Medical Student-Designed Individual Career Plans: A Pilot Study

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Abstract

Our objective is to implement a second-year medical student-facilitated intervention consisting of goal orientation tasks, to assist students in developing an individualized career plan (ICP). We hypothesize that the intervention will positively affect student self-efficacy, metacognitive self-regulation, and longitudinally, residency preparedness. Students will complete three questionnaires before and after the intervention: Modified Motivated Strategies for Learning Questionnaire (mMSLQ), Academic Motivation Scale (AMS), Strength of Motivation for Medical School-Revised (SSMSR). Students will also complete two online assignments and two zoom sessions where they create and develop their ICP. Lastly, we ask participating students an exit survey asking them to reflect on themes within their ICP as contextualized through the Graduate Questionnaire. We found a significant increase in self-regulation amongst participants who underwent the intervention, with overall-positive participant feedback. Our pilot study lays the foundation for an instution-led study to improve student goal-achievement in the face of an increasingly competitive residency-applicant environment.

Importance

- Schools CAN facilitate improvements in goal-orientation
- Goal-orientation improves student outcomes
- Goal attainment is more likely when the plan is concrete

Background

1) There is currently a lack of career guidance for first year medical students at WSUSOM.
2) Literature has demonstrated that deliberate goal-setting courses have significant effects on struggling undergraduate student outcomes, such as academic performance, motivation, and retention.[2,5,6]
3) Goal-setting interventions have already been used by medical schools allowing students to autonomously select educational goals, leading to increased self-efficacy and self-regulation.[1]

Methods

- Multi-session intervention directed at second-year medical students (n=15)
- **Measurement tools**:
  - Pre- and Post-intervention modified MSLQ[3,4], AMS[7], SMMS-R.[8]
  - ICP analytic scale rubric.
- **Online Module 1** - Warm up with open-ended questions, writing for desirable and undesirable future, and generation of initial ICP.[5]
- **In-person Session 1 (Zoom)** - Initial ICP is critiqued through peer-review with open group discussion.
- **Online Module 2** - Generation of detailed ICP and self-monitoring strategy.[5]
- **In-person Session 2 (Zoom)** - ICP is critiqued through peer-review with open group discussion.
- **Exit Questionnaire** (AAMC Graduate Questoinnaire[9], n=8).

Results

Table 1: Student-Reported Rating of AAMC Graduate Questionnaire Factors Influencing Specialty Selection

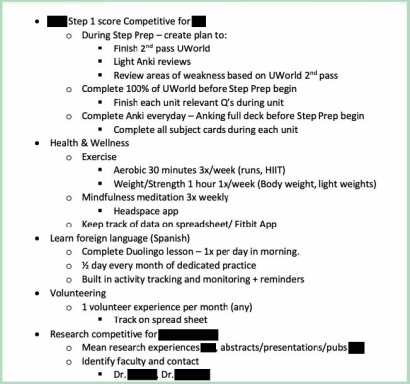
Factors affecting residency specialty selection:	Percent responding above moderate influence
Fit with personality, interests, and skills	100.00%
Content of specialty	100.00%
Role model influence	87.50%
Income expectations	75.00%
Competitiveness of specialty	62.50%
Options for fellowship training	62.50%
Family expectations	62.50%
My future family plans	62.50%
Work/Life balance	62.50%
Level of educational debt	37.50%
Length of residency training	37.50%

Table 2: Student-Reported Rating of AAMC Graduate Questionnaire Factors' Usefulness in ICP Development

How important were these resources in developing your plan?	Percent responding above moderate influence
Specialty interest group-sponsored panels and presentations	75.00%
AAMC's Careers in Medicine website	62.50%
Advising/Mentoring	50.00%
School-sponsored career planning workshops and courses	37.50%
Participation in in-house and extramural electives	37.50%
Other publications and web-based resources	12.50%

- AMA and SMMS did not show any significant changes within 15 second-year medical students at Wayne State University School of Medicine.
- mMSLQ demonstrated significant changes in self-regulation within these same students ($p<0.027$).
- There were significant improvements in likeliness to set goals ($p<0.017$), self-directed learning ($p<0.001$), willingness to sacrifice time ($p<0.014$), likeliness to go into medicine despite debt ($p<0.028$), and wanting a better salary ($p<0.023$).

Figure 1. Sample High-Scoring Individualized Career Plan



- Students rated the program on a Likert-scale: worthwhile (3.9/5.0), more prepared to achieve goals (3.9/5.0), desire for integration into first-year curriculum (4.4/5.0), and would recommend a program like this to other students (4.2/5.0).

Discussion

- Questionnaires:
  - mMSLQ: **significant increase in self-regulation subscale**.
  - AMS: no significant changes in motivation.
  - SMMS-R: no significant changes in motivation.
- Quality of ICP: No significant correlation with linear regression when compared to sub-scales across all questionnaires.
- General Feedback from students:
  - **Second year medical students strongly want this program implemented during the M1 curriculum and would recommend it to other medical students.**
  - Students felt that the program prepared them to achieve their goals but further work can be done to improve this, such as text reminders, long-term accountability, and more individual time with same specialty near-peers.
- Graduate Questionnaire:
  - **Most important influences on specialty selection**: fit with personality, interests, and skills, content of specialty, role model influence, and income expectations.
  - **Least important influences**: level of educational debt, length of residency training.
  - **Most important resources** were specialty interest group-sponsored panels and presentationvs. **Least important resource** was other publications and web-based resources.
- Implications:
  - Programs like this should be incorporated on a wider scale into medical school curricula to further their student's professional development.
  - Self-regulation as a means to promote student critical thinking and development should be tapped by institutions seeking to create the most competitive and professionally diverse medical students.

Future Direction

Future studies should consider analysis of student achievement of self-selected goals with larger sample sizes and appropriate controls to determine effects of the goal-setting intervention on goal achievement.

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