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COMMENTARY

The Nagoya University and the University of Adelaide Joint PhD Degree Program in Medicine – A Program of Opportunity

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Abstract: The Joint PhD Degree Program (JDP) between Nagoya University (NU) and the University of Adelaide (UoA), launched in 2015, was the first such initiative of its type in Japan. Evolving from a student exchange, it required the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) accreditation and alignment of differing PhD admission criteria. Challenges included degree naming and eligibility requirements, which NU and UoA addressed through mutual recognition agreements. Since inception, the JDP has maintained steady enrolment, with doctoral degree students engaging in joint research and publishing over 30 peer-reviewed articles. Future developments include postdoctoral pathways and industry internships, reinforcing the Program's role in fostering and enhancing global medical research collaboration.

Keywords: joint degree program, Australia, Japan, PhD

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Introduction and Program Establishment

Nagoya University (NU) Graduate School of Medicine was the first academic institution in Japan to establish a Joint PhD Degree Program (JDP).[1] This program was launched in 2015 between the NU Graduate School of Medicine and the University of Adelaide (UoA) Faculty of Health and Medical Sciences. The initial contact between NU and the UoA was made through an international network of leading universities (AC21 academic consortium), established in 2002 and coordinated by NU, and formalized with a university-level Memorandum of Understanding (MOU). The collaboration began as a clinical clerkship undergraduate medical student exchange program. As this program progressed, we established a joint supervision program in medicine for PhD students, which evolved into the JDP in medical sciences.

As the JDP was the first of its kind in Japan, program establishment required the submission of detailed documentation to the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) to receive program accreditation. All departments from NU Graduate School of Medicine were eligible to receive students, and the JDP allocated four student positions per academic year (two from NU and two from UoA). To meet the eligibility criteria for entry into the JDP, a candidate needed to meet the requirements for admission and enrolment in the PhD program at both Institutes. Initially, this proved somewhat challenging due to the significant differences in the higher degree academic systems between Australia and Japan.[2]

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Challenges in Degree Recognition and Admission Criteria

One major obstacle was the name of the degree. Since we were establishing a JDP, the degree name had to be consistent across the two universities. As the Japanese MEXT recognizes only registered degrees, consensus was reached with the UoA to use a name that was in the MEXT registry. Another significant hurdle was the eligibility criteria. Specifically, to enter the PhD program, NU required at least 18 years of formal education (12 years of elementary and high school education and 6 years of undergraduate education). Students with less than 6 years of undergraduate education (ie, 4 or 5 years) were required to either have a Master's by Research (MRes) degree or spend one year as a "research student" at NU. Under the Japanese education system, undergraduate medical education lasts 6 years, so students who graduate from a Faculty of Medicine in Japan are eligible to enter the PhD program, having 18 years of education.[3] Conversely, students who graduated from an overseas medical school with 5 or 5.5 years of education were required to spend 6 or 12 months as a "research student" at a Japanese university. Non-medical students who graduated from 4-year undergraduate programs, such as Bachelor of Health and Medical Science or Bachelor of Science programs and Honours, were typically required to complete a MRes before enrolling in a PhD program at a medical school in Japan.

In contrast, UoA required PhD applicants to successfully complete a minimum of 12 units (half a year of full-time study) of research, commonly as part of an Honours degree (Standard ≥ IIA), MRes or a relevant Masters by Coursework degree (overall Australian Grade Point Average (GPA) of ≥5.0 and a GPA of ≥6.0 in the research component), unless they have demonstrated an outstanding level of academic achievement and are experienced in research as specified in the relevant program rules. It should be noted, the GPA is calculated differently in Japan and Australia. NU uses a 4.3 scale, while the UoA uses a 7.0 scale. While some Japanese students have completed an MRes, the majority of students are medical doctors who have completed 18 years of education but have not completed a relevant Master's degree. Therefore, although they are generally eligible for entry into the NU program, they would not be eligible for entry into the UoA PhD program, unless they have demonstrated the required research experience. Similarly, most UoA students who are candidates for the JDP have completed the Honours program but have less than 18 years of education, making them ineligible for entry into the NU PhD program. The Honours degree does not exist in the Japanese academic system[4] and was therefore not recognised. To reconcile these conflicting criteria, NU and UoA reached a consensus on eligibility criteria for JDP students. Specifically, NU recognized the UoA Honours degree as MRes equivalent. Furthermore, NU plans to introduce an Honours program for undergraduate medical students, serving as a pioneer in implementing this type of program at Japanese medical schools. This will assist with the eligibility criteria for the UoA.

Implementation and Student Enrolment Trends

Since the commencement of the JDP in 2015, there has been a steady influx of new students, with program occupancy reaching 75% by 2020. However, due to the COVID-19 pandemic, no new students were enrolled into the program in 2021 and 2022. Intake recommenced in 2023, and a program occupancy of approximately 50% has been achieved. It is worth noting that we have an equal number of students from NU and UoA, thus administration is not skewed towards either institution.

The main challenge in developing the JDP is identifying potential PhD supervisors at NU and UoA for JDP students and determining joint research themes. To this end, we organized joint online seminars and workshops focused on specific research areas. Until 2020, these workshops and seminars were held face-to-face, with the host university rotating each year. The delegation consisted of university administrators, principal investigators, and prospective JDP candidates (ie, 1st year PhD students and Master's or Honours students). At NU, students in the 1st year of their PhD were the main target for recruiting new JDP candidates as the program rules and regulations permit transfer of students from the regular PhD (ie PhD in comprehensive medical science) to the JDP, but only during the 1st year of candidature. Conversely, all UoA JDP candidates directly enrolled in the JDP and did not transfer from another PhD program.

Program Structure and Academic Requirements

In terms of program structure, the program typically takes four years to complete. JDP students are required to spend the first year of their PhD candidature at the "home" university (the university in which they enrolled in the JDP), then at least one year (which can be extended) at the "host" university (JDP counterpart university to the "home" university), before returning to the "home" university to complete their studies. A single supervisory panel consists of academics from both the UoA and NU. During the JDP, the bulk of the time is dedicated to the research associated with the thesis, although students are required to attend research seminars to broaden their knowledge. This research should be compiled as a doctoral dissertation thesis with at least three research chapters. For NU, at least one chapter should be published as a research article or review in a peer-reviewed journal that has an impact factor (no minimum threshold required), with the PhD student as the first author and academic supervisors from both universities (ie, NU and UoA) as co-authors. The UoA requires that students undergo milestones and reviews of academic progress of the home or host institute depending on the location of the student is at the time. However, all students are required to complete the UoA's first milestone, the Core Component of the Structured Program (CCSP), at 4–6 months for home students and within 2 months of arrival in Adelaide for students where UoA is the host institute. In addition, students are required to complete Career and Research Skills Training (CaRST). The four domains of the Vitae Research Development Framework form the basic structure of CaRST aimed at developing a proficient and well-rounded researcher.[5] In addition to thesis submission, the JDP also requires the students to undertake an oral thesis defence. This is conducted in front of a joint examination committee including two external examiners, and an additional Professor appointed by NU, with Deans of both institutions (or delegates) as optional participants on the examination committee. Academic supervisors from NU and UoA and administrative advisors from both Universities also commonly attend the thesis defence. Administrative advisors are integral to the JDP and oversee liaison and logistical aspects of the JDP. These logistical issues involve, but are not limited to, student recruitment, organizing research seminars, following up on current JDP students, and holding regular meetings to exchange information. The JDP is outlined in the MOU signed by representatives of both NU and UoA. The duration of the MOU is five years, with the aim to renew and continue this advantageous partnership.

Outcomes, Achievements, and Future Prospects

In terms of student performance, as of September 2024, our JDP students have published (as first authors or co-authors) over 30 research articles[6–40] in peer-reviewed journals. It should be noted that most of these articles were published in quartile 1 (Q1; i.e in the top 25% of journals in a specific discipline) journals (Figure 1A and B) within their respective research discipline, with an average impact factor of 7.3 (Figure 1D). Most of the publications were research articles in the field of gastroenterology (Figure 1C).

Publishing in top-tier journals demands up-to-date research and a certain level of digital literacy in medicine to conduct, analyse, review, and discuss scientific work. To strengthen the educational framework of the JDP, we integrated principles of modern educational theory,[5] including the use of educational technology and artificial intelligence (AI) to support personalized learning and cross-institutional collaboration. These efforts encompass, but are not limited to, e-learning modules, AI-driven tools for plagiarism detection, and similar applications. JDP candidates are required to follow guidelines on the responsible use of generative AI in research outputs, emphasizing that JDP candidates remain solely accountable for their work and must consult supervisors before using such tools. AI may be used for minor editorial improvements and generating images (with clear acknowledgment), but not for generating thesis content or translating large texts. All AI usage must be transparently documented and disclosed in acknowledgments, ensuring alignment with academic integrity and research conduct policies. Such improvements, combined with a strong focus on research ethics, are designed to promote critical thinking and responsible research practices, thereby enhancing student performance and long-term academic success.

We recognize the need to establish the JDP as an attractive and unique program to recruit new students. To that end, we plan to establish a dedicated postdoctoral path for JDP students, with postdoctoral placements envisioned to be exclusive to JDP students. Furthermore, we are planning to expand opportunities for a PhD industry internship to provide opportunities for JDP PhD candidates to undertake internships in industry, to better prepare them for their post-PhD careers.

Figure 1 Research output (as of September 2024). (**A**) Distribution of Journal Quartiles, (**B**) Impact Factor and CiteScore by Journal Quartile, (**C**) Distribution of Articles by Best Category, (**D**) Number of Articles and Average Impact Factor by Year.

Conclusion and Broader Impact

We are keen to observe and assess the long-term results of our program, contingent upon sustained interest and enrolment. We plan to track the career paths of our JDP graduates, not only to assess if they pursue an academic career path as medical researchers but also to gauge their level of engagement in research and eventual appointment in leadership roles. Despite pending outcomes, we deem this program a success and urge other graduate medical schools to establish similar initiatives, given medical research is fundamentally a global effort, and the JDP promotes international research collaboration.

Data Sharing Statement

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate

This commentary is non-interventional and based on descriptive data derived from publicly available information; therefore, ethical approval from a specialized committee is not required.

Consent for Publication

All authors have read and approved the manuscript. The views expressed in the submitted article are our own and not an official position of the involved institutions.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Disclosure

The authors declare that they have no competing interests in this work.

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