Collaborative Practice Teams in Oncology: Examining the Role of Psychological Safety and its Relationship with Clinician Well-Being Among Advanced Practitioners

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Background

Advanced practice providers (APPs), including physician assistants (PAs) and nurse practitioners (NPs), have helped to bridge the gap to meet the demand of patient oncology needs; however, APPs remain at a higher risk of developing clinician distress and burnout.

Psychological safety (PS) may be a contributing factor that affects team engagement in health care. Studies among PAs in oncology have demonstrated that high burnout rates could be associated with team leadership factors, such as the PA relationship with the collaborating physician, as well as their perceived leadership qualities.

Among APPs in oncology care, the question remains whether PS correlates with clinician well-being (WB), including the risk of distress and adverse work-related outcomes.

Purpose

This study aimed to examine the professional characteristics and team leadership factors that may contribute to PS among oncology APPs and determine whether PS was related to clinician well-being (WB).
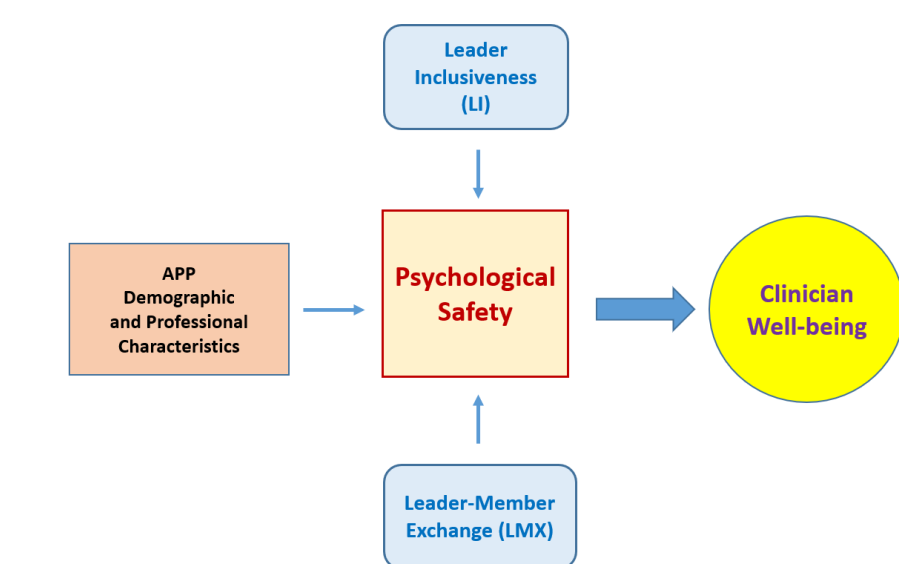
Two Research Questions:

1. What factors contribute to PS among APPs in oncology?

2. What is the relationship between PS and clinician WB?

Methods

A national web-based, cross-sectional, correlational survey utilizing the membership database of two leading oncology APP professional societies (Advanced Practitioner Society for Hematology and Oncology and the Association of Physician Assistants in Oncology) was completed during a 60-day study period in the setting of the COVID-19 pandemic in early 2021.

Variables and Scales:

- Demographic and Professional characteristics
- Survey scales: PS-7, LI-3, LMX-7, WBI-9
- COVID-19 Context-related questions, including:

"Please briefly describe how the COVID-19 pandemic may have affected your health care team, as well as your role in team-based care with your collaborating physician (CP) team leader"

Data Analysis Plan (Three Phases):

I. Descriptive statistics
II. Series of bi-variate analysis
III. Step-wide multiple linear regression models

Results

Final study sample consisted of 84 oncology APPs who completed the survey, and 28.6% (n = 24) reported WBI scores within the high-risk group of distress.

Table 1: Descriptive Analysis, including Bi-Variate Analysis of PS and WBI Scores (Categorical variables)

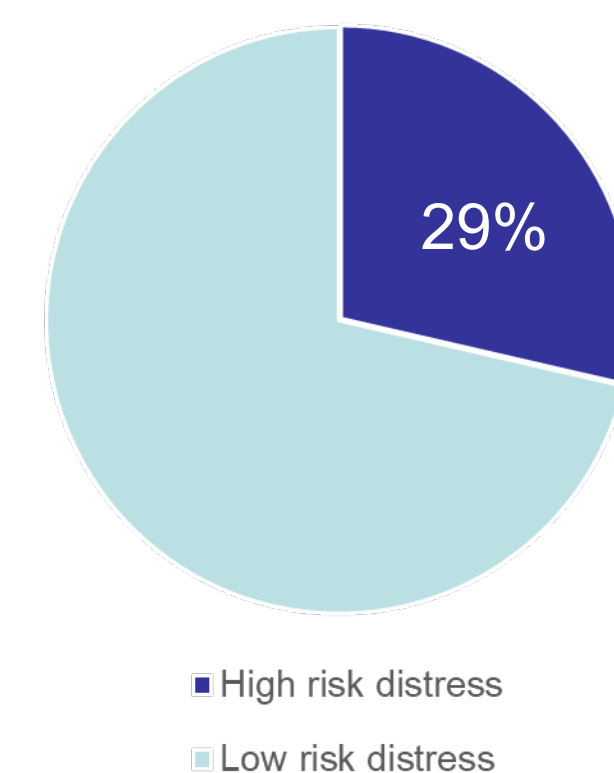| Categorial Explanatory Variables (select)	N	%	PS M (SD)	*p value	WBI Low (%)	WBI High (%)	*p value
Well-Being Index (WBI)				.002			
High WBI (≥ 4)	24	28.6	25.21 (6.03)				
Low WBI (< 4)	60	71.4	29.83 (4.71)				
Age				.37			.18
21 – 29	4	4.8	27.75 (6.18)		2 (50)	2 (50)	
30 – 39	26	31.0	29.46 (5.42)		16 (61.5)	10 (38.5)	
40 - 49	37	44.0	28.24 (5.44)		31 (83.8)	6 (16.2)	
50 – 59	11	13.1	27.27 (6.50)		8 (72.7)	3 (27.3)	
60 +	6	7.1	28.83 (5.04)		3 (50)	3 (50)	
Gender				.001			.03
Male	6	7.1	21.67 (5.05)		2 (33.3)	4 (66.7)	
Female	78	92.9	29.04 (5.20)		58 (74.4)	20 (25.6)	
APP Profession				.65			.35
Physician Assistant	39	46.4	28.67 (5.94)		26 (66.7)	13 (33.3)	
Nurse practitioner	41	48.8	28.61 (5.25)		30 (73.2)	11 (26.8)	
Clinical Nurse Specialist	4	4.8	26.00 (3.74)		4 (100)	0 (0)	
Oncology specialty				.03			0.14
Medical Oncology	43	51.2	4.75 (.72)		36 (83.7)	7 (16.3)	
Surgical Oncology	15	17.9	6.89 (1.78)		7 (46.7)	8 (53.3)	
Hematology Oncology	15	17.9	4.58 (1.18)		8 (53.3)	7 (46.7)	
Radiation Oncology/ Other	11	13.2	5.86 (1.77)		9 (81.8)	2 (18.2)	
Marital Status				.75			.32
Single	17	20.2	28.06 (5.67)		12 (70.6)	5 (29.4)	
Married	64	76.2	28.53 (5.51)		47 (73.4)	17 (26.6)	
Other	3		30.67 (5.86)		1 (33.3)	2 (66.7)	
% Time spent with In-Direct Patient Care				.04			.52
< 25	36	42.9	29.61 (5.55)		28 (77.8)	8 (22.2)	
25 - 50	17	44.0	28.54 (4.56)		25 (67.6)	12 (32.4)	
> 50	11	13.1	24.82 (7.01)		7 (63.6)	4 (36.4)	
Predominant Oncology Practice Model with CP				.02			
Independent Visits	57	67.9	29.46 (4.74)		43 (75.4)	14 (24.6)	.46
Shared Visits	15	17.9	25.07 (6.73)		9 (60)	6 (40)	
Mixed Visits	12	14.3	28.33 (5.94)		8 (66.7)	4 (33.3)	

* p <0.05   Italics = significant on bivariate analysis   Bold = significant on step-wise multivariate analysis

Table 2: Descriptive Analysis and Pearson's r Correlation

Continuous Variables	M (SD)	Min / Max	Pearson's r Correlation Between PS scores (p < .01)		
			PS	LI	LMX
1. PS	28.51 (5.50)	15.00 – 36.00	--	.76	.72
2. LI	17.04 (3.78)	6.00 – 21.00		--	.80
3. LMX	27.29 (5.87)	8.00 – 25.00			--

On final step-wise hierarchical multivariate analysis, high PS scores were associated with high leader inclusiveness and leader-member exchange (LMX) scores, and low PS scores were related to high risk clinician distress (high WBI).
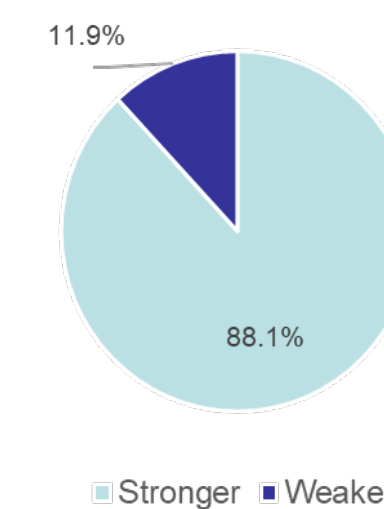
Table 3: Independent Sample T-Test of WBI Scores

Continuous Variables	N	M (SD)	*p value
PS			.02
High WBI	24	25.21 (6.03)	
Low WBI	60	29.83 (4.71)	
LI			.21
High WBI	24	16.08 (4.58)	
Low WBI	60	17.42 (3.38)	
LMX			.06
High WBI	24	25.38 (6.11)	
Low WBI	60	28.05 (5.51)	

Well-Being Index (WBI)

29%

- High risk distress
- Low risk distress

High WBI = ⬆ risk of adverse outcomes:

Dependent	LR (95% CI)
Burned out	9.28 (5.97, 14.79)
High Fatigue	3.44 (2.48, 4.75)
Low QOL	4.16 (3.04, 5.62)
High Absenteeism	1.06 (0.7, 1.57)
Recent Medical Error	1.69 (0.92, 2.84)
Below avg job performance	2.9 (2.06, 4.11)
Moderate+ intent to leave*	3.12 (2.19, 4.44)

*analysis conducted excluded those with intent to retire

Effects of COVID-19 Pandemic on Health Care Teams

During the COVID-19 Pandemic, how would you rate the quality of your relationship with our CP team leader compared to how it was before the pandemic?

11.9%

88.1%

- Stronger
- Weaker

Stronger Teams	Weaker Teams
Increased teamwork More communication	Staffing shortage, absences, and turnover
Increase in independent patient visits	Staff isolation and less communication
Interdependency of APP/ staff	Increased anxiety and stress
Implementation of telemedicine	Increased administrative burden
Remote works allows for better work-life integration	Ongoing adaptability to change (e.g., data changes, policies, etc.)

Summary of Findings

Q1: What factors contribute to PS among APPs in oncology?

✓ Leader Inclusiveness (LI)
✓ Leader-Member Exchange (LMX)
✓ Clinician Well-Being (WBI)

Bi-variate only: Low PS associated with >50% in-direct patient care, shared practice model, non-surgical oncology, and weaker relationship with CP compared to before the pandemic

Q2: What is the relationship between PS and clinician well-being (WB) among APPs in oncology?

✓ High PS related to low risk of distress (low WBI)
✓ Low PS related to high risk of distress (high WBI)

✓ = Significant relationship on multivariate analysis

Implications for Practice

- Focus on collaborative practice teams (structure, roles, goals, etc.)
- Examine team leadership factors (LI, LMX, interdependence, etc.)
- Cultivating PS environment in workplace
- Innovate and manage risks as a high reliability organization (HRO)
- Promote team-building and team engagement
- Encourage APP and staff professional development and growth
- Integrate PS awareness into well-being strategies

Implications for Education and Future Research

- Increase awareness and training of PS and clinician WB
- Setting the stage and reframing failure as a learning problem
- Promote interprofessional education and collaboration
- Faculty development, 360 feedback, and leadership training
- Periodic survey assessment on PS, well-being, and leadership
- Further research on PS and other team-leadership factors (e.g., power distance, professional status, structure, etc.) involving APPs

Discussion

Among oncology collaborative practice teams, APPs play a crucial role in providing high-quality patient care, but they remain at increased risk of developing clinician distress. Team-leadership factors affecting APPs may contribute to low PS, which may also be associated with low clinician well-being. Efforts to optimize clinician well-being should also address effective team functioning, team engagement, and leadership development.

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