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Effects of competitive research training funding on the careers of medical doctors¹

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Introduction

ITMO Cancer of Aviesan has launched in 2011 a competitive funding programme to foster fundamental and translational research training for medical doctors by a full-time training funding for either Master second year degree (M2), doctorates and post-doctorates in cancer research. The objective was to promote professional curricula that sustain cancer research evolutions by bridging the gap between sciences and clinical care.

This programme was analysed with an emphasis on the career paths of the M2 and PhD laureates after their training to gain insights on the outcomes and impacts of the funding programme.

Methods

Information about the candidates has been retrieved from the final reports filled by the laureates for their career wishes and their immediate whereabouts after the grant. Further information about the career paths was obtained from public databases on the internet. Main internet sources were Theses.fr (a French doctoral thesis database; <https://www.theses.fr/>), French hospitals institutional websites, ResearchGate (<https://www.researchgate.net>), Pubmed (<https://pubmed.ncbi.nlm.nih.gov/>), and LinkedIn (<https://www.linkedin.com>). On the sample considered, sufficient information could be retrieved for 25 out of 37 M2 laureates and 21 out of 28 PhD laureates. The remaining M2 and PhD laureates were excluded for insufficiency of the available information.

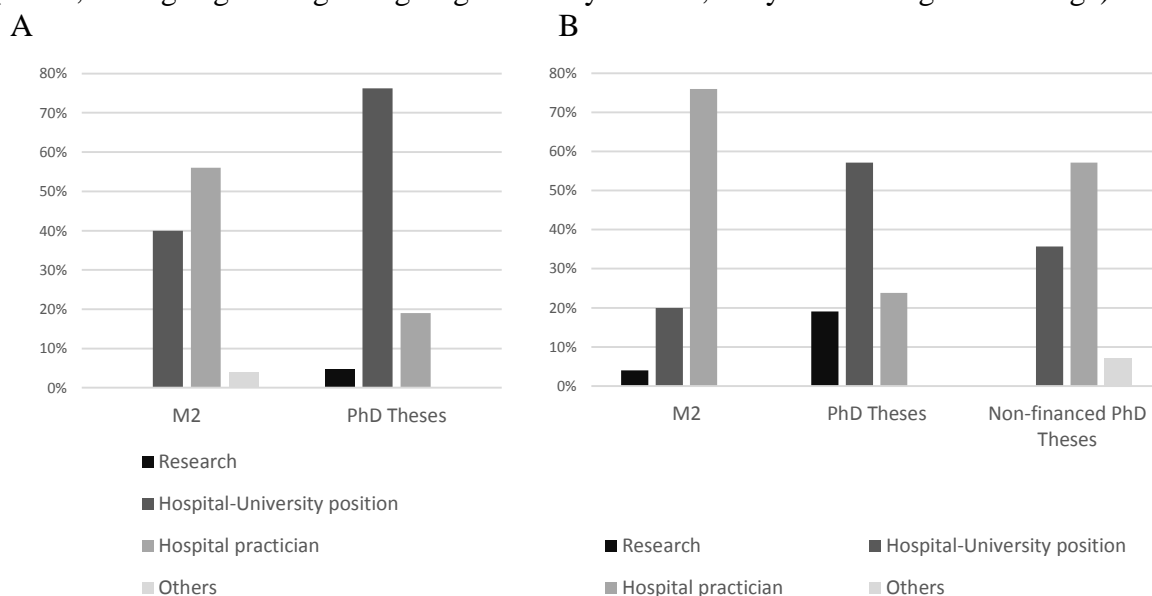
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Findings

Career Wishes vs. Actual Careers

Laureates career wishes as expressed in the final reports were compared with the laureates' actual careers 3 years on average after the end of the funding. The wish to pursue a hospital-university double career increased with the curriculum, from 40% for M2 laureates to 76% for PhD laureates. Inversely, 56% of M2 students envisioned a purely hospital career compared to 19% of PhD laureates (Figure 1A). Interestingly, at the time of the study, the data is different, as 76% of M2 laureates were in a purely hospital career path and only 20% were having a hospital-university double career. The percentage of hospital-university double careers was increasing with the curriculum, as 57% of the PhD laureates went into that path. Interestingly, candidates for a PhD that were not-selected by the ITMO Cancer Aviesan Programme (N=14) were fewer in the hospital-university path than the laureates (36% vs 57%), although they all fulfilled a PhD thesis in research due to other fundings (Figure 1B).

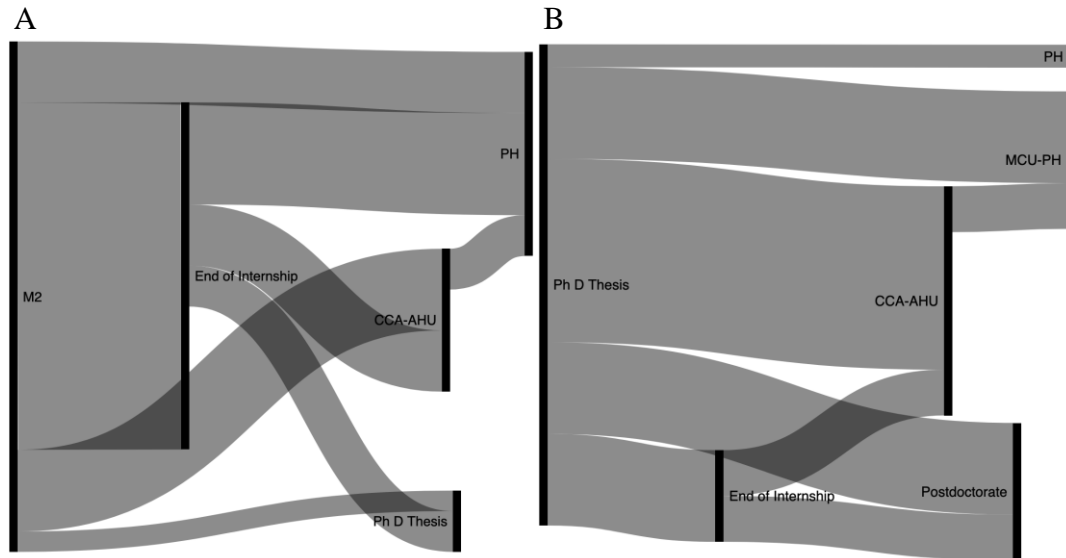
Figure 1. Career wishes (A) versus effective careers (B) for laureates of a research M2 (N=25; average age at beginning of grant : 28 years old; 4 years hindsight in average), or a PhD thesis (N=21; average age at beginning of grant : 32 years old; 3.5 years hindsight in average).



Career Paths

A closer look on the career paths after the funding shows that about 12% of research M2 laureates went on to complete a PhD thesis, a number that is likely to be an underestimation due to the limited hindsight (figure 2A) and 29% of PhD thesis laureates were in a postdoctoral fellowship (figure 2B).

Figure 2. Career paths after a research M2 (A), or a PhD Thesis (B). PH: Permanent hospital practitioner position, MCU-PH: Permanent university lecturer-hospital practitioner position, CCA-AHU: Temporary hospital practitioner or university-hospital position.



Discussion and Conclusions

Only few laureates of a M2 degree were continuing with research activities. Although several factors are influencing the decision to engage significantly in research, as analysed by Amgad and colleagues (2015), some laureates might have done a M2 degree in research to fulfil the requirements of such a degree to pretend to senior tenure positions in a hospital department in France. A return to clinical activities between a Master 2 degree and a PhD in research was often observed, deemed by former laureates as important for clinical expertise and insured senior tenure positions. Even if the hindsight did not allow us to have the complete career paths, we observed a clear tendency for doctorate laureates to engage more in career paths involving research.

The career wishes as expressed by laureates were also presenting a clear shift after a PhD with more laureates reporting wishes to have research activities, albeit mostly together with clinical work. Interestingly, the fulfilment of those wishes was also increasing with the doctorate laureates having a career mostly in accordance to the expressed wishes.

The medical students of the contrafactual group were less likely to be involved in research later in their careers even though all of them did a PhD thesis funded by other means. This could be explained either by an attractiveness of the programme that successfully recruited or selected medical students interested in research or by features of the programme that allowed the laureates to perform well in research.

This study on medical students laureates of research trainings therefore indicates that engaging in a PhD thesis in research is more indicative of future research activities than a Master 2 degree. The scope of the programme has been reassessed upon this analysis to focus on PhD thesis grants.

References

Amgad, M., Man Kin Tsui, M., Liptrott, S. J., & Shash, E. (2015) Medical Student Research: An Integrated Mixed-Methods Systematic Review and Meta-Analysis. *PLoS ONE*, 10(6), e0127470.