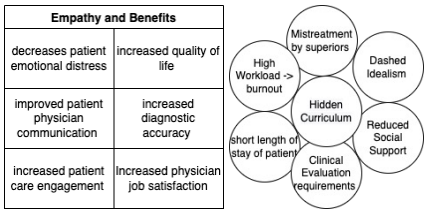


# Re-examining the Premedical Years as an Integral Part of Professional Identity Formation A Narrative Literature Review

Nikita Deng, BA, SOM; Anjali Dhurandhar MD, FACP; Department of Medicine University of Colorado School of Medicine

## Background

- There is a known decline in empathy during the clinical year of medical school
- Erosion of empathy in part is due to the hidden curriculum
- Empathy levels correlate with feelings of positive well being, life satisfaction, and positive relationships
- Reflective practices, mindfulness, and discussion-based learning improve rates of burnout and preserve empathy levels through training
- The cultivation of these skills are not standardized among medical schools or undergraduate institutions



## Purpose

- To analyze how the premedical years affect professional identity formation (PIF) regarding the cultivation of skills that help protect against empathy decline later in training

## Methods

- A comprehensive narrative literature review was completed with PubMed
- A list of MeSH (Medical Subject Headings) terms were created to find articles of interest regarding pre-medical education, medical school, medical education, empathy, compassion, reflection, medical curriculum, and hidden curriculum
- Key phrases were used to search PubMed such as empathy decline, premedical, burnout, hidden curriculum
- Some papers were found via recommended articles and reference lists of other papers.

## Results

- Identifying pre-medical years as a potential period for Professional Identity Formation to prevent empathy decline in medical training**
- While the clinical year, of medical school is well known to result in declines in empathy, a protective factor against this decline was found in students entering medical school with higher levels of empathy (Chen et al., 2012).
  - It's possible that building up humanistic skills against empathy decline prior to medical school may help with further declines in medical training
  - Effective skills include writing, narrative storytelling, mindfulness, and reflection (Chen et al., 2012)
  - Those with more social science or humanities in undergraduate tend to have higher empathy scores than their peers in medical school, residency, and as faculty (Linn et al. 1987)

### Professional Identity Formation (PIF)



Development of one's character in the context of their professional identity as a physician



An image of self in relation to one's experiences, roles, and identity in medicine



PIF is a process that happens both at the individual level and at the collective level in which a person learns the appropriate roles and their place in the community's work



Learning how to BE and FEEL like a physician

### Hidden Curriculum of Premedical Years

- Though premedical years serve as a period for developing the humanistic skills necessary to prevent empathy decline, it is not utilized as such
- Premedical websites of Ohio undergraduate institutions use language that focus on natural sciences and clinical skills rather than developing the tools for the humanistic and sensitive nature of medicine, often citing humanities coursework as an afterthought (Skinner et al., 2018)
- Natural Sciences are emphasized over social science and humanities (SSH), making up a hidden curriculum that "values science and devalues humanities" (Hall et al., 2014).
  - Things of importance for premedical students often are GPA and MCAT, pushing the preparation for medical school towards a checklist of natural science focused training, rather than on communication skills, reflective capability, and mindfulness
  - Humanities and social science courses tend to improve critical thinking skills and their critical thinking scores in premedical coursework (Kim et al.), yet are often undervalued and not extensively required for medical school applications
- Like medical school, the premedical hidden curriculum have effects on premedical well being, leading to higher burnout rates and depression compared to non-premedical undergraduate students even after adjusting for depression (Fang et al., 2012)
  - This suggests negative PIF occurring through premedical years in part due to admission criteria and competitiveness of admission
- Though premedical years are formative times for PIF and shape one's view of the profession and what skills are necessary to succeed, premedical students are often achievement and requirement focused, including getting a good MCAT score, a good GPA, and having the kinds of extracurriculars that medical schools look for. (Lin et al., 2014)
  - Some ways that PIF can be incorporated in premedical years include reflective processes, formative feedback, personal narratives, developing relationships, and discussion-based classes (Wald et al., 2015)

I would like to acknowledge my gratitude to my mentor whose guidance and expertise helped bring this project to life

## Conclusion

- The premedical years are a potential period for students to develop the skills necessary to maintain clinical empathy
- These skills include reflection and mindfulness which are often developed through humanities and social science coursework as well as discussion-based learning
- Currently, the premedical years and its hidden curriculum do little to develop humanistic skills
- Instead, the pre-medical years sends messaging that devalues these skills through admission requirements and the competitive culture of pre-medical years
- Limitations of this review include the restriction of the search to PubMed as well as the lack of direct causation between social science and humanities coursework with development of reflective and mindfulness skills or preservation of empathy as no randomized control trials were identified on this matter

## References

- Chen DC, Kirshenbaum OS, Van J, Kirshenbaum E, Aghline RH. Characterizing changes in student empathy throughout medical school. *Med Teach*. 2012;34(6):305-11. doi: 10.3109/07445339.2012.646600. PMID: 22455699.
- Skinner D, Rosenberger K. Toward a More Humanistic American Medical Profession: An Analysis of Premedical Web Sites From Ohio's Undergraduate Institutions. *J Med Educ Curric Dev*. 2018 Feb; 12:52382120518756337. doi: 10.1177/2282120518756337. PMID: 29468201; PMCID: PMC5814026.
- Wald HS, Anthony D, Hutchinson TA, Liben S, Smolovitch M, Donato AA. Professional identity formation in medical education for humanistic resident physicians: pedagogic strategies for bridging theory to practice. *Acad Med*. 2015 Jun;90(6):724-30. doi: 10.1093/acmed/akv0000000002. PMID: 25981614.
- Hall JN, Woods N, Hanson MD. Is social sciences and humanities (SSH) premedical education marginalized in the medical school admission process? A review and contextualization of the literature. *Acad Med*. 2014 Jul;89(7):1075-86. doi: 10.1093/acmed/akv00000000004. PMID: 24652662.
- Fang DZ, Young CB, Colburn S, Meador C, Zippori S. Burnout in premedical undergraduate students. *Acad Psychiatry*. 2012 Jan; 13(6):111-6. doi: 10.1177/00004510000125. Erratum in *Acad Psychiatry*. 2012 Mar; 13(6):21-103. Young, Christine [corrected by Young, Christine B]; Fang, Daniel [corrected by Fang, Daniel Z]. Erratum in *Acad Psychiatry*. 2012; Mar;6(2):103. PMID: 22262430.
- Lin, K. Y., Anagha, R. R., Crawford, B., Parami, S., Fuhrer-Fortis, A., & De Vries, R. G. (2014). What must I do to succeed? Narratives from the US premedical experience. *Social science & medicine* (1965), 119, 98–106. <https://doi.org/10.1016/j.socscimed.2014.08.017>
- Wald HS. Professional identity (trans)formation in medical education: reflection, relationship, resilience. *Acad Med*. 2015 Jun;90(6):701-6. doi: 10.1093/acmed/akv000000000731. PMID: 25881651.
- Kim DH. Evaluation of critical thinking course for premedical students using literature and film. *Korean J Med Educ*. 2019 Mar;31(1):19-28. doi: 10.3946/kjme.2019.115. Epub 2019 Mar 1. PMID: 30852858; PMCID: PMC6503924.

## Conflicts of Interest

I have no conflicts of interest to disclose. I have no financial interests or affiliations associated with this project.