Final Report - Multisource Feedback: Performance and Reflectivity in Practice Experience Program Participants

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Aim and Research Questions:

Aims

1. To ascertain if the Multisource Feedback (MSF) results of Practice Experience Program (PEP) participants is comparable to that of participants in the Australian General Practice Training (AGPT) program and the broader population of General Practitioners (GPs).
2. To compare the self-reflective ability of PEP participants to perceived reflective capacity during MSF feedback.
3. To compare the self-reflective ability of PEP participants to the self-reflective ability of AGPT participants post MSF completion.

Research questions

1. Do PEP participants completing MSF have different profile scores to AGPT participants or the broader GP population completing MSF?
2. Does the self-perceived ability of PEP participants to reflect on the MSF process differ from their reflective ability as assessed by a Medical Educator during the MSF feedback process?
3. Does the self-perceived ability of PEP participants to reflect on the MSF process differ from the self-perceived ability of AGPT participants to reflect on the MSF process?

Methods:

Ethical approval was obtained from the University of Queensland. The research comprised 3 quantitative components.

Component 1: MSF (patient, colleague and self-evaluation) data for PEP participants, AGPT participants, and GPs (patient feedback only) were obtained from the data custodian Client Focused Evaluation Programs (CFEP), and spanned January 2018 to June 2020. The MSF results were initially fused (by participant) before undergoing analysis of variance, t-tests, and cluster analysis.

Component 2: PEP Participants' self-reported reflectivity was to be compared with the reflective ability as reported by a Medical Educator after discussion of the MSF results with the PEP Participant. The instrument to be used for Components 2 (and 3) was a modified Kember et al.'s (2000) questionnaire with reflectivity and critical reflectivity measures.[1] The analysis was not performed due to an insufficient sample size. The third component was added after ethical amendment due to the poor response rate to Component 2.

Component 3: PEP Participants' and AGPT participants' self-reported reflectivity after completion of MSF was compared. The invitation to participate was sent in July 2020 to those who had completed MSF between January 2018 and June 2020 by CFEP on behalf of the research team. The data was analysed using analysis of variance.

Results:

Component 1: The MSF results of participants in the PEP the AGPT, and GPs comprised seven data sets. The sample size for each dataset varied, and there were multiple responses for each of the three target groups. That is, there were 7907 patient responses for 222 PEP doctors, 3441 colleague responses for 265 PEP doctors, 253 self-evaluations from PEP doctors, 13623 patient responses for 355 AGPT participants, 1290 colleague responses for 97 AGPT participants, 91 self-evaluations from AGPT participants, and 36215 patient responses for 923 GPs.

The average PEP, AGPT and GP patient scores are presented in Appendix 1, Table 1. When patient scores were aggregated for each of the 221 PEP participants and 355 AGPT participants across all 13 items, there was no statistically significant difference in overall average item score received from patients. However, T-tests showed that patients gave lower scores to participants in the PEP participants as compared to those in the AGPT. which were statistically significant for five of the items (See Appendix 1 Table 1). When compared against participants in the PEP and the AGPT, GP CPD doctors tended to score higher on all items except for 'Time for visit' and 'Consideration'.

The average PEP and AGPT colleague scores are presented in Appendix 1 Table 2. When colleague scores were aggregated for each of the 265 PEP participants and 95 AGPT participants across all 19 items, there was no statistically significant difference in overall average item score received from colleagues. Based on t-test results, colleagues rated AGPT participants significantly better at communicating with patients, while PEP participants were rated as significantly better at 'Saying no' (see Appendix 1 Table 2).

The average PEP and AGPT self-evaluation scores are presented in Appendix 1 Table 3. t-tests showed a significant difference between average PEP self-evaluation scores and colleague awarded scores, which was also seen between AGPT self-evaluation and colleague awarded scores ($p \leq 0.01$), with both groups self-rating lower than their colleagues, however more so for the AGPT group.

Component 2: Two Medical Educators provided four responses, and four PEP participants provided four responses. There

[1] Kember, D., Leung, D. Y. P., Jones, A., Loke, A. Y., et al. (2000) 'Development of a Questionnaire to Measure the Level of Reflective Thinking', Assessment & Evaluation in Higher Education, 25(4), pp. 381-395. https://doi.org/10.1080/713611442

were three matched pairs, as there was not a matched rating for one ME and one PEP participant. Data for Component 2 was not analysed because it would not be robust, or meaningful.

Component 3: The sample of 107, included 78 PEP participants and 29 AGPT participants. The sample was comprised of 57 females (PEP: 37, AGPT: 20) and 50 males (PEP:41, AGPT: 9). The mean age of participants was 43.9 (PEP: 47.56, AGPT: 33.79). Most respondents completed their medical training internationally (PEP: 72, AGPT: 7) with 27 having trained in Australia (PEP: 5, AGPT: 22) and one missing case. Most participants reported they completed MSF four or more weeks prior to the research survey (PEP: 68, AGPT: 26).

No differences were found for the overall reflection scores or critical reflection scores between PEP and AGPT participants. PEP participants agreed with one critical reflection item ('As a result of multi-source feedback I have changed the way I look at myself') more strongly than AGPT participants (PEP 3.91 (n=77); AGPT 3.59 (n=29), $p \leq 0.05$). Additionally, analyses including only those who had completed MSF four weeks or more prior to our survey saw the item lose significance, to be replaced by another critical reflection item ('Multi-source feedback has challenged some of my firmly held ideas'; PEP 3.46 (n=68); AGPT 2.92 (n=26), $p \leq 0.05$). Further, it was found that internationally trained doctors also scored the critical reflection item ('Multi-source feedback has challenged some of my firmly held ideas') higher than Australian trained doctors (3.53 (n=79); 2.96 (n=27), respectively, $p \leq 0.05$).

Gender differences were also found, where at the scale level there was a significant difference ($p \leq 0.01$) between female (18.02, n=57) and male doctors (16.6, n=50) for reflectivity. This difference was due to significant differences for two items ('I like to think over what I have been doing and consider alternative ways of doing it' ($p \leq 0.05$) and 'I often re-appraise my experience so I can learn from it and improve for my next performance' ($p \leq 0.01$)). There was only one significant difference ($p \leq 0.05$) across critical reflectivity items, where males scored higher (3.63, n=49) than females (3.05, n= 57) on 1 item ('During Multi-source Feedback I discovered faults in what I had previously believed to be right').

Discussion:

PEP and AGPT participants perform similarly overall, but there are key items where PEP participants' performance is lower, while still within the range of very good to excellent. Patients rated PEP participants lower for ability to listen, explanations, express concerns, respect shown and time for visit. This suggests that there are differences in consulting style in this group and given that most respondents were IMGs, these differences may be due to training, culture and language. When considering colleague feedback, the PEP and AGPT participants received similar feedback overall, although AGPT participants were rated better at communicating with patients, while PEP participants were better at 'Saying no'. This supports the findings of the patient feedback. Both PEP and AGPT participants rated themselves lower than their colleagues, with this more pronounced for AGPT participants, which might be due to PEP participants generally having greater time since graduation before undertaking their vocational pathway (Laurence et al., 2016)[2]. With respect to reflectivity, PEP and AGPT participants were also similar overall, although PEP participants indicated that MSF has changed how they look at themselves more strongly, suggesting that this process resulted in a transformational learning experience. The change in significance of this item when only those who had completed their MSF process four or more weeks prior suggests that the process of reflection might occur over time, with different realization coming at different times, because the item about MSF challenging firmly held ideas also became significant after this time point. Internationally trained doctors might have also more strongly identified with this item because of the suggested cultural and communication differences, in addition to the differences between international and Australian medical training. reflectivity and critical reflectivity are also seemingly impacted by gender.

Implications:

The lack of overall difference for the average reflectivity and critical reflectivity suggests that other factors might be at play to explain the differences seen in the MSF performance of PEP participants. The MSF items where differences were found, compared to AGPT participants, indicate that culture and communication might be key issues. This could be addressed with specific support, such as workshops or mentoring, being provided to PEP participants to address barriers to intercultural communication. Additionally, the PEP participants scoring higher on a critical reflectivity item might indicate that the feedback discussion is leading to new realisations, supporting the importance of this activity at completion of MSF.

Future Research:

The PEP is in its infancy and there is a need to understand the profile of doctors that embark on this pathway to assist with contextualising the current research and determining if the current participants were representative. Nonetheless, the current research findings increase our understanding of the performance and reflectivity of both PEP and AGPT participants in the context of MSF and creates opportunities for education support and future research. Some examples include whether high and low performers obtain similar outcomes/benefits from MSF, what role the MSF debrief has in reflectivity, and whether communication and cultural training will assist PEP participants to improve their consulting skills?

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[2] Laurence, C. O., Eley, D. D., Walters, L., Elliott, T., et al. (2016) 'Personality characteristics and attributes of international medical graduates in general practice training: Implications for supporting this valued Australian workforce', Australian Journal of Rural Health, 24(5), pp. 333-339, https://onlinelibrary.wiley.com/doi/abs/10.1111/ajr.12273

Appendix 1

Table 1: Overview of PEP, AGPT and GP patient data

Item	N			Mean (SE; SD)		
	PEP	*AGPT*	*GP*	*PEP*	AGPT	GP
Satisfaction with visit	7887	13609	36019	89.82 (0.16;14.65)	90.06 (0.12;14.13)	91.28 (0.07;13.72)
Warmth of greeting	7900	13615	36053	90.86 (0.16;14.10)	91.45 (0.12;13.38)	92.03 (0.07;13.24)
Ability to listen	7894	13592	35950	90.74 (0.16;14.32)a	91.73 (0.11;13.32)	91.82 (0.07;13.49)
Explanations	7892	13590	35891	89.50 (0.17;14.96)a	90.63 (0.12;13.78)	91.06 (0.07;13.85)
Reassurance	7882	13581	35857	89.38 (0.17;14.96)	89.84 (0.12;14.37)	90.44 (0.08;14.23)
Confidence in ability	7883	13587	35957	90.05 (0.17;14.70)	89.96 (0.12;14.18)	92.02 (0.07;13.38)
Express concerns	7875	13549	35614	89.77 (0.17;14.84)a	90.81 (0.12;13.82)	90.82 (0.07;13.98)
Respect shown	7889	13596	35977	92.24 (0.17;13.41)a	93.16 (0.11;12.37)	92.93 (0.07;12.65)
Time for visit	7889	13596	35945	89.40 (0.17;15.03)a	90.99 (0.12;13.78)	90.16 (0.08;14.49)
Consideration	7863	13540	35733	90.21 (0.16;14.61)	91.04 (0.12;13.79)	91.03 (0.07;13.83)
Concern for patient	7894	13583	35847	90.56 (0.16;14.48)	91.35 (0.12;13.49)	91.52 (0.07;13.62)
Take care of myself	7834	13539	N/A	89.88 (0.17;14.79)	90.57 (0.12;13.88)	NA
Recommendation	7882	13575	35924	91.11 (0.16;14.45)	91.39 (0.12;13.80)	92.00 (0.07;13.58)
Overall	7881.85	13580.92	35897.25	90.27 (0.16;14.56)	91.00 (0.12;13.70)	91.43 (0.07;13.67)

a indicates a significant (p≤0.05) difference between PEP participants and AGPT participants on these items

Table 2: Overview of PEP and AGPT colleague data

Item	N		Mean (SE; SD)	
	PEP	*AGPT*	*PEP*	AGPT
Clinical knowledge	3228	1153	88.29 (0.26; 14.81)	89.33 (0.40;13.71)
Clinical ability	3205	1120	88.06 (0.64; 14.95)	89.30 (0.41; 13.85)
Communication with patients	3330	1211	87.65 (0.28; 16.20)a	89.73 (0.42; 14.62)
Compassion/empathy	3360	1229	90.64 (0.25; 14.39)	90.61 (0.41; 14.35)
Colleague communication	3402	1271	88.84 (0.27; 15.68)	89.72 (0.44; 15.55)
Teaching and training colleagues	2582	955	83.54 (0.33; 16.79)	84.88 (0.50; 15.57)
Punctuality and reliability	3294	1246	88.88 (0.28; 16.10)	90.29 (0.43; 15.29)
Respect for colleagues	3407	1278	92.78 (0.23; 13.54)	92.80 (0.37; 13.27)
Ability to say 'no'	3038	1075	83.01 (0.29; 15.95)a	81.49 (0.49; 16.10)
Awareness of limitations	3203	1160	87.25 (0.26; 15.05)	87.93 (0.44; 15.02)
Team orientation	3251	1211	87.46 (0.27; 15.42)	88.19 (0.43; 15.05)
Use of resources	3133	1079	87.86 (0.27; 15.03)	89.27 (0.42; 13.63)
Ability to manage stress	3178	1148	86.12 (0.28; 16.00)	84.55 (0.48; 16.13)
Confidentiality	3376	1254	93.52 (0.21; 12.12)	93.99 (0.32; 11.24)
Appearance and behaviour	3412	1286	93.60 (0.21; 12.05)	94.04 (0.32; 11.47)
Respect to their own health	3116	1122	89.74 (0.25; 13.71)	90.02 (0.41; 13.76)
Trustworthiness/honesty/probity	3371	1258	93.38 (0.21; 12.33)	94.47 (0.32; 11.28)
Management/leadership skills	2899	994	84.04 (0.30; 16.22)	84.77 (0.49; 15.48)
Overall ability	3378	1241	89.71 (0.25; 14.60)	90.78 (0.38; 13.37)
Averages	3219.41	1173.21	88.71 (0.26; 14.78)	89.27 (0.41; 14.14)

a indicates a significant (p≤0.05) difference between PEP participants and AGPT participants on these items

Table 3: Overview of PEP and AGPT self-evaluation data

Item	Mean			
	PEP Self Evaluation	PEP Colleague	AGPT Self Evaluation	AGPT Colleague
Clinical knowledge	75.10	88.17	66.37	89.10
Clinical ability	78.34	87.94	69.89	89.14
Communication with patients	81.90	87.55	77.36	89.68
Compassion/empathy	86.43	90.53	79.78	90.40
Colleague communication	80.63	88.83	74.07	89.58
Teaching and training colleagues	70.97	83.31	65.24	84.34
Punctuality and reliability	83.10	88.89	75.60	90.17
Respect for colleagues	90.04	92.76	80.44	92.80
Ability to say 'no'	71.07	82.99	61.98	81.20
Awareness of limitations	84.03	87.22	74.95	87.66
Team orientation	81.84	87.41	72.75	88.14
Use of resources	79.60	87.76	72.31	89.02
Ability to manage stress	75.48	86.04	67.69	84.52
Confidentiality	90.71	93.51	81.11	93.84
Appearance and behaviour	84.64	93.59	78.02	93.94
Respect to their own health	74.76	89.67	72.53	89.71
Trustworthiness/honesty/probity	88.97	93.37	82.86	94.24
Management/leadership skills	75.06	83.73	66.44	84.35
Overall ability	78.25	89.68	67.91	90.60
Averages	80.57	88.58	73.02	89.08