



## Survey article

# Resilience, hope and flourishing are inversely associated with burnout among members of the Society for Gynecologic Oncology



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## ABSTRACT

**Purpose:** In this study we sought to: 1) determine rates of burnout and other associated indices of psychosocial distress such as alcohol and substance abuse, 2) establish the baseline performance of gynecologic oncologists on several positive psychology metrics, 3) determine if increased hope, resilience, and flourishing are associated with decreased burnout.

**Methods:** A survey of members of the Society of Gynecologic Oncology (SGO) was conducted in spring of 2017. Participants were sent an electronic questionnaire consisting of 82 items measuring burnout, depression, substance abuse, flourishing, resilience, hope, and psychological wellbeing.

**Results:** A total of 1745 members were invited and 374 (21.4%) responded. Overall, 23.0% of respondents scores above clinical cutoffs indicating burnout. Almost 50.0% of participants screened positive for depression, 17.0% screened positive for alcohol abuse and 12.0% screened positive for substance abuse. Respondents meeting criteria for burnout were more likely to screen positive for depression ( $p < .001$ ) and substance abuse ( $p < .001$ ). Participants not meeting criteria for burnout had higher resilience, flourishing, hope, and wellbeing scores ( $p < .001$ ). Male respondents had higher levels of hope, resilience, and wellbeing while married participants had higher flourishing and wellbeing scores than their unmarried counterparts. Parents had higher levels of resilience and wellbeing compared to non-parents.

**Conclusion(s):** Burnout and associated indices of physiological distress continue to affect a large segment of SGO membership. Participants not meeting the criteria for burnout had higher scores on resilience, flourishing, hope, and wellbeing metrics. This suggests new targets for evidence-based interventions to mitigate burnout among members of SGO.

## 1. Introduction

Burnout is a significant issue affecting medical providers in all specialties and is characterized by high rates of emotional exhaustion, depersonalization, and low personal accomplishment (Maslach et al., 2001). A 2014 study established a rate of burnout in members of the Society of Gynecologic Oncology (SGO) of 32% (Rath et al., 2015). Burnout is associated with numerous negative consequences including reduced quality of care, poor patient outcomes, early retirement, and increased rates of depression and suicide (Cass et al., 2016). Furthermore, a recent decision analysis found that burnout is associated with decreased productivity with disproportionate rates of lost relative value units among females (Turner et al., 2017).

Given the high rates of burnout in healthcare professionals, there is increasing interest in developing burnout interventions. Of the studies published looking at interventions to address burnout in physicians,

most are physician-directed interventions centered on mindfulness or improving communication skills designed to mitigate the effects of stress and burnout (Busireddy et al., 2017). However, there has been minimal investigation into evaluating evidence-based interventions centered on promoting wellness rather than combating the effects of burnout.

Positive psychology is the scientific study of flourishing and includes the study of resilience, hope and optimism (Seligman, 2011). Evidence-based interventions have been developed to improve the aforementioned areas and have been demonstrated to positively impact wellbeing and reduce psychosocial distress (Seligman, 2011; Bolier et al., 2013). Recently, these principles have been applied to the development of a resilience and stress management training program for internal medicine faculty. In this small randomized control trial, a single 90-min resilience training session resulted in a durable improvement in resilience, stress, anxiety and quality of life (Sood et al.,

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2011)

With the success of positive psychology-based interventions in improving the wellbeing of a wide variety of populations, the study was designed with the following aims: to determine current rates of burnout, depression and substance abuse in SGO members, to establish the baseline performance of SGO members on several positive psychology metrics, and to determine if increased hope, resilience, and flourishing are associated with decreased burnout.

## 2. Methods

### 2.1. Participants

All members of SGO who had a working email address listed in the SGO member directory were invited to participate in the study. Participation was elective and responses were anonymous. This study was approved by the Ohio State University Institutional Review Board.

### 2.2. Instrument development/data collection

An 82-question instrument was developed upon review of the literature. Data was collected via an anonymous electronic survey sent to SGO members via email between June and August 2017. Two reminder emails were sent following the initial invitation.

Burnout was assessed using the abbreviated Maslach Burnout Inventory (Maslach et al., 2001). As in other studies of burnout among health care professionals respondents were considered positive for burnout if they had a high score in either emotional exhaustion or depersonalization (Rath et al., 2015). Substance and alcohol abuse were measured by the DAST-10 and CAGE questionnaires (Ewing, 1984; Skinner, 1982). Depression was evaluated using the 2-item PRIME MD/PHQ2 using a threshold score of 2 or greater (Rath et al., 2015). This threshold score has been demonstrated to have a sensitivity of 0.82 and specificity to 0.80 for the detection of any depressive disorder (Kroenke et al., 2001). Previously validated positive psychology metrics included the Adult Hope Scale (AHS), Brief Resilience Scale (BRS), Ryff's Scales of Psychological Wellbeing (SPWB) and the Flourishing Scale. The AHS is a 12-question instrument measuring agency (goal-directed energy) and pathway (planning to meet goals) with scores ranging from 8 to 64 (Snyder et al., 1991). The BRS is a 6-question Likert scale metric in which the score is averaged among the 6 questions (Smith et al., 2008). Ryff's SPWB consists of 18 questions reflecting six areas of psychological wellbeing including autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance (Ryff and Keyes, 1995). Scores can range from 18 to 108 with higher scores indicating increased subjective wellbeing. Finally, the Flourishing Scale consists of 8 statements with a 7-point Likert scale (Diener et al., 2009). The possible range of scores is 8 (lowest possible wellbeing) to 56 (higher possible wellbeing) with a high score describing a person with many psychological resources and strengths.

### 2.3. Statistical analysis

Demographic data and performance on various metrics were interpreted using descriptive statistics. Response rates are presented as frequencies and percentages while continuous variables are presented as means and standard deviations. Chi square was used to compare categorical data and to test associations between categorical variables and burnout. Wilcoxon rank sum method was used to test continuous variables across burnout. Correlations between continuous variables were determined using the Pearson correlation coefficient. The critical p value was set at < 0.05.

**Table 1**  
Summary of participant demographic information.

	N	Percent
Age		
25–34	56	16.5
35–44	123	36.3
45–54	71	20.9
55–64	60	17.7
65–74	21	6.2
75 or older	8	2.4
Gender		
Female	198	58.6
Male	140	41.4
Marital status		
Married	283	83
Not Married	58	17
Religious identity		
Religious	231	69
Atheist, agnostic, or nothing in particular	104	31
Parent		
Parent	249	66.6
Not a parent	125	33.4

## 3. Results

### 3.1. Demographics

Of 1745 members invited to participate, 374 responded (21.4%). Demographic characteristics are summarized in Table 1. The most frequently reported age group of participants was 35 to 44 (36.3%). Approximately 59% of respondents were female, 83% were married/partnered, and 66.6% reported having one or more children. A majority of respondents indicated a religious affiliation.

### 3.2. Burnout and indices of psychosocial distress

Overall, 24% of members were identified as meeting the criteria for burnout defined a scoring high on measures of either emotional exhaustion (17.9%) or depersonalization (15.6%) on the abbreviated MBI. Table 2 demonstrates the distribution of MBI subscores. Only 2.9% of respondents had high levels of emotional exhaustion and depersonalization and a low personal accomplishment score indicative of the most severe burnout. Almost 26% of respondents had low emotional exhaustion and depersonalization with high personal achievement indicating low concern for burnout.

Depression and substance abuse was prevalent among participants as 48.5% of participants screened positive for depression while 17% had a positive CAGE screen. Non-married respondents were more likely to have positive depression and alcohol abuse screens than non-married participants ( $\chi^2 = 5.17, p = .023$ ;  $\chi^2 = 5.42; p = .020$ ). Parents were less likely to have a positive depression screen compared to non-parents ( $\chi^2 = 7.27, p = .007$ ). No other demographic variables were associated with a positive screen for depression or alcohol abuse. Approximately 12% of respondents had a positive substance abuse screen with non-parents and participants identifying as agnostic or atheist more likely to have a positive screen compared to participants who were parents or reported a religious affiliation ( $\chi^2 = 15.27, p < .001$ ;  $\chi^2 = 5.04, p = .025$ ). A positive substance abuse screen was also more common in the younger age groups ( $\chi^2 = 15.59, p < .008$ ).

**Table 2**  
Categorization of respondents' MBI-HSS subscale scores (by percentage).

MBI-HSS Subscale	Low	Moderate	High
Emotional exhaustion	57.5	24.6	17.9
Depersonalization	42.5	37.6	15.6
Personal accomplishment	15.8	25.8	58.4

**Table 3**  
Overall performance on positive psychology measures.

Metric	Mean	Std. deviation	Reference metric range
Adult hope scale –total	54.33	6.13	8–64
Agency subscore	27.61	3.52	4–32
Pathway subscore	26.33	3.85	4–32
Brief resilience scale	3.38	0.36	1–6
Ryff's SPWB <sup>a</sup>	102.15	16.49	18–108
Flourishing scale	49.77	7.48	8–56

<sup>a</sup> Scales of Psychological Wellbeing.

Analysis did not reveal an association between any of the collected demographic factors and burnout. Additionally, a positive alcohol abuse screen was not associated with burnout in this study. However, respondents meeting the criteria for burnout were more likely to screen positive for depression ( $\chi^2 = 21.90$ ;  $p < .002$ ) and substance abuse ( $\chi^2 = 3.96$ ;  $p < .001$ ). Of note, 36.6% of participants reporting substance abuse also reported burnout.

### 3.3. Performance on positive psychology metrics

The overall cohort's performance on the individual positive psychology metrics are summarized in Table 3. Men had significantly higher total hope scores compared to their female counterparts [55.09 (5.93) versus 53.64 (6.26)  $p = .033$ ]. Age, marital status, religious identity and status as a parent were not associated with performance on the AHS. Male respondents had higher BRS scores [3.42 (0.37) versus 3.33 (0.35)] than females ( $p = .035$ ). Parents also had higher resilience scores than nonparents [3.40 (0.35) versus 3.30 (0.39),  $p = .016$ ]. There was no association of marital status or religious identity and resilience scores.

Performance on Ryff's SPWB and Flourishing scale were strongly positively correlated ( $r = .825$ ,  $p < .001$ ). Males had higher SPWB scores than females [104.24 (14.61) versus 100.26 (18.06)  $p = .032$ ]. Married/partnered participants had higher SPWB [102.61(16.70)] and Flourishing scores [50.03(7.39)] compared to single respondents [96.93(20.37), 47.14(9.77)  $p = .024$ ,  $p = .011$ ]. Participants with at least one child had higher SPWB scores than non-parents [102.66 (16.24) versus 94.10 (25.42)  $p < .001$ ]. There were no associations between SPWB and Flourishing scores and religious identity or age.

### 3.4. Associations of burnout and performance on positive psychology metrics

In an independent samples *t*-test, participants not experiencing burnout demonstrated higher levels of resilience, flourishing, hope, and psychological wellbeing ( $p < .001$ ). Table 4 describes the performance on each positive psychology metric by those with and without burnout. Screening positive for alcohol abuse was associated with lower resilience scores [3.28 (0.38)] when compared to a negative CAGE assessment [3.39 (0.36)  $p = .033$ ] as was having a positive substance abuse screen [3.23(0.39) versus 3.38(0.38)  $p < .021$ ]. Furthermore, a positive depression screen was associated with lower performance on all positive psychology metrics ( $p < .001$ ).

**Table 4**  
Performance on positive psychology metrics by burnout designation.

Metric	Burnout - Yes	Burnout - No	P-value
Adult Hope Scale –total	51.50 ± 6.17	55.13 ± 5.90	< .001
Agency subscore	26.35 ± 3.17	28.22 ± 3.22	< .001
Pathway subscore	25.15 ± 3.63	26.91 ± 3.49	< .001
Brief resilience scale	3.22 ± .37	3.42 ± .35	< .001
Ryff's SPWB	95.39 ± 15.06	103.59 ± 17.65	< .001
Flourishing scale	46.78 ± 6.39	50.41 ± 7.88	< .001

## 4. Discussion

In 2016, the SGO released an evidence-based review and recommendations to address stress and burnout among gynecologic oncologists (Cass et al., 2016). Recommendations included self-care strategies to promote wellness and a discussion of the role of institutions and professional societies. While these efforts have certainly increased the awareness of burnout and its consequences, burnout, depression and alcohol abuse still remain a problem for a significant portion of SGO membership. Approximately 49% of respondents had a positive depression screen based on the PHQ-2. Given the positive predictive value of 48.3% for the PHQ-2, nearly 25% of participants in the study are estimated to have some type of depressive disorder (Kroenke et al., 2001). While increasing the threshold score used for determining a positive PHQ-2 would enhance the specificity of screening, a threshold score of 2 was previously used in the 2014 study of burnout in SGO members. Furthermore, use of the threshold score of 2 results in more respondents with depressive disorders being correctly identified. Additionally worrisome is the 12% rate of positive substance abuse seen in this study with higher rates seen in the youngest age group of SGO members. This indicates a need for a novel approach to mitigating burnout and associated stressors.

In this study, we demonstrated that respondents not meeting the criteria for burnout or depression had higher levels of hope, resilience, psychological wellbeing and flourishing suggesting a new approach for preventing burnout. Research has demonstrated a number of evidence-based positive interventions that can build individual capacities in these areas suggesting that resilience, flourishing, and hope may be actionable targets to improve physician wellness (Seligman, 2011). Interventions studied include cognitive strategies, resilience training, mental agility training, anxiety management, relationship enhancement skills and coaching. A recent meta-analysis incorporating 39 studies showed that positive psychology interventions significantly and durably enhanced subjective and psychological wellbeing while reducing depression symptoms (Bolier et al., 2013). Furthermore, a small randomized control trial of a single 90-min stress management and resiliency training in academic medicine faculty demonstrated efficacy and feasibility of such programs (Sood et al., 2011). Given these data, programming designed to decrease burnout, depression and alcohol/substance abuse and improve physician wellness should consider incorporation of these positive psychological interventions.

Although little consistency was observed with the demographic data across either the indices of psychosocial distress or positive psychology metrics, we did identify several groups that may benefit from special wellness programming. Most notably, female respondents scored significantly lower on all assessments of positive wellbeing with the exception of the Flourishing scales than their male counterparts. It is likely that female SGO members face unique stressors impacting their wellbeing (Cass et al., 2016). Though some challenges facing female physicians are difficult to address at the individual level, there has been success with mentorship programs increasing job satisfaction and productivity in female physicians (Varkey et al., 2012). These mentorship opportunities should be considered for inclusion into programs designed to address burnout. Additionally, given the finding of higher rates of substance abuse in the youngest age groups, trainee and early career SGO members may also benefit from additional programming addressing substance abuse.

Several limitations to the study should be observed. First, while we had a large number of respondents, the response rate of 21.4% could potentially introduce selection bias with members having a greater interest in burnout participating. Secondly, this is a cross-sectional study with a single time data point and could be impacted by respondents' transient experiences. Additionally, the study used an exclusively correlational research design. Strengths of this study include a sample size consistent with the other large studies of burnout in healthcare providers. The largest strength of this study is the

application of positive psychology metrics and theory to this novel population allowing for the identification of new approaches to mitigating burnout and improving wellbeing.

Burnout, depression and substance/alcohol abuse remain a significant problem among SGO members. However, we have identified performance on metrics measuring hope, flourishing, resilience, and psychological wellbeing as potentially being protective against burnout. This suggests that physician wellness programs aimed at decreasing burnout should be comprehensive and include positive psychology interventions. A more comprehensive approach may yield greater improvements in SGO member outcomes.

#### Disclosure

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#### Presentation information

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