



Does the Performance Improvement Plan (PIP) really work for Family Medicine Residency?

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Background

Since 2011, Residency has been a full-time postgraduate Family Medicine training program in Singapore. Residents are regularly assessed in the 6 core competencies, including medical knowledge and patient care, professionalism, system-based practice, communication skills, practice-based learning and improvement.

Medical knowledge is assessed primarily through an annual 240-question computer-based In-Training Examination (ITE). Residents who performed poorly at ITE and also identified by faculty to require remediation, were given additional guidance via Performance Improvement Plan (PIP). PIP consists mainly of MCQs and regular discussions involving weaker topics and to keep track of specific learning goals with their residency preceptors

Purpose of Study

The purpose of this study is to analyze the effect of PIP on year 1 Family Medicine residents on their subsequent year 2 ITE performance.

Methods

The ITE scores of all residents from SingHealth Family Medicine Residency who had participated in year 1 and year 2 ITEs were collated. Those who scored in the lowest quartile (0 to 25th centile) for their year 1 ITE were selected.

We divided them into those on PIP for medical knowledge and those who were not. We subsequently analyzed the year 2 scores of each group in relation to their year 1 scores by using the paired sample T test. We then compared the difference in scores between the two groups by using the independent sample T test.

Conclusion

This study showed that Family Medicine residents from the lowest quartile group who were placed on PIP in year 1 achieved a larger percentage of improvement in their year 2 ITE compared to those who were not on PIP (59% versus 32%). However, the results may not have shown significance due to a small sample size and other confounding factors resulting from the variable selection of residents into the two groups. We plan to continue to collect more data in the next few years and review this.

References

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Results

From 2011 to 2017, a total of 28 residents scored in the lowest quartile (0-25th percentile) for year 1 ITE. 10 of them were placed on PIP and 18 were not. The mean year 1 score of those on PIP was 241, whereas that of those not on PIP was 278.

For those on PIP in year 1, they achieved a 59% improvement in their year 2 ITE with a mean score of 383 ($p < 0.001$) (Table 1). On the other hand, the group of residents who were not on PIP improved by 32% with a mean year 2 ITE score of 367 ($p = 0.001$) (Table 2).

Table 1

PIP in Year 1			
N	ITE Score- Year 1	ITE Score- Year 2	p-value
10	241 (44.3)	383 (92.4)	<0.001

Table 2

No PIP in Year 1			
N	ITE Score- Year 1	ITE Score- Year 2	p-value
18	278.3 (29.4)	367.2 (80.6)	0.001

Legend: N stands for Numbers.

However, the difference between the improvement in scores in the two groups was not significant ($p = 0.108$).