations are more accurate than Pearson or Spearman correlations for ordinal and categorical variables.[88] We deemed correlation coefficients above 0.30 as indicating a moderate relationship and those above 0.50 as indicating a strong one.[89]

Principal multivariate analyses were conducted by a standard 2-step approach to structural equation modeling: confirmatory factor analysis of the hypothesized measurement model, then extraction of the structural model that fits the data best.[90] We tested the theorized model's factor structure by fitting observed measures (item scores) as indicator variables to their respective latent constructs. Confirmatory factor analysis/structural equation modeling is a more robust approach (than regression methods) to testing our hypotheses as it permits specification of causal relationships between observed (indicator) variables and latent constructs while accounting for item-level measurement error,[91] and it accommodates the simultaneous testing of multiple mediator variables.[92] We evaluated each model's overall fit to the data using standard criteria, such as the chi-square statistic divided by degrees of freedom (χ^2/df), comparative fit index (CFI), Tucker-Lewis Index (TLI), and root mean square error of approximation (RMSEA) with its 90% confidence interval.[93]

We tested the structural model's invariance across subgroups of our sample by comparing global fit to the full sample vs each subgroup or to a given subgroup vs another. Rather than assume ex ante the personalities existing in our sample, we identified underlying personality typologies[94] by latent profile analysis (LPA)[95] of scores on the 5 TIPI subscales. We used indices such as entropy, Bayesian information criterion (BIC), and sample size—adjusted BIC, Akaike's information criterion, Lo-Mendell-Rubin (LMR) and/or Vuong-

Mendell-Rubin (vLMR) likelihood ratio tests to evaluate LPA models.[96] Entropy values close to 0.80 (ie, that classified 80% of individuals correctly) indicated good model fit. Lower values on the BIC, sample size—adjusted BIC, and AIC indicated a better-fitting LPA model. Statistically significant LMR and vLMR tests indicated that the LPA model with more profiles provided significantly better fit to the study data than the model with 1 less profile. We subjected the empirically derived personality typologies to multigroup analyses in the same manner as the other subgroup categories. We treated model findings as significantly different for the full sample vs a subgroup, or between subgroups, if change/difference in CFI (ΔCFI) between compared subpopulations or populations exceeded ±0.01,[97,98] or change/difference in RMSEA (ΔRMSEA) exceeded ±0.015,[98] or path coefficients changed/differed sufficiently in magnitude or direction to warrant variant inferences for compared subpopulations or populations.

Confirmatory factor analysis/structural equation modeling analyses were conducted with the lavaan package in R version 3.6.0 (R Foundation for Statistical Computing), the CALIS procedure in SAS version 9.4 (SAS Inc), and Mplus version 7.4 (Muthén & Muthén). Distribution of study measures was not joint multivariate normal, so we specified DWLS (diagonally weighted least squares) estimators in R and SAS, plus WLSMV (weighted least squares, mean and variance adjusted) estimator in Mplus, instead of the ML (maximum likelihood) estimator. DWLS/WLSMV estimation is robust to normality assumption violations.[99] We performed LPA using Mplus 7.4 and R 3.6.0 (the tidyLPA package).

RESULTS

Characteristics of the Study Sample

Of the respondents (n=317) with complete responses to the survey, 59.3% (188) were female, 80.4% (255) were married, 72.2% (229) were physicians or surgeons vs 27.8% (88) who were APPs, and 57.7% (183) served in primary care vs 42.3% (134) who were in specialist or subspecialist roles. Most (54.3% [172]) respondents had spent less than 5 years

with HTPN. The mean ($\pm$ SD) age of respondents was 44.7 ($\pm$10.3) years, with 68.9% (218) being younger than 50 years; 72.6% (230) of the overall sample (69.4% of physicians or surgeons vs 80.7% of APPs) were of White/Caucasian racial background, and 7.6% (24) of all respondents (7.4% of physicians, 8.0% of APPs) were of Hispanic/Latino ethnicity.

Distribution of the Study Measures

Only the PEI's meaning (skewness, -2.04; kurtosis, 6.95) and competence subscales (skewness, -1.33; kurtosis, 3.74) had univariate skewness and kurtosis values exceeding |1.0|. Histogram plots (not shown) indicated that scores on PEI's meaning and competence subscales plus the TIPI's conscientiousness subscale had a visibly prominent negative skew. By contrast, the TIPI's neuroticism subscale had a prominent positive skew, whereas the PEI's self-determination subscale and the TIPI's extraversion subscale had multiple peaks. The Shapiro-Wilk test statistic ranged from 0.78 (lowest, for the TIPI's conscientiousness subscale) to 0.97 (highest, for the CD-RISC scale, IRI's empathic concern subscale, and PEI's impact subscale), with all P values less than .0001. We thus reject the null hypothesis of normal distribution for subscale and scale scores. Mardia tests for multivariate skewness and kurtosis were statistically significant ($P<.0001$), indicating violation of the multivariate normality assumption. Details of subgroup-level variations in the distribution of study measures are in the Supplemental Table and Supplemental Figure (available online at http://www.mcpiqojournal.org).

Reliability and Validity of the Study Measures

Values for the ordinal coefficient α, Cronbach coefficient α, and composite reliability were each 0.70 or higher for all the subscales and scales, indicating that they were reliable measures of their latent constructs. Values for the AVE were either close to or above 0.50, which supports the convergent validity of the measures. Although the AVE values for the empathic concern (0.45) and perspective taking (0.40) subscales of the IRI plus the MCPWI (0.46) fell slightly below the

recommended threshold, the deviations were arguably not large enough to justify deletion of single items from these well-validated instruments. We elected to retain the original structures of the subscales and scales to maintain comparability with findings from previous studies. Square roots of AVEs ($\sqrt{\text{AVE}}$) for the subscales and scales exceeded the correlations between the measures, which supports their discriminant validity. Table 1 outlines the dispersion, reliability, and validity indices for the study measures.

Univariate Associations Between Study Measures

Table 2 depicts the polychoric correlation matrix between the measures. The strongest correlations were between the impact and self-determination subscales of the PEI (0.70), the competence and meaning subscales of the PEI (0.58), the empathic concern and perspective taking subscales of the IRI (0.53), and the meaning and self-determination subscales of the PEI (0.51). Moderate to strong correlations existed between PEI-impact and PEI-meaning (0.47) as well as between CD-RISC-10 and MCPWBI (-0.44). PEI-competence and PEI-self-determination (0.39), PEI-competence and CD-RISC-10 (0.38), PEI-meaning and CD-RISC (0.36), PEI$-$self-determination and CD-RISC-10 (0.35), and PEI-impact and CD-RISC-10 (0.32) showed moderate correlations. Of the study measures, the respondent's age correlated most with PEI-competence (0.31), followed by CD-RISC-10 (0.15). Age had low, negative, but statistically insignificant correlations with well-being (-0.15) and empathy (-0.12 for empathic concern; -0.04 for perspective taking). Respondents' tenure at HTPN correlated most with age (0.34), PEI-competence (0.17), and PEI-impact (0.12).

Confirmatory Factor Analysis of Hypothesized Measurement Model

The hypothesized measurement model showed good overall fit to the data according to the criteria of Hu and Bentler[93]: $\chi^2 = 1490.85$, $df = 903$; $\chi^2/df = 1.65$, $P<.001$; CFI, 0.9992; goodness of fit index (GFI), 0.9993; TLI, 0.9550; RMSEA (90% CI), 0.0546 (0.0531 to 0.0750); and standardized root mean square residual (SRMR), 0.0550.

TABLE 1. Descriptive Statistics. Dispersion. and Reliability of Scores on the Study Measures

Construct assessed	Measure (subscale or scale)	Count of items	Mean score (±SD)	Skewness	Kurtosis	Ordinal coefficient α (ρ)	Cronbach coefficient α	Composite reliability	Average variance extracted
Empathic concern	Empathic subscale of the IRI	7	21.6 (±4.2)	−0.47	−0.32	0.84	0.78	0.85	0.45
Perspective taking	Perspective taking subscale of the IRI	7	19.8 (±4.3)	−0.40	0.01	0.81	0.77	0.82	0.40
Occupational well-being	Mayo Clinic Physician Well-being Index	7	2.6 (±1.8)	0.37	−0.87	0.83	0.71	0.84	0.46
Resilience	10-Item short form of the Connor-Davidson Resilience Scale	10	31.4 (±5.4)	−0.46	0.02	0.92	0.88	0.93	0.56
Work meaningfulness	Meaning subscale of the PEI	3	6.2 (±0.9)	−2.04	6.95	0.91	0.83	0.92	0.79
Self-rated professional competence	Competence subscale of the PEI	3	6.0 (±0.9)	−1.33	3.74	0.85	0.76	0.85	0.66
Sense of personal agency	Self-determination subscale of the PEI	3	4.9 (±1.4)	−0.79	0.27	0.92	0.90	0.92	0.80
Self-perceived ability to effect change	Impact subscale of the PEI	3	4.3 (±1.6)	−0.26	−0.69	0.93	0.92	0.94	0.84

IRI, Interpersonal Reactivity Index; PEI, Psychological Empowerment Instrument.

However, the empirical data did not support a number of the hypothesized paths in the measurement model. For instance, the effect of occupational well-being (MCPWBI) on perspective taking was not significant (β, 0.07; standard error [SE], 0.08; $P>.05$), whereas that on empathic concern was significant (β, 0.19; SE, 0.07; $P<.05$). Likewise, PEI-meaning showed no significant effect on perspective taking (β, 0.07; SE, 0.08; $P>.05$) but exerted a significant influence on empathic concern (β, 0.18; SE, 0.06; $P<.05$). The empirical data did not support the hypothesized pathway from work meaningfulness to resilience. To derive the most plausible structural model, we deleted from the measurement model all the paths that did not reach statistical significance.

Structural Model

The reduced structural model manifested a good global fit to the full study sample: $\chi^2/df = 1.593$, $P<.001$; CFI, 0.991; GFI, 0.992; TLI, 0.990; RMSEA (90% CI), 0.043 (0.039 to 0.048); and SRMR, 0.071. Table 3 outlines the standardized path coefficients for the direct and indirect effects in this model and the squared multiple correlations (R^2) for each of the latent variables. The proportion of variability explained by the pathways specified in the structural model was approximately 59% for work meaningfulness, 51% for empathic concern, 34% for well-being, 25% for resilience, and 20% for self-rated competence. The model, however, explained only 9% of variability in perspective taking. The Figure illustrates the modified model with the standardized path coefficients and their SEs.

Perspective taking (β, 0.65; SE, 0.04; $P<.001$), occupational well-being (β, 0.24; SE, 0.09; $P=.006$), work meaningfulness (β, 0.19; SE, 0.06; $P=.003$), and resilience (β, 0.17; SE, 0.06; $P=.009$) had the most prominent total effects on empathic concern. Well-being and meaning directly influenced empathic concern. Perspective taking did not significantly mediate their effects on empathic concern. By contrast, the effects of competence, self-determination, and impact on empathic concern were almost fully mediated through well-being, resilience, and meaning. Resilience had the strongest effect (β, 0.27;

No.	Construct	1 Empathic	2 Perspective	3 Well-being	4 Resilience	5 Meaning	6 Competence	7 Self-determined personal agency	8 Impact
	TABLE 2. Polychoric Correlation Matrix of the Construct Measures								
1	Empathic concern	1.000							
2	Perspective taking	0.5323[b]	1.000						
3	Occupational well-being	0.0165	−0.0952	1.000					
4	Resilience	0.2195[b]	0.2576[b]	−0.4442[b]	1.000				
5	Work meaningfulness	0.2460[b]	0.1992[b]	−0.1908	0.3570[b]	1.000			
6	Competence	0.0849	0.0407	−0.2179[b]	0.3783[b]	0.5818[b]	1.000		
7	Self-determined personal agency	0.1125[a]	0.0672	−0.2881[b]	0.3540[b]	0.5125[b]	0.3891[b]	1.000	
8	Ability to impact change	0.1129[a]	0.0848	−0.2738[b]	0.3173[b]	0.4667[b]	0.2703[b]	0.7000[c]	1.000

[a]$P<.05$.
[b]$P<.001$.

SE, 0.06; $P<.001$) on perspective taking, and this effect was direct and not mediated through well-being. Competence, self-determination, and impact exerted only an indirect influence on perspective taking, mediated by resilience.

Surprisingly, the strongest influence on well-being, namely, resilience (β, −0.51; SE, 0.06; $P<.001$), had a direct and negative effect. Work meaningfulness also had a direct effect on wellbeing directly but in a negative direction. Furthermore, competence, self-determination, and impact all exerted their effects on well-being indirectly, mediated by resilience and meaning, but these influences were negative. These constructs influenced well-being in a direction that was contrary to what we hypothesized. Competence and impact exerted direct, positive effects on both resilience and meaning. Effects of self-determination on both resilience and meaning were, by contrast, indirect and mediated by competence and impact.

Among LPA models of personality traits, a 2-profile typology provided the best fit to data. Profile 1 had high scores on agreeableness/ openness traits but low scores on neuroticism. Profile 2 had high scores on neuroticism but low scores on agreeableness/openness. The profile with high openness/agreeableness was thus more adaptable, whereas the neurotic/ excitable profile was less adaptable. Table 4
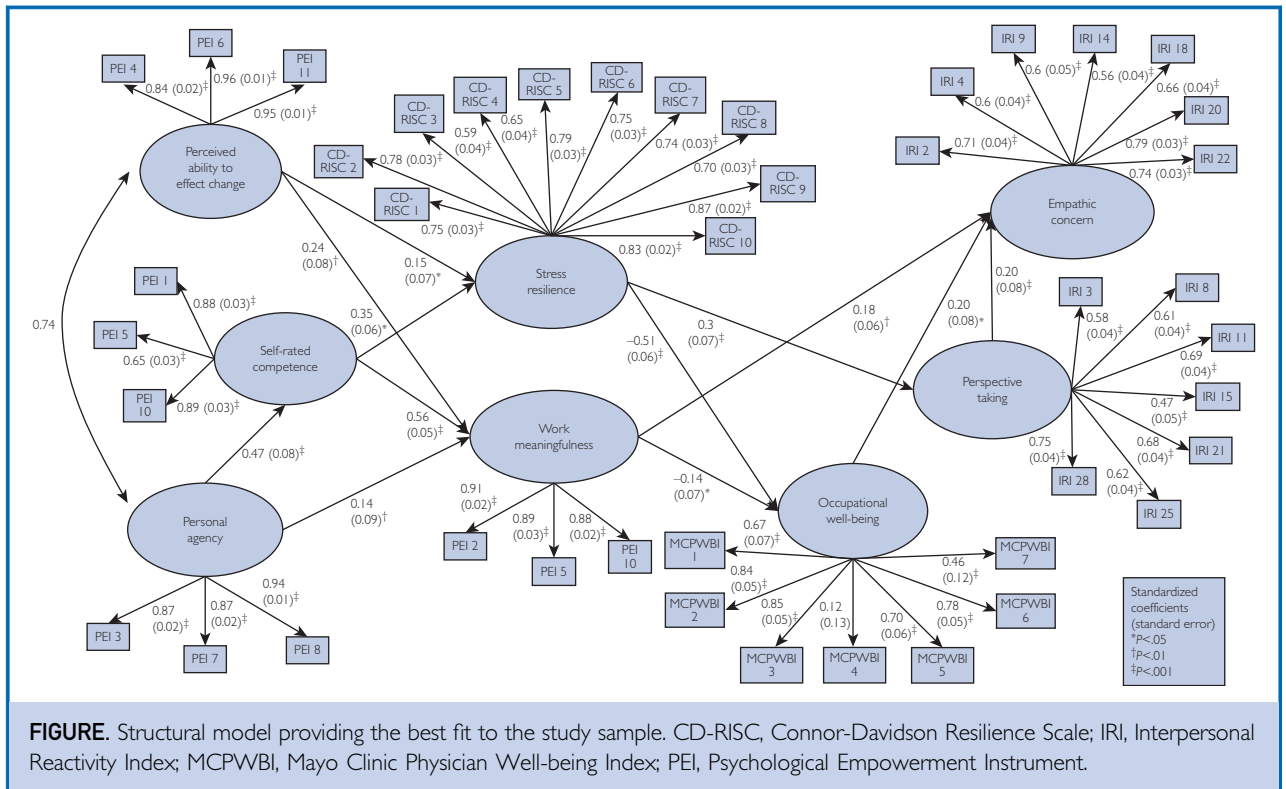
outlines the global fit indices of the modified structural model in various subgroups of the study sample. The structural model showed good overall fit to the diverse subpopulations (CFI ≥ 0.95, TLI ≥ 0.95, and RMSEA ≤0.06 in almost all subgroups). There were intergroup differences, however, in the modeled relationships.

Table 5 details the standardized path coefficients for the model within the different subpopulations. Well-being had a strong, positive effect on empathic concern among married (but not among unmarried) practitioners and among the neurotic/excitable personality profile but not among the open/agreeable profile. Resilience had a significant, positive effect on empathic concern among the neurotic personality profile but not among the open/agreeable profile and among practitioners younger than 50 years but not among those 50 years of age or older. Resilience also had a significant, positive effect on perspective taking among women but not among men and among open/agreeable practitioners but not among neurotic ones. Work meaningfulness positively influenced perspective taking among unmarried but not among married practitioners. Competence was positively associated with both resilience and meaning among open/agreeable individuals but not among neurotic/excitable ones. Self-determination was positively associated with resilience

TABLE 3. Standardized Coefficients for the Direct and Indirect Effects in the Modified Structural Model

Endogenous (dependent) variables	Exogenous (predictor) variables	Direct effect		Indirect effect		Total effect		Squared multiple correlation (R^2)
		β_{dir} (SE)	P	β_{indir} (SE)	P	β_{total} (SE)	P	
Empathic concern	Perspective taking	**0.65 (0.04)**	**<.001**			**0.65 (0.04)**	**<.001**	0.507
	Well-being at work	**0.20 (0.08)**	**.010**	0.04 (0.05)	.405	**0.24 (0.09)**	**.006**	
	Resilience	0.09 (0.07)	.199	0.07 (0.06)	.219	**0.17 (0.06)**	**.009**	
	Meaning of work	**0.18 (0.06)**	**.002**	0.01 (0.05)	.801	**0.19 (0.06)**	**.003**	
	Competence			**0.16 (0.03)**	**<.001**	**0.16 (0.03)**	**<.001**	
	Self-determination			**0.12 (0.03)**	**<.001**	**0.12 (0.03)**	**<.001**	
	Impact			**0.06 (0.02)**	**.013**	**0.06 (0.02)**	**.013**	
Perspective taking	Well-being at work	0.07 (0.08)	.406			0.07 (0.08)	.406	0.092
	Resilience	**0.30 (0.07)**	**<.001**	−0.04 (0.04)	.409	**0.27 (0.06)**	**<.001**	
	Meaning of work	0.07 (0.07)	.296	−0.01 (0.01)	.448	0.06 0(.07)	.360	
	Competence			**0.16 (0.03)**	**<.001**	**0.16 (0.03)**	**<.001**	
	Self-determination			**0.10 (0.04)**	**.008**	**0.10 (0.04)**	**.008**	
	Impact			**0.05 (0.03)**	**.042**	**0.05 (0.03)**	**.042**	
Well-being at work	Resilience	**−0.51 (0.06)**	**<.001**			**−0.51 (0.06)**	**<.001**	0.340
	Meaning of work	**−0.14 (0.07)**	**.034**			**−0.14 (0.07)**	**.034**	
	Competence			**−0.26 (0.05)**	**<.001**	**−0.26 (0.05)**	**<.001**	
	Self-determination			**−0.20 (0.05)**	**<.001**	**−0.20 (0.05)**	**<.001**	
	Impact			**−0.10 (0.05)**	**.024**	**−0.10 (0.05)**	**.024**	
Resilience	Competence	**0.35 (0.06)**	**<.001**			**0.35 (0.06)**	**<.001**	0.254
	Self-determination	0.11 (0.09)	.213	**0.17 (0.04)**	**<.001**	**0.28 (0.08)**	**.001**	
	Impact	**0.15 (.07)**	**.040**	−0.01 (0.03)	.692	0.14 (0.08)	.073	
Work meaningfulness	Competence	**0.35 (0.06)**	**<.001**			**0.56 (0.05)**	**<.001**	0.588
	Self-determination	0.14 (0.09)	.124	**0.26 (0.05)**	**<.001**	**0.40 (0.08)**	**<.001**	
	Impact	**0.24 (0.08)**	**.002**	−0.02 (0.05)	.692	**0.22 (0.08)**	**.006**	
Competence	Self-determination	**0.47 (0.08)**	**<.001**			**0.47 (0.08)**	**<.001**	0.198
	Impact	−0.03 (0.08)	.689			−0.03 (0.08)	.689	

β_{dir}, direct path coefficient; β_{indir}, indirect path coefficient; SE, standard error.
Boldface values are statistically significant.

FIGURE. Structural model providing the best fit to the study sample. CD-RISC, Connor-Davidson Resilience Scale; IRI, Interpersonal Reactivity Index; MCPWBI, Mayo Clinic Physician Well-being Index; PEI, Psychological Empowerment Instrument.

among neurotic/excitable but not among open/agreeable practitioners but positively associated with meaning among open/agreeable and not among neurotic practitioners. Self-determination had a negative association with resilience among unmarried but not among married respondents. Impact had a positive association with resilience among practitioners younger than 50 years but not among those 50 years of age and older. Impact also positively influenced meaning among the married but not among the unmarried respondents and among neurotic/excitable but not among open/agreeable ones.

DISCUSSION

In a cross-sectional observational study of physicians and APPs within a large health care system, we investigated direct and indirect effects of well-being at work, resilience toward adversity, work meaningfulness, and psychological empowerment cognitions on affective and cognitive dimensions of clinical empathy, independent of contextual and personal variables. In summary, cognitive empathy exerted a positive effect on affective

empathy that varied little between subgroups; well-being had a positive association with affective empathy moderated by marital status and personality type; work meaningfulness exerted a positive effect on affective empathy that was invariant across subgroups; well-being and meaning had no association with cognitive empathy; resilience had a positive effect on affective empathy that varied by age and personality and on cognitive empathy that varied by sex and personality; resilience and meaning both exerted a surprisingly negative effect on well-being; and psychological empowerment (impact, self-determination, and competence) influenced clinical empathy and well-being indirectly through pathways mediated by resilience and meaning.

Our finding that cognitive empathy had a significant, positive influence on affective empathy corresponds with reports from previous studies.[100] When clinicians excel at adopting patients' points of view, their altruistic emotional responses and prosocial helping behaviors reach an optimum. To evoke optimal levels of affective empathy, practitioners must exercise cognitive flexibility and invest mental

TABLE 4. Global Fit Indices for the Structural Model in the Overall Sample vs Within Subgroups of the Sample

Population or subpopulation	No. of free parameters	RMSEA	(90% CI)	SRMR	CFI	GFI	TLI	χ^2	df
Full sample	251	0.043	(0.039-0.048)	0.071	0.991	0.982	0.990	1340.96	842
Sex									
Female	237	0.035	(0.027-0.042)	0.085	0.993	0.974	0.992	1035.26	842
Male	223	0.051	(0.042-0.058)	0.103	0.990	0.969	0.990	1115.41	842
Age group									
≥50 years	221	0.041	(0.027-0.052)	0.121	0.993	0.961	0.993	974.14	842
<50 years	237	0.048	(0.043-0.054)	0.084	0.988	0.974	0.988	1253.14	842
Marital status									
Married	246	0.044	(0.039-0.049)	0.078	0.990	0.978	0.989	1250.38	842
Single	208	0.049	(0.031-0.063)	0.133	0.992	0.950	0.991	965.40	842
Personality profile									
Open/agreeable	237	0.045	(0.041-0.051)	0.084	0.989	0.976	0.988	1253.10	842
Neurotic	224	0.056	(0.049-0.071)	0.120	0.986	0.948	0.985	1052.34	842
Race category									
White	243	0.038	(0.032-0.044)	0.078	0.993	0.980	0.993	1117.78	842
Non-White	216	0.049	(0.036-0.059)	0.133	0.992	0.950	0.991	1103.68	842
Tenure with the organization									
≥5 years	232	0.061	(0.054-0.068)	0.112	0.982	0.962	0.981	1269.38	842
<5 years	230	0.041	(0.033-0.047)	0.088	0.992	0.973	0.991	1078.38	842
Practitioner role									
Physician	240	0.047	(0.042-0.052)	0.081	0.990	0.978	0.989	1270.51	842
APP	217	0.049	(0.037-0.060)	0.121	0.987	0.946	0.986	1019.96	842
Specialization									
Primary care	239	0.045	(0.040-0.052)	0.093	0.992	0.970	0.991	1066.98	842
Specialty care	225	0.046	(0.036-0.053)	0.091	0.989	0.973	0.988	1169.70	842

APP, advanced practice provider; CFI, comparative fit index; GFI, goodness of fit index; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual; TLI, Tucker-Lewis Index.

effort in emotional self-regulation.[101] One's cognitive capacity for self-regulation is limited, such that depletion of cognitive resources also lowers one's empathic concern.[102] Cognitive and affective empathy thus complement each other.[103]

The positive association between well-being and affective empathy in our study bears similarity to findings from past studies.[44-46,104] Many studies, however, found well-being (or lack thereof) to be more significantly associated with cognitive than with affective empathy,[44,46] yet our finding was the exact opposite. Existing theory suggests that poor well-being hinders practitioners' emotional capacity to empathize with patients[9,105,106] by fostering alexithymic tendencies (ie, difficulties in identifying, differentiating, and describing one's and others' emotional states).[100] Our findings align with that conceptualization. Potential confounding with the quality and quantity of spousal social support[107] could partially explain the larger effect of well-being on affective empathy that we observed among married practitioners. Personality traits are reported by some studies to be associated with empathy.[108] Confounding might thus partially explain the variance by personality profile that we observed in the effect of well-being on affective empathy.

The finding in this study of a significant positive association between intrinsic

TABLE 5. Standardized Path Coefficients for the Structural Model Within Demographic Subgroups of the Study Sample

| | | Sex, Age, Marital Status, and Personality | | | | | | | |
| Endogenous (dependent) variables | Exogenous (predictor) variables | Sex | | Age group | | Marital status | | Personality | |
		Female	Male	≥50 years	<50 years	Married	Unmarried	Open/agreeable	Neurotic
Empathic concern	Perspective taking	0.65 (0.04)[c]	0.77 (0.04)[c]	0.78 (0.09)[c]	0.68 (0.05)[c]	0.70 (0.04)[c]	0.50 (0.10)[c]	0.62 (0.06)[c]	0.57 (0.08)[c]
	Well-being	0.20 (0.08)[a]	0.31 (0.11)[b]	0.19 (0.12)	0.23 (0.10)[a]	0.30 (0.09)[b]	0.00 (0.12)	0.05 (0.09)	0.54 (0.14)[c]
	Resilience	0.09 (0.07)	0.01 (0.11)	−0.18 (0.12)	0.21 (0.08)[b]	0.12 (0.09)	0.05 (0.13)	−0.01 (0.08)	0.28 (0.13)[a]
	Meaning	0.18 (0.06)[b]	0.31 (0.09)[b]	0.13 (0.10)	0.14 (0.06)[a]	0.21 (0.07)[b]	0.17 (0.09)	0.16 (0.07)[a]	0.25 (0.11)[a]
Perspective taking	Well-being	0.07 (0.08)	−0.05 (0.12)	−0.15 (0.14)	0.15 (0.10)	0.00 (0.10)	0.25 (0.13)	0.15 (0.09)	0.15 (0.17)
	Resilience	0.30 (0.07)[c]	0.15 (0.12)	0.32 (0.13)[a]	0.31 (0.08)[c]	0.25 (0.09)[b]	0.44 (0.10)[c]	0.34 (0.08)[c]	0.08 (0.13)
	Meaning	0.07 (0.07)	0.11 (0.11)	0.22 (0.11)[a]	0.01 (0.08)	0.02 (0.08)	0.24 (0.10)[a]	0.07 (0.08)	0.24 (0.13)
Well-being	Resilience	−0.51 (0.06)[c]	−0.51 (0.10)[c]	−0.48 (0.11)[c]	−0.52 (0.07)[c]	−0.55 (0.07)[c]	−0.44 (00.12)[c]	−0.44 (0.08)[c]	−0.53 (0.10)[c]
	Meaning	−0.14 (0.07)[b]	−0.10 (0.10)	−0.14 (0.11)	−0.13 (0.08)	−0.14 (0.08)	−0.14 (0.13)	−0.21 (0.09)[a]	−0.10 (0.13)
Resilience	Competence	0.35 (0.06)[c]	0.27 (0.09)[b]	0.35 (0.10)[c]	0.35 (0.07)[c]	0.34 (0.07)[c]	0.60 (0.10)[c]	0.44 (0.07)[c]	0.26 (0.11)
	Self-determined personal agency	0.11 (0.09)	0.24 (0.13)	0.16 (0.16)	0.08 (0.10)	0.18 (0.10)	−0.43 (0.14)[b]	0.05 (0.11)	0.31 (0.14)[a]
	Impact	0.15 (0.07)[a]	0.14 (0.11)	0.01 (0.12)	0.24 (0.09)[a]	0.16 (0.08)[a]	0.29 (0.13)[a]	0.12 (0.09)	0.12 (0.14)
Meaning	Competence	0.56 (0.05)[c]	0.63 (0.08)[c]	0.69 (0.08)[c]	0.53 (0.06)[c]	0.61 (0.06)[c]	0.48 (0.10)[c]	0.60 (0.06)[c]	0.34 (0.12)[b]
	Self-determined personal agency	0.14 (0.09)	0.23 (0.12)	−0.12 (0.12)	0.16 (0.12)	0.12 (0.10)	0.21 (0.19)	0.27 (0.10)[b]	−0.01 (0.19)
	Impact	0.24 (0.08)[b]	0.17 (0.10)	0.42 (0.10)[c]	0.25 (0.10)[a]	0.27 (0.09)[b]	0.07 (0.19)	0.09 (0.09)	0.45 (0.14)[b]
Competence	Self-determined personal agency	0.47 (0.08)[c]	0.54 (0.12)[c]	0.62 (0.11)[c]	0.42 (0.10)[c]	0.48 (0.10)[c]	0.55 (0.13)[c]	0.44 (0.10)[c]	0.53 (0.13)[c]
	Impact	−0.03 (0.08)	0.08 (0.12)	0.02 (0.12)	−0.09 (0.10)	−0.08 (0.09)	0.05 (0.15)	0.01 (0.11)	−0.16 (0.12)

| | | Race, Tenure, Practitioner Role, and Specialization | | | | | | | |
| Endogenous (dependent) variables | Exogenous (predictor) variables | Race | | Tenure at Health Texas Provider Network | | Practitioner role | | Specialization status | |
		White	Non-White	≥5 years	<5 years	Physician	Advanced practice provider	Primary care	Specialized care
Empathic concern	Perspective taking	0.67 (0.05)[c]	0.56 (0.09)[c]	0.65 (0.09)[c]	0.68 (0.05)[c]	0.70 (0.04)[c]	0.50 (0.01)[c]	0.68 (0.07)[c]	0.76 (0.06)[c]
	Well-being	0.19 (0.09)[a]	0.18 (0.15)	0.23 (0.12)	0.17 (0.10)	0.30 (0.09)[b]	0.00 (0.12)	−0.06 (0.11)	0.52 (0.12)[c]
	Resilience	0.07 (0.09)	0.16 (0.12)	−0.07 (0.14)	0.19 (0.08)[a]	0.12 (0.09)	0.05 (0.13)	−0.16 (0.10)	0.32 (0.10)[b]
	Meaning	0.20 (0.06)	0.09 (0.13)	0.25 (0.10)[a]	0.14 (0.07)[a]	0.21 (0.07)[b]	0.17 (0.09)	0.12 (0.07)	0.33 (0.09)[c]
Perspective taking	Well-being	0.02 (0.10)	0.14 (0.14)	0.12 (0.13)	0.01 (0.11)	0.00 (0.10)	0.25 (0.13)	0.27 (0.09)[b]	−0.18 (0.13)
	Resilience	0.32 (0.09)[c]	0.24 (0.12)[a]	0.55 (0.10)[c]	0.19 (0.09)[a]	0.25 (0.09)[b]	0.44 (0.10)[c]	0.46 (0.08)[c]	0.15 (0.11)
	Meaning	0.10 (0.08)	0.00 (0.12)	−0.04 (0.11)	0.12 (0.09)	0.02 (0.08)	0.24 (0.10)[a]	0.16 (0.08)[a]	−0.05 (0.10)

Continued on next page

TABLE 5. Continued

Endogenous (dependent) variables	Exogenous (predictor) variables	Race		Tenure at Health Texas Provider Network		Practitioner role		Specialization status	
		White	Non-White	≥5 years	<5 years	Physician	Advanced practice provider	Primary care	Specialized care
Well-being	Resilience	−0.58 (0.07)[c]	−0.32 (0.11)[b]	−0.54 (0.10)[c]	−0.48 (0.07)[c]	−0.55 (0.07)[c]	−0.44 (0.12)[c]	−0.53 (0.08)[c]	−0.47 (0.09)[c]
	Meaning	−0.06 (0.08)	−0.34 (0.12)[b]	−0.13 (0.10)	−0.18 (0.08)[a]	−0.14 (0.08)	−0.14 (0.13)	−0.09 (0.09)	−0.21 (0.09)[a]
Resilience	Competence	0.33 (0.07)	0.39 (0.11)[c]	0.42 (0.10)[c]	0.40 (0.08)[c]	0.34 (0.07)[c]	0.60 (0.10)[c]	0.32 (0.08)[c]	0.44 (0.08)[c]
	Self-determined personal agency	0.15 (0.10)	−0.12 (0.19)	0.18 (0.12)	−0.20 (0.15)	0.18 (0.10)	−0.43 (0.14)[b]	0.07 (0.10)	0.11 (0.15)
	Impact	0.14 (0.09)	0.36 (0.14)[b]	0.04 (0.09)	0.44 (0.13)[b]	0.16 (0.08)[b]	0.29 (0.13)[a]	0.21 (0.09)[a]	0.13 (0.12)
Meaning	Competence	0.56 (0.06)[c]	0.58 (0.11)	0.60 (0.08)[c]	0.60 (0.07)[c]	0.61 (0.06)[c]	0.48 (0.01)[c]	0.52 (0.07)[c]	0.59 (0.07)[c]
	Self-determined personal agency	0.17 (0.11)	−0.24 (0.17)	0.05 (0.11)	0.07 (0.15)	0.12 (0.10)	0.21 (0.19)	0.25 (0.11)[a]	0.01 (0.14)
	Impact	0.16 (0.09)	0.67 (0.17)[c]	0.23 (0.08)[b]	0.36 (0.13)[c]	0.27 (0.09)[a]	0.07 (0.19)	0.17 (0.10)	0.33 (0.13)[b]
Competence	Self-determined personal agency	0.50 (0.09)[c]	0.46 (0.17)[b]	0.54 (0.08)[c]	0.54 (0.17)[c]	0.48 (0.10)[c]	0.55 (0.13)[c]	0.35 (0.10)[c]	0.62 (0.13)[c]
	Impact	−0.08 (0.09)	0.01 (0.19)	0.00 (0.08)	−0.21 (0.18)	−0.08 (0.09)	0.05 (0.15)	0.03 (0.10)	−0.15 (0.14)

Table spanning header: Race, Tenure, Practitioner Role, and Specialization

[a] $P<.05$.
[b] $P<.01$.
[c] $P<.001$.

All values are presented as standardized β coefficients (standard errors).

meaningfulness of work and affective clinical empathy is similar to results of a previous study among resident physicians.[63] This relationship is likely due to the fact that a sense of unity with others, a key source of meaningfulness of work within organizations,[61,109] is equally an ingredient in the capacity to express empathic concern for others. By contrast, we did not observe a significant association between meaningfulness of clinical work and cognitive empathy among medical practitioners. Future studies should explore this further across disparate health care delivery systems plus different time points of assessment and among more diverse clinical practitioner categories.

Similar to Morice-Ramat et al[56] but unlike McFarland and Roth,[57] we observed a small but significant positive association between resilience and empathy. The relationship, which was stronger for cognitive than for affective empathy, varied by sex and personality for cognitive empathy and with age and personality for affective empathy. Sex and clinical experience (a proxy for age) were also significant covariates among resident physicians in the study of Morice-Ramat et al.[56] Personality traits have themselves been linked to resilience in other studies[110] and are thus likely to confound the resilience-empathy association, as in this study.

The most surprising observations in our study were the negative associations between resilience and work meaningfulness, on the one hand, and well-being, on the other hand. Even the indirect association of psychological empowerment cognitions (competence, self-determination, and impact) with well-being was negative. A plausible explanation for these observations is that practitioners who derived deeper intrinsic meaning from patient care and those who accumulated greater resilience to adversity did so at the expense of their well-being. In other words, persistent affective, cognitive, and behavioral efforts to derive meaning in patient care and to sustain resilience toward adversity in clinical workplaces had exerted significant wear and tear on their professional well-being. Such clinicians likely overemphasized patient care and well-being, neglecting to balance it with an equivalent emphasis on their personal or professional self-care and well-being.[111]

Highly empathetic practitioners are often more prone to suffer emotional exhaustion leading to vicarious psychological trauma.[112,113] Cardador and Caza[114] theorized that practitioners who perceive their work as a high "calling" can end up ascribing excessive meaning to it, potentially leading to "unhealthy" consequences, such as reduced perseverance and lower resilience. Assigning excessive meaning to one's work could harm attention toward nonwork domains of life, causing an imbalance between personal and professional lives that in turn diminishes well-being.[115] A qualitative study of nurses found that when an imbalance exists between meaningfulness and manageability of work, the clinicians' coping resources become depleted, resulting in symptoms of burnout.[116] Harms et al[117] theorized that continuous honing by resilient individuals of personal skills and abilities can enhance their competence and self-efficacy while paradoxically undermining well-being. Future studies should investigate the prospect of optimum levels of work meaningfulness or resilience beyond which there might be diminishing returns on professional well-being.

Implications

Our findings point to the need for reforms in medical-surgical training and practice to incorporate more coaching in balancing patient care with practitioner self-care as a strategy to protect and shelter clinical empathy. Health care organizations might need to pay special attention to intrinsically driven practitioners, who derive the deepest meaning from patient care or report high levels of resilience, to address the likelihood that individuals can accumulate those strengths at the expense of their well-being and that of their teams.

Limitations and Strengths

The study had notable limitations. Because data were cross-sectional, we could not ascertain the temporal sequence of constructs under study. In addition, we could not definitively ascertain the causal direction of latent variables. Thus, although we based our hypothesized model on extant theory, we cannot completely rule out the potential for reverse causality (eg, empathetic practice influencing practitioner well-being). Because we

collected study data by a survey, the potential for selection biases exists. Our findings might not generalize to nonrespondents. Given the strict anonymity of survey responses, we had no information on nonrespondents that we might have used to quantify response biases. Characteristics of our study setting limit external validity. Findings might not generalize to dissimilar contexts. In limiting questionnaire length to minimize response burden and to optimize survey responses, we excluded variables (eg, work engagement, social support, perceived organizational support) that might account for additional variability in modeled relationships. Thus, unmeasured covariate bias is possible. Because we assessed study measures by a single, self-administered survey, the potential for self-report and mono-method biases exists. Harman's single-factor test[118] found that a single latent factor would account for 3.9% to 42.5% of variance in scores on the subscales and scales derived from the study. This falls below the 50% threshold for common method bias. Thus, shared method variance was likely not to be a significant threat to validity. Strengths of the study include the strong validity and reliability of study measures, a solid conceptual basis for the hypothesized model, and the sampling of physicians and APPs from diverse specialties and at various clinical ranks.

CONCLUSION

In a cross-sectional observational study investigating relationships of clinical empathy among physicians and APPs with occupational well-being, resilience, work meaningfulness, and psychological empowerment facets, we found significant positive associations of cognitive empathy with affective empathy, of work-related well-being and meaning with affective but not with cognitive empathy, and of resilience with cognitive and to a lesser extent affective empathy. Resilience, meaning, and psychological empowerment unexpectedly manifested negative associations with well-being, probably because of underlying, accumulated vicarious trauma. Findings call for periodic tracking of undetected vicarious trauma in health care delivery organizations, enhanced coaching of medical professionals in emotional intelligence and empathic skills, and support by

organizations toward maintenance of a healthy balance between practitioners' self-empathy and their empathy toward recipients of health care services. There is need for further research to investigate the plausibility of optimum levels of work meaningfulness or psychological resilience beyond which harmful effects on occupational well-being might accrue.

SUPPLEMENTAL ONLINE MATERIAL

Supplemental material can be found online at http://www.mcpiqojournal.org. Supplemental material attached to journal articles has not been edited, and the authors take responsibility for the accuracy of all data.

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