Connection and Supervision in Medical Education: Exploring the Utility of the Connection Index in Postgraduate Psychiatry Training

Lauren Hishon, MD, David Puder, MD

Discussion for today's podcast was based on a Workshop created for the Association for Academic Psychiatry, AAP Annual Meeting, September 2023. Included in this discussion were: Lauren Hishon, M.D., Lisa Johnston, M.D., Marijana Jovanovic, M.D., David Puder, M.D.

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Burnout Among Residents

COVID-19 Residents:

- Residents who are working now have spent either all or most of their residency working as first-time physicians during the Covid-19 pandemic.
- The impact of this on burnout has been high:
    - Studies published since the pandemic have shown rates of burnout in psychiatry residents to be as high as 78% (Lee et al., 2022) and 83.3 % (Monteiro et al., 2020).
    - Pre-covid this number was much lower, with 21% of psychiatry residents reporting symptoms of burnout (Kealy et al., 2016).

What causes burnout?

There are many factors associated with burnout supported in the literature. We can break them down into environmental factors, personal factors and non-modifiable factors:

- Environmental factors
    - Hours of work per week (Lee et al., 2022)
    - Number of on-call shifts per month & weekend on-call shifts per month
    - Number of patients seen per day & clinics per week
    - Difficulty with maintaining relationships with superiors (Alenezi et al., 2022)
    - Occurrence of psychological abuse & poor faculty supervision and learning experience (De Mélo Silva Júnior et al., 2022)
    - Lack of supervision
    - Not having time to rest (Jovanović et al., 2016)
- Personal factors
    - High neuroticism and use of avoidance as coping mechanism (Lee et al., 2022)
    - Coping with self-blame, substance use or venting (Kaplan et al., 2021)
    - Stress, anxiety and depressive symptoms (Chan et al., 2019)
    - Lack of physical exercise (Alenezi et al., 2022)
- Non-modifiable factors
    - First two years of training

- History of receiving mental health help in preceding years
- Female (Alkhamees et al., 2021)
- Younger & without children
- Had not opted for psychiatry as first career choice (Jovanović et al., 2016)

What are the most important factors to address for decreasing burnout?

A narrative review of studies published from 1990 to 2015 determined that the factors within the learning and work environment, rather than individual attributes, were the main drivers of burnout (Dyrbye & Shanafelt, 2016).

Another study completed on residents across multiple specialties showed that residents who had been personally mistreated (e.g. public belittlement or humiliation) were 8 times more likely to report burnout, and almost 4 times more likely to report symptoms of anxiety and depression (Cheng et al., 2020). The study concluded that although it is not a causative relationship, the findings show a need to address work-related environmental factors that may be contributing to both resident mistreatment and burnout.

One study done on front-line residents working in NYC during the first year of Covid-19 pandemic found that feeling valued by supervisors was associated with a decrease in burnout odds (Kaplan et al., 2021).

Another study looking at satisfaction of residents with social support received from supervisors, peers, nurses and patients, showed that the best predictor of burnout was dissatisfaction with emotional support received by supervisors (Prins et al., 2007).

What can we do about burnout?

Forget the wellness modules!

Systematic review and meta-analysis by De Simone et al. (2021) showed that physician-directed interventions (such as mindfulness-based interventions, stress management skills and coping mechanisms, etc.) were associated with only a small reduction in burnout score. Whereas, organization-directed interventions (such as interventions focusing on workload, schedule, teamwork, communication, etc.) were associated with a moderate reduction in burnout score.

Strategies commonly talked about such as mindfulness-based interventions have only been associated with a small reduction in burnout, with overall low to very low quality of evidence as found in this systematic review and meta-analysis by Fendel et al. (2021).

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Focus on Relationships!

A literature review by Kilminster in 2000 reported that the supervision relationship was the most important factor in effective supervision, even more important than the type of supervisory methods used.

A cross-sectional analysis looking at the relationship between team structure, culture and emotional exhaustion of clinicians and staff in a primary care practice showed that the perception of working in a good team culture was associated with less clinician exhaustion (Willard-Grace et al., 2014).

Many studies have looked at the different factors of the Maslach Burnout Inventory (personal accomplishment, emotional exhaustion and depersonalization) and how they are associated with supervisor–trainee relationships.

One study found that interventions aimed at improving connectivity between residents and faculty, with use of extracurricular activities such as hiking, cinema, literature and philosophy, improved residents' perceived personal accomplishment (Aghaei et al., 2022).

A cross-sectional study in Brazil found that the relationship between residents and their preceptors, as well as with the climate of the institution, was correlated with emotional exhaustion and depersonalization. The items most correlated with emotional exhaustion were: “I feel that I am always short of what the preceptors expect of me”; “I feel more pressured than helped by my preceptors”; “I feel collaborative climate in my institution”. The survey items that bore the highest negative correlation with depersonalization were: "I feel a collaborative climate in my institution"; "I feel like I belong in my institution"; and "I feel more pressured than helped by my preceptors." The authors concluded that a potential avenue for reducing burnout may be found in interventions aimed at improving the quality of relationships within an institution (Monteiro et al., 2020).

Pulling it all Together

- We can see that the relationship between supervisor and resident is an important environmental mitigating factor in burnout.
- As we know, culture is created from the top down. If there are large culture and interpersonal connection issues in a program, then that may be a potential source of the burnout problem.
- We also see that organizationally-driven initiatives are more effective at reducing burnout than individually-directed interventions.
- As such, we can consider targeting the interpersonal connection between resident and supervisor as a potential avenue to explore when looking at ways to improve burnout.

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The Connection Index

This brings us to introducing the Connection Index, which is a validated feedback tool that measures the interpersonal connection between residents and their clinical supervisor. It is a 12-question survey using a likert scale that was created by Dr. Puder and colleagues and published in the Academic Psychiatry Journal last year, 2022.

The 9-criteria framework (Kashner et al, 2018) was used to validate the Connection Index tool which included factor and content analysis, construct validation and showed a high scalability coefficient and consistency. Further details on the development and validation of the tool can be found (Puder et al., 2022).

A review of literature on interpersonal connection brought to light 4 subdomains that comprise the basis of the connection that is being measured by the tool.

The 4 subdomains of connection include:

1. Empathy - Tested in Question 1 to 3
2. Psychological Safety - Question 4 to 6
3. Education Alliance - Question 7 to 9
4. Feedback - Question 10 to 12

Further details on how the questions were developed in relation to each subdomain of connection can be found in The Connection Index Manual (linked below).

The Connection Index was studied on 50 residents over 2 years. Each resident completed the Connection Index for their supervisors at the end of each 6 month time period, which ended up capturing 201 unique supervision dyads. Supervision Attendance, Negative Emotional Experience, Prejudice and Bias, Bullying and Harassment as well as Maslach Burnout Inventory (Emotional Exhaustion, Personal Accomplishment and Depersonalization) was also assessed in the questionnaire.

The study found that the higher the Connection Index scores, the more supervision attendance increased, a domain of burnout improved (personal achievement) and the stress of the interaction decreased. There was also a stepwise increase in bullying and bias when the Connection Index was low with a score below 4, as well as a stepwise decrease in depersonalization and emotional exhaustion (two measures of burnout) when Connection Index scores were high and above 6.9.

Ultimately, the Connection Index was found to be a reliable way to measure interpersonal connection between residents and their supervising attendings. It is important that efforts are made to keep individual responses anonymous, and that the results are used to guide

improvements in resident education and for faculty coaching, and not for legal matters. The tool may be helpful for academic program assessments, faculty evaluations, and to study how program interventions may have enhanced connection between residents and faculty.

Connected vs. Not Connected Supervisors

A qualitative study (unpublished at this time) was completed with medical students Joseph Wong, Daniela Borecky, Sith Riantawan, Ariana Cunningham, Gretchen Asher and Adam Borecky, and Dr. Puder, where they discussed common themes and traits found in *the most* and *the least* connected supervisor within each domain of Connection (Empathy, Psychological Safety, Education Alliance and Feedback).

Domain:	**Least Connected**	**Most Connected**
Empathy	Not mentally present Only concerned with their own matters Didn't know student's name No questions about how they were doing Made the student feel nonexistent No respect of their time Student feared making mistakes	Mentally present Paid attention Engaged Understood the concerns or made an effort to do so Got to know the student on a personal level Acknowledged student's presence and their work
Psychological Safety	Feared that voicing concerns/questions would be seen as useless or stupid When expressing questions, senior was condescending, hostile, or saw the questions as an attack on their judgment Student referred to as "medical student"	Safe to ask questions even if busy or the student thought they were stupid Senior encouraged the student to learn from and even question their decision making Senior cared about the student as an individual and allowed them to express their

	Senior talked without breaks No expectation of the student Senior disengaged	worries and their thoughts
Feedback	Concerned with showing how smart they were Exposed the student's lack of knowledge Only gave criticism Couldn't give feedback because they weren't paying attention Mistakes weren't used as learning opportunities Gave generic feedback Gave feedback based off other's observations/opinions	Taught at the level of the student Invested in teaching and making sure student learned Voiced thought process out loud Gave student assignments Encouraged the student to re-teach other students Encouraged students to take ownership of their patients Gave them the autonomy and responsibility Gave specific feedback
Education Alliance	Dictatorially gave orders without explanations Shut down student's questions or input Looked down on student's mistakes Yelled at student for unspecified tasks and skills not taught Called "medical student" or the wrong name consistently Didn't give autonomy or responsibility over patients	Goal was to teach and took the time to do so Taught and gave tasks at the student's level Didn't make the student feel small or stupid Used mistakes as learning opportunities Did not lose respect for student after mistakes Gave specific goals, tasks and responsibilities to the student

	Concerned with finishing their tasks rather than teaching Ignored the medical student Blamed student for shortcomings outside their role on the team Expected student to read the senior's mind Sought to bring people down rather than teach them and bring them up	Discussed their learning goals and objectives Made the student feel a valued part of the team Was looked up to as a role model

Conclusion

- Burnout and disconnection has become a large issue in psychiatry residency programs.
- Improving interpersonal connection between residents and supervisors may be a good modifiable factor programs can focus on when wanting to improve connection and reduce burnout.
- The Connection Index is a valid tool programs can use to measure interpersonal connection between resident and supervising attending to see if there is a problem with certain supervisors or a wider program issue.
- Programs may use the results gathered from the Connection Index as a starting point for the development of interventions aimed at improving the quality of relationships within their program.

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	The Connection Index	Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	S A
1.	I would voice my concerns or questions with this person	o	o	o	o	o	o	
2.	I felt free to express the things that worry me	o	o	o	o	o	o	
3.	I feel free to ask for more information about his/her decisions or actions	o	o	o	o	o	o	
4.	The way we communicated was clear or helpful to our goals	o	o	o	o	o	o	
5.	This person seemed to respect me regardless of my mistakes	o	o	o	o	o	o	
6.	I felt grateful to have worked with this person	o	o	o	o	o	o	
7.	I felt heard and understood	o	o	o	o	o	o	
8.	I felt understood and heard based on this person's body language, nonverbal cues, and facial expressions	o	o	o	o	o	o	
9.	This person was in touch with my perceptions and concerns	o	o	o	o	o	o	
10.	When this person made decisions, they explained their thought process to me	o	o	o	o	o	o	
11.	This person gave feedback with specifics (not with generalizations) based on observations (not hearsay)	o	o	o	o	o	o	
12.	This person gave me a chance to work out answers for myself	o	o	o	o	o	o	

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