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# BMJ Open

## Long-term contribution of international electives for medical students to professional identity formation: A qualitative study

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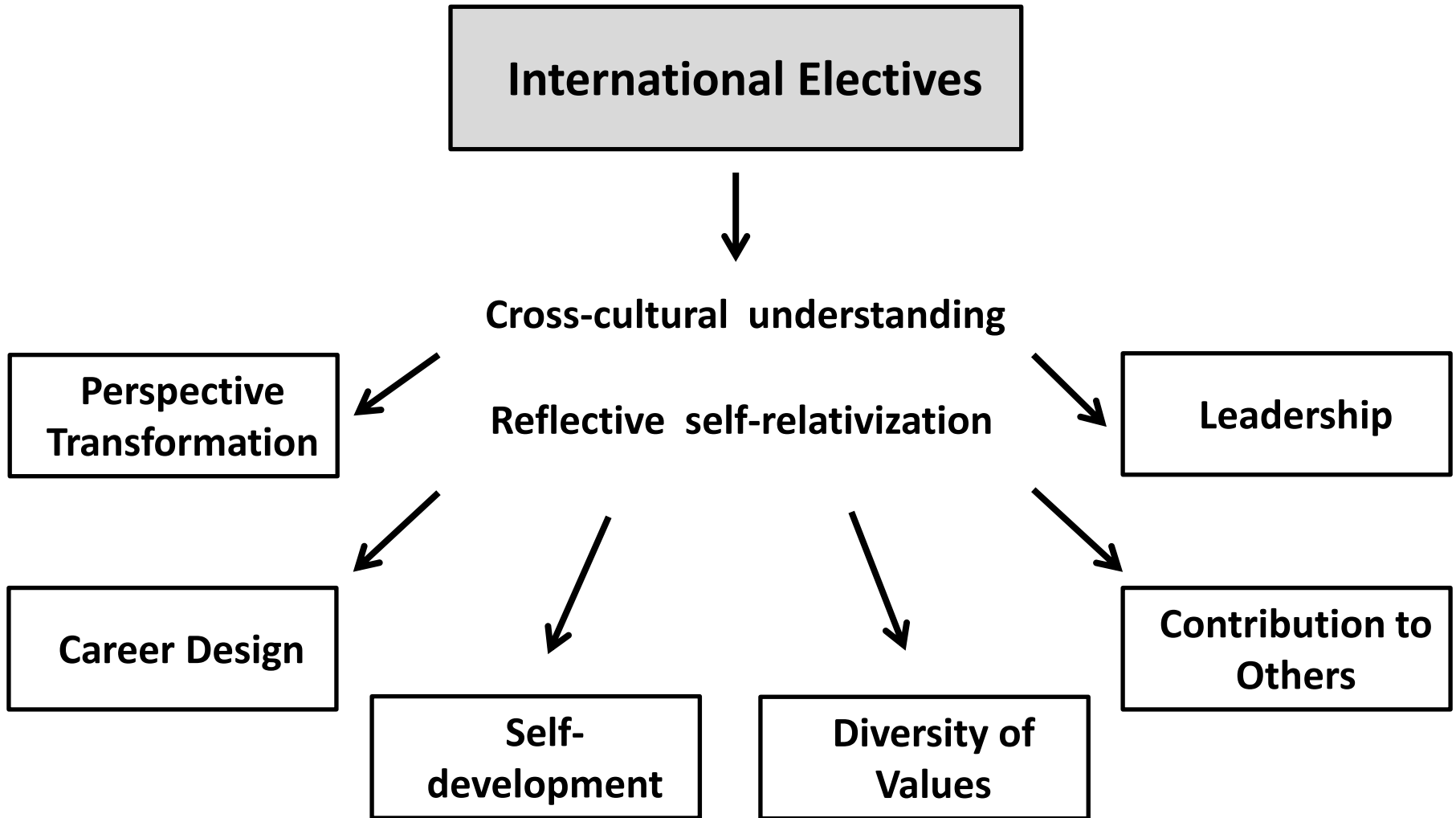
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**Figure 1. A schematic representation of the socialization process**

## Standards for Reporting Qualitative Research (SRQR)\*

<http://www.equator-network.org/reporting-guidelines/srqr/>

Page/line no(s).

### Title and abstract

|  |     |
|--|-----|
| <p><b>Title</b> - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended</p> | 1   |
| <p><b>Abstract</b> - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions</p>   | 2,3 |

### Introduction

|   |       |
|---|-------|
| <p><b>Problem formulation</b> - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement</p> | 5,6,7 |
| <p><b>Purpose or research question</b> - Purpose of the study and specific objectives or questions</p>  | 7,8   |

### Methods

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| <p><b>Qualitative approach and research paradigm</b> - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**</p>  | 8     |
| <p><b>Researcher characteristics and reflexivity</b> - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability</p> | 10,11 |
| <p><b>Context</b> - Setting/site and salient contextual factors; rationale**</p>  | 8,9   |
| <p><b>Sampling strategy</b> - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**</p>  | 9,10  |
| <p><b>Ethical issues pertaining to human subjects</b> - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues</p>  | 10,11 |
| <p><b>Data collection methods</b> - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**</p>   | 10    |

|                       |   |         |
|-----------------------|---|---------|
| 1<br>2<br>3<br>4<br>5 | <b>Data collection instruments and technologies</b> - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study | 10,29   |
| 6<br>7<br>8           | <b>Units of study</b> - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)  | 9,27,28 |
| 9<br>10<br>11<br>12   | <b>Data processing</b> - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts    | 10,11   |
| 13<br>14<br>15<br>16  | <b>Data analysis</b> - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**                                 | 11      |
| 17<br>18<br>19<br>20  | <b>Techniques to enhance trustworthiness</b> - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**  | 11      |

### Results/findings

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|----------------------|---|--------------------------|
| 23<br>24<br>25<br>26 | <b>Synthesis and interpretation</b> - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory | 12,13,14,15,<br>16,17,30 |
| 27<br>28<br>29       | <b>Links to empirical data</b> - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings   | 12,13,14,15,<br>16,17    |

### Discussion

|  |   |             |
|--|---|-------------|
| 32<br>33<br>34<br>35<br>36<br>37<br>38 | <b>Integration with prior work, implications, transferability, and contribution(s) to the field</b> - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field | 17,18,19,20 |
| 39                                     | <b>Limitations</b> - Trustworthiness and limitations of findings  | 19,20       |

### Other

|                |   |    |
|----------------|---|----|
| 42<br>43<br>44 | <b>Conflicts of interest</b> - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed | 21 |
| 45<br>46       | <b>Funding</b> - Sources of funding and other support; role of funders in data collection, interpretation, and reporting                      | 21 |

\*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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\*\*The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

**Reference:**

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014  
DOI: 10.1097/ACM.0000000000000388

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## Title

Long-term contribution of international electives for medical students to professional identity formation: A qualitative study

## Authors

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## Abstract

**Objectives:** Globalization has given medical university students the opportunity to pursue international electives in other countries, enhancing the long-term socialization of medical professionals. This study identified the long-term effects of international electives on the professional identity formation of medical students.

**Design:** This is a qualitative study.

**Setting:** The authors interviewed Japanese medical professionals who had completed their international electives more than 10 years ago, and analyzed and interpreted the data using a social constructivism paradigm.

**Participants:** A total of 23 medical professionals (mean age 36.4 years; range 33–42 years) participated in face-to-face, semi-structured in-depth interviews.

**Results:** During the data analysis, 36 themes related to professional identity formation were identified, and the resulting themes had five primary factors (perspective transformation, career design, self-development, diversity of values, and leadership). It was concluded that international electives for medical students could promote reflective self-relativization and contribute to medical professional identity formation. Additionally, such electives can encourage pursuing a specialization and academic or non-academic work abroad. International electives for medical students could contribute to medical professional identity formation on the basis of cross-cultural understanding.

**Conclusions:** This study addressed a number of issues regarding the long-term impact of international elective experiences in various countries on the professional identity formation of Japanese medical professionals. This study offers some guidance to mentors conducting international electives and provides useful information for professional identity formation development in medical professionals.

## Strengths and limitations of this study

- This study identified the long-term effects of international electives on the professional identity formation of medical students.
- Qualitative data were collected from 23 medical professionals who completed their international electives more than 10 years ago and were analyzed using the thematic analysis method.
- The study was limited by the focus on only Japanese medical professionals whose professional identity formation was affected by their innate cultural values and social norms.
- Further investigation of how medical professionals adopt their experiences to their environments is required.

## Introduction

Globalization has given medical university students the opportunity to pursue international electives in other countries<sup>1-3</sup>, which can enhance the long-term socialization of medical professionals. Studies have found that international electives may have a transformative learning potential<sup>4,5</sup> as they immerse medical students in cross-cultural settings that can strengthen and challenge their professional identities<sup>6</sup>. However, these studies have not clarified the long-term contributions to medical professional socialization. Therefore, this study explored the long-term effects of international electives for medical students on medical professional socialization from a professional identity formation (PIF) perspective.

As international electives for medical students have been found to contribute to medical education internationalization by enhancing global health competencies and encouraging global citizenship<sup>7,8</sup>, they are an important part of undergraduate medical training to prepare students for the globalized world<sup>5</sup>. International electives for medical students enhance the knowledge of medical students about areas and issues outside the traditional medical school curricula, such as current research, global clinical practices, healthcare systems around the world, and cultural competencies, which often influence the students' career choices<sup>6,9,10</sup>. Previous studies have found that international electives for medical students increase the probability of students choosing primary care specialties (e.g., family medicine, internal medicine, and pediatrics) or public health as their career paths<sup>2,11</sup>. However, through international electives, it is important to understand how students learn regardless of whether they choose to follow primary care specialties<sup>12</sup>. International electives for medical students give medical students an opportunity to reflect on their experiences by highlighting their personal and professional identities and allowing them to closely examine the health outcomes in their own countries<sup>10,13</sup>. Several participants who have reflected on their

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2  
3 undergraduate careers have stated that their elective experiences were transformative, served  
4 to refresh the values that were underpinning their initial motivations to enter the profession<sup>5</sup>  
5 and led to valuable insights into the potential congruence of their personal and professional  
6 identities<sup>14</sup>. As mentioned in the PIF framework by Cruess et al<sup>15,16</sup>, socialization is useful  
7 when seeking to understand the transformative learning of international electives for medical  
8 students as medical students are often in a formative state and thus more susceptible to the  
9 influences of their cultural backgrounds and learning environments<sup>17</sup>. Socialization and  
10 identity formation have been found to be strongly connected<sup>18</sup>. Using narrative reflective  
11 reports, Sawatsky et al.<sup>4</sup> identified some transformative learning components—disorienting  
12 experiences, emotional responses, critical reflection, perspective changes, and a commitment  
13 to future action—and clarified how these were related to professional identity transformations  
14 for residents participating in international electives. However, Sawatsky et al.’s<sup>4</sup> study did not  
15 explain these relationships in undergraduate settings or clarify the long-term contributions to  
16 medical professional socialization. As educational activities that foster a deep PIF-associated  
17 transformation, such as international electives, should be long-term and cumulative in  
18 nature<sup>19</sup>, this study focused on these aspects.

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42 In western education environments, international electives for medical students are often  
43 conducted in and focused on low- and middle-income countries. However, in Asian  
44 countries, including Japan, these electives are generally conducted and focused on developed  
45 countries. A National Survey in Japan found that a majority of Japanese exchange students  
46 traveled to both western and Asian countries, with approximately 70% choosing to study in  
47 Europe and North America, reflecting the desire of Japanese students to acquire medical  
48 knowledge or experiences through the English language<sup>3,20</sup>. However, 40% of the United  
49 Kingdom’s medical students chose developing countries and approximately one-third of  
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3 medical students in the United States, Canada, and Germany selected low- and middle-  
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5 income countries to complete their international electives before graduation<sup>21,22</sup>.  
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### 10 ***Professional Identity and Socialization***

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12 Becoming a physician is challenging and transformative<sup>23</sup>; therefore, medical education  
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14 needs to be responsive to the changes in students' professional identities from their  
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16 experiences and from society<sup>24</sup>. Cruess et al.<sup>17</sup> defined professional identity as “a  
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18 representation of self, achieved in stages over time during which the characteristics, values,  
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20 and norms of the medical profession are internalized, resulting in an individual thinking,  
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22 acting, and feeling like a physician,” and Holden et al.<sup>19</sup> recommended professional identity  
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24 development to be integrated with core medical knowledge, skills, and attitudes. Hence,  
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26 professional identity is developed through socialization from a layperson to a professional,  
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28 and it is unique to each learning environment<sup>15</sup>. International electives for medical students  
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30 provide them with unique learning experiences that have transformative components assisting  
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32 in professional and personal socialization. Jarvis-Selinger, Pratt, and Regehr<sup>18</sup> defined PIF as  
33  
34 “an adaptive developmental process that happens simultaneously (1) at the level of the  
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36 individual, which involves the psychological development of the person and (2) at the  
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38 collective level.” Studies have found that role models, mentors, and experiential learning, in  
39  
40 both clinical and nonclinical situations, were the most powerful PIF factors<sup>15</sup>. Therefore,  
41  
42 international electives are expected to be part of a medical student's long-term, cumulative  
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44 education that enacts the deep transformations associated with PIF<sup>19</sup>. Frost and Regehr<sup>23</sup>  
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46 suggested that the implications arising from the different professional identities of medical  
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48 students needed to be explored.  
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### 58 ***Research Question***

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3 Using a qualitative method, this study examined the contribution of international electives for  
4 medical students conducted in various countries, mainly high-income countries, to the PIF of  
5 Japanese medical professionals, with the primary objective being to assess the relationship  
6 between the electives and PIF to clarify their long-term effects. Therefore, the research  
7 question driving this qualitative research was “How do international electives for medical  
8 students contribute to the PIF of Japanese medical professionals?” It is expected that the  
9 study findings could guide mentors when conducting international electives for medical  
10 students and provide useful information to foster PIF development in medical professionals.  
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## 24 **Method**

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26 We followed the Standards for Reporting Qualitative Research recommendations<sup>25</sup>. This  
27 study was based on the constructivist paradigm stating that human knowledge is not  
28 discovered but socially constructed<sup>26</sup>. The qualitative data were collected from 23 face-to-  
29 face, semi-structured in-depth interviews and 16 narrative reflective reports on international  
30 electives for medical students written by the study participants to clarify the relationships  
31 between these experiences and PIF pedagogy. All of the interview data and reflective reports  
32 were inductively analyzed and integrated through the data analysis. Thematic analysis was  
33 employed to elicit the subjective meanings, which involved generative coding and theoretical  
34 interpretations by several researchers. The authors were familiar with international electives  
35 because we have participated in post-international electives presentations by medical students  
36 and continue to engage with medical students participating in international electives through  
37 teaching practices and mentoring.  
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## 57 **Setting**



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3 The National Survey of Japan reported that 790 medical students in 2012 and 1069 medical  
4 students in 2013 were involved in clinical clerkships or short-term study abroad programs<sup>3</sup>,  
5 which was approximately 2% of all Japanese medical students. The University of Tokyo's  
6 international electives for medical students have been formal electives since 2001 and are  
7 taken by approximately 3% of the university's medical students each year, which is  
8 considered higher than average in Japan. Similar to the national statistics results, a majority  
9 of the university's exchange students choose to travel to western countries, with  
10 approximately 60% choosing to study in Europe and North America, every year. Although  
11 more than half of the students opt to complete their electives in the settings available to them  
12 through formal programs offered by the institutions, some students choose to complete their  
13 electives in their own choices. As the international elective content is different at various  
14 overseas host institutions, they are decided through direct communication between the  
15 organization and the undergraduate student. Regarding financial support, only some students  
16 with excellent grades were offered scholarships.

### 37 ***Participants***

38 To understand the long-term effects of such electives, the participants in this study were  
39 University of Tokyo's medical professionals who had been graduated for more than 10 years  
40 prior to this study, after completing their international electives. Of the viable participants, all  
41 are licensed and experienced medical professionals at a variety of institutions, including  
42 university and community hospitals, research centers, medical companies, and the Ministry of  
43 Health. From 2001 to 2009, 133 University of Tokyo undergraduate students completed  
44 international electives, and 70 contactable medical professionals who had completed their  
45 international electives were invited via email to participate in the study. Overall, 23  
46 participants (mean age 36.4 years; range 33–42 years) agreed, all of whom had taken the  
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3 international electives program more than 10 years ago. Of the 23 participant profiles given  
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5 in Table 1, a majority chose to go to the U.S., with only a few choosing other countries.  
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### 10 ***Patient and Public Involvement***

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12 No patients involved.  
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### 16 ***Data Collection***

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18 The authors analyzed narrative reflective reports on the international electives for medical  
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20 students that had been written by the study participants more than 10 years ago. Narrative  
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22 reflective reports on the international electives for medical students were instructed for each  
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24 student to submit immediately after completing the international electives. In this report, the  
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26 students were asked to describe what kind of training they had received in their field as well  
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28 as what their feelings and struggles through their actual experience and how they interacted  
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30 with the local medical students. Moreover, the reports were shared with not only the faculty  
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32 but also other medical students so that they could view it with each other. These reports on  
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34 international electives for medical students were originally written to take undergraduate  
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36 students beyond global health facts, as a self-reflective learning process emphasizing  
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38 transnational competence and heightening their empathy for humanity underlying global  
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40 health issues<sup>27</sup>. Therefore, they were considered useful in assessing the existing and potential  
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42 PIF pedagogy<sup>28</sup> and helpful in understanding the long-term contributions of the international  
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44 electives for medical students on the socialization of the study participants. However, not all  
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46 of the reports that were reflective of the medical students' narrative of the international  
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48 electives for them as written by the study participants existed, and only 16 reports reflective  
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50 of the narrative were viewable. The reason why some reflections were excluded in this data  
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52 collection is simply because those reports did not exist. Open-ended data were also collected,  
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3 using an audio recorder, from face-to-face, semi-structured in-depth interviews, wherein the  
4 participants' feelings and beliefs were explored<sup>29</sup>. Interviews were conducted by the first  
5 author (MH), which lasted 40–80 minutes, at the participant's place of clinical practice  
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8 between December 2018 and March 2019. All of the interviews were conducted in Japanese.  
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10 Total recorded data comprised 1077 minutes of recording. An interview guide (see Table 2)  
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12 was used to clarify how the participants viewed their experiences and how those experiences  
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14 had contributed to their PIF. The authors agreed that the interview guide was suited to the  
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16 research purpose; therefore, it was not changed. However, the interviews were flexible so that  
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18 the participants could take the discussion in any direction. The recorded data were transcribed  
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20 verbatim by the authors immediately after each interview.  
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### 28 *Ethics*

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30 The Institutional Review Board of the University of Tokyo approved this study (2018001NI-  
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32 (1)). Ethical concerns included maintaining confidentiality of the sensitive information  
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34 revealed in the interviews and reflective reports. The participants were informed of the  
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36 study's scope and nature, and all of them provided written consent. They were also informed  
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38 that all data were confidential and that the given consent could be withdrawn at any time.  
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### 44 *Data Analysis*

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46 All of the interview data and reflective reports were analyzed and integrated through the data  
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48 analysis. The data were analyzed using the thematic analysis method, which involved  
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50 generative coding and theorizing to identify instances in the data set that were similar in  
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52 concept<sup>30-31</sup>. Data analysis followed an inductive approach where the data are allowed to  
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54 speak for themselves by the emergence of conceptual categories and descriptive themes.  
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57  
58 Although the research question was partly theory-driven, the researchers initially conducted a  
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3 primary level thematic analysis to determine themes. After the researchers found the themes  
4  
5 and following further team discussion, we re-examined the literature to identify the  
6  
7 conceptual perspective. The first and second authors (MH and SD, respectively) were  
8  
9 formally trained in using NVivo11 for Windows (QSR International, Australia, a computer  
10  
11 software program to support the analysis of qualitative data) and conducted all the analysis  
12  
13 steps, including the reading and rereading of the narratives until the researchers found the  
14  
15 themes and categorizing the data from a constructivist perspective. The themes were  
16  
17 categorized into main and subcategories and were then tabulated using Nvivo11 to identify  
18  
19 the theme frequencies in the interviews and reports. After the data collection and analyses,  
20  
21 the study authors agreed that theoretical saturation had been reached as there were no new  
22  
23 themes emerging in the data set, and a complete understanding of the identified concepts had  
24  
25 been achieved. Member-checking was conducted twice by the research participants after the  
26  
27 interviews and analyses to confirm that there is no difference in interpretation and that it is  
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29 not contrary to the intended content.  
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## 38 **Results**

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40 From the thematic analysis of the interviews and reports, 36 emergent themes were identified,  
41  
42 several of which were related to PIF. The resulting themes had five primary factors:  
43  
44 perspective transformation, career design, self-development, diversity of values, and  
45  
46 leadership (see Table 3). International electives for medical students often lead to  
47  
48 specializations and further academic or non-academic work abroad. Although the contents of  
49  
50 international electives for medical students were different between developing countries and  
51  
52 developed countries, they were common in that international electives for medical students  
53  
54 could promote reflective self-relativization and contribute to PIF on the basis of the idea of  
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56 cross-cultural understanding (Figure 1). It also became clear that the themes of perspective  
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3 transformation, self-development, and diversity of values showed a linkage between the  
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5 themes.  
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### 10 *Perspective Transformation*

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12 Although it was difficult for most participants to specifically describe the international  
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14 electives' contents, most commented on the thinking that they had acquired, with the  
15  
16 impressions gained being the origins for their own perspective transformations as medical  
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18 professionals.  
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24 *Before international electives, I had the perception that surgeons were superior than*  
25  
26 *internists. However, when I met an internist during my international electives in the U.S. who*  
27  
28 *systematically assessed the whole body while carefully questioning and examining the body,*  
29  
30 *my perception that surgeons were superior to them changed markedly. (R7 Male - US -*  
31  
32 *Clinical: Report)*  
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38 In the past, there were many participants who chose a specialty that was different from what  
39  
40 they had hoped for at the time of international electives for medical students. However, they  
41  
42 went through a process of reflecting on their experience of international electives when  
43  
44 pursuing their own interests. Most participants also believed that the international electives  
45  
46 promoted self-relativization and assisted in their identity development as medical  
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48 professionals.  
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54 *It was very striking to me that about half of the patients who see the ER are uninsured. On the*  
55  
56 *other hand, I was able to see how doctors over-test and treat to avoid lawsuits... It was a*  
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3 *good experience to realize the position of the Japanese healthcare system by experiencing a*  
4 *different healthcare environment than Japan. (R19 Male - US - Clinical: Report)*  
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10 *After graduating, I became interested in health care policy, and now I am running a company*  
11 *with a vision to create a world where all people can live and die with conviction...I think this*  
12 *is a good opportunity to reevaluate myself. When training at university hospitals and*  
13 *affiliated hospitals, because these organizations are all very similar, there are few*  
14 *differences, so we don't think about what might be good or bad, or what might be incorrect. I*  
15 *think that this could be an extremely useful opportunity for reevaluation. (R19 Male - US -*  
16 *Clinical: Interview)*  
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### 28 ***Career Design***

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30 Most participants had continued their careers in Japan but believed that their experiences  
31 abroad had some impact on their mindset and work–life balance.  
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37 *What I saw during my short one-month stay was a very small part of the United States, but I*  
38 *felt that even if I had preconceived notions, I needed to rethink those preconceived notions*  
39 *based on what I had actually experienced. (R3 Female - US - Clinical: Report)*  
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47 *I'm going to the US next year as a postdoctoral researcher...When I think about what it was*  
48 *like when I had the opportunity to go to America as a medical trainee, this may seem a little*  
49 *vague, but this is the image I was able to give—with my experience at that time, it's not that*  
50 *the knowledge I learned there was of direct use, but having gone to America as a medical*  
51 *student was extremely useful to me in terms of planning my own life. (R3 Female - US -*  
52 *Clinical: Interview)*  
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5 The role models the participants encountered during their international electives for medical  
6 students assisted them in developing their careers and pursuing their own interests regardless  
7  
8 of whether they chose to follow primary care specialties or opted to work in their countries of  
9  
10 origin or abroad.  
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17 *I am interested in dementia, and during the international electives, I worked with researchers*  
18 *in the field to experiment at a specialized research facility in the United States. I was struck*  
19 *by the fact that the specialty is extremely fragmented, and even in the same area, there is*  
20 *little involvement in diseases outside of their own specialty. (R18 Male - US - Clinical /*  
21 *Research: Report)*  
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31 *After completing international electives, I wanted to pursue more specialized research in*  
32 *dementia and kept in touch with the mentors who had taught me specialized skills during my*  
33 *practice. I am currently conducting research in this field in the U.S., and the professors are*  
34 *still my direct mentors... Through my research, new therapeutics have been developed and*  
35 *are beginning to be used in clinical practice, so I think I can give back my knowledge in this*  
36 *field by adapting such a process when I return to Japan. (R18 Male - US - Clinical/Research:*  
37 *Interview)*  
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### 49 ***Self-development***

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51 The participants said that their experiences of having to adjust to their host country and their  
52 elective content by themselves and traveling to their international electives had contributed to  
53 their motivation and future independence and had affected their educational behavior in  
54 clinical situations.  
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6 *Since the hospital had no partnership with the university, I had to do all the preparations*  
7 *myself, and the preparations were more difficult than I expected. It was also my first time to*  
8 *go to a developing country, so I was very busy just before my trip, buying insurance and*  
9 *getting vaccinations... When I returned home, I realized the importance of water and*  
10 *electricity, and how safe Japan is. (R12 Male - Nepal - Clinical: Report)*  
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19 *Through the experience of international electives, I learned the importance of trying anything*  
20 *without fear of failure. Although I am now working in a different department than the one I*  
21 *trained in at the time, I am actively working with patients from a variety of social and*  
22 *economic backgrounds in a multidisciplinary approach. (R12 Male - Nepal - Clinical:*  
23 *Interview)*  
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33 Throughout their international elective experiences, the medical professionals could not only  
34 relativize the environment wherein they had been placed but were also forced to think more  
35 deeply about their own strengths. Therefore, the international electives for medical students  
36 enhanced the participants' future self-development.  
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44 *I was interested in treating congenital diseases, so I went to a lab that was doing gene*  
45 *therapy for hemophilia and had already gone through several trials. I was attracted to the*  
46 *work of the doctors who successfully combined both clinical and research, including unique*  
47 *consultation methods, genetic testing and post-diagnosis follow-up, and feedback to research.*  
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53 (R4 Female - US - Study: Report)  
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3 *In my current workplace, I am a researcher conducting epidemiological studies on child*  
4 *development. When I grow up, I lived in the United States due to my parents' work...For me*  
5 *in particular, I was raised over there, so I came back to Japan thinking that I could have*  
6 *become like them if I had stayed there. Well, I had an image of who I desired to be when I*  
7 *was there and the real figure of who I am today having come back to Japan...There was a*  
8 *real sense that clinical training in U.S. was superior, which I wanted to fight against,*  
9 *thinking that we had to somehow do our best in Japan as well. (R4 Female - US - Research:*  
10 *Interview)*  
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### ***Diversity of Values***

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26 Participants recognized not only the diversity of values they gained from their cross-cultural  
27 experiences but were also able to use these experiences when treating patients from other  
28 countries. Further, regardless of their specialties, they sought to imagine the patient's  
29 background and religious views when conducting their clinical practice.  
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38 *All in all, I would say that going to Brazil had a significant effect on me, but I cannot go so*  
39 *far as say that I would force this on Japanese people, or that I would impose my value*  
40 *system, which shifted slightly as a result of my time in Brazil, on Japan....I think I have*  
41 *become better able to respond to patients that have various views and values about life and*  
42 *death. (R5 Male - US/Brazil - Clinical: Interview)*  
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51 Through international electives, the participants believed that their experience assisted in  
52 their identity development as medical professionals and that it contributed to their interpretive  
53 and tolerant attitude toward patients and colleagues.  
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3 *What doctors take for granted and what nurses take for granted are not the same thing. I*  
4 *think there's a parallel between what the Japanese take for granted and what Americans take*  
5 *for granted. It's probably the same process of meeting with people who have different ways of*  
6 *thinking so that they can rub together and understand each other's thoughts. (R6 Male - US -*  
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Clinical: Interview)

### **Leadership**

The international elective experiences urged the participants to be more conscious about goal-setting and policy decision-making in organizations and gave them a better understanding of their own work environments and of how the working environment knowledge strengthened their awareness of target-setting and development.

*I decided on the content of my international electives through negotiations with the host laboratory, but I felt that the content could be changed as much as I wanted, depending on my sense of purpose. On the other hand, the United States has a system in place that allows researchers to devote themselves to their research, but I found it difficult to bring that to Japan. (R14 Male - US - Research: Report)*

*I am managing several projects while developing a new medical system that I have been interested in since my electives...I am currently involved in building a rapid response system for the hospital's needs in case of a patient's sudden change...Of course, each person's efforts are important, but I work based on the idea that a system that can provide high quality medical care at all times is important. (R14 Male - US - Research: Interview)*

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3 After international elective experiences, participants continued to self-evaluate their own  
4 leadership concept and considered the medical approach for the delegation of authority  
5 according to their own situation.  
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12 *I learned the importance of management through my electives in the United States... I am*  
13 *now working in policy-related work at the Ministry of Health, Labour and Welfare after*  
14 *leaving my clinical work... I am involved in health policy practice while working with*  
15 *medical institutions, and I feel that my experience in overseas training is helping me to focus*  
16 *on the decision-making process.* (R7 Male - US - Clinical: Interview)  
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### 26 ***Differences in training content and participant characteristics***

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28 The participants' characteristics in this study included differences in training location (19  
29 from high-income countries and 5 from low- to middle-income countries), differences in  
30 training content (18 from clinical and 5 from research), and differences in gender ratios (18  
31 males and 5 females). As described in the Methods section, the place and content of the  
32 training were not simply chosen by the students themselves but were also influenced by  
33 institutional partnerships; however, through the data analysis, it was possible to identify some  
34 differences.  
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47 First, when comparing training in high-income countries with training in low- to middle-  
48 income countries, the theme of "diversity of values" was found throughout the training in  
49 low- to middle-income countries.  
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56 *Through international electives, I was able to conduct training in two countries, Brazil and*  
57 *the United States. In Brazil, I experienced a very different culture, nationality, and practice*  
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3 *than in Japan. On the other hand, during my electives in the U.S., I experienced a variety of*  
4 *patients in the emergency department, but I didn't feel that much of a difference with Japan.*

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8 (R5 Men - US/Brazil - Clinical: Report)  
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12 It was also suggested that training in low- to middle-income countries may have made them  
13 realize to the presence of socially vulnerable people, made them more aware of their social  
14 responsibilities, and motivated them to work in the international health field in the future.  
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21 *I am mainly involved in the international medical support department at my current hospital,*  
22 *where I deal with a variety of foreign patients...I think about medical care and support based*  
23 *on the patient's background. In Japan, in particular, if a person comes from a developing*  
24 *country, even if they have a working background in Japan and we're in Japan, they still have*  
25 *a different cultural background, and it good to understand that this is still true while they are*  
26 *living here. (R23 Women - India - Clinical: Interview)*  
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38 Conversely, the majority of the research participants who experienced research-based  
39 electives tended to pursue their own interests and expertise and to continue their careers as  
40 researchers in the future.  
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47 *I was very curious about how mental illness can be studied. It was very interesting that a*  
48 *foreign researcher reported a decrease in the number of dendritic spines in the frontal lobe*  
49 *of schizophrenia, so I wanted to do an international research elective... After I returned to*  
50 *Japan, I joined the classroom of a teacher who is still researching in this field, and now I am*  
51 *also mentoring graduate students as a lecturer. (R16 Male - US - Research: Interview)*  
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3 Finally, as a result of the differences between male and female, the number of female  
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5 participants was not as high, but both themes, such as work–life balance and career support,  
6  
7 were unique themes that were drawn only from female participants.  
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## 10 11 12 **Discussions**

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15 Several constituent elements related to PIF were gained from the international elective  
16  
17 experiences. It was evident that the experiences promoted reflective self-relativization, which  
18  
19 contributed to the participants' identity formation as medical professionals. Studies have  
20  
21 shown the potential benefits of international electives for medical students in enhancing both  
22  
23 professional and personal development, and building transferable skills from working with  
24  
25 people from culturally, linguistically, and socioeconomically diverse backgrounds<sup>5</sup>. The  
26  
27 results of this study contribute to the extant research because of its findings on the long-term  
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29 influences on PIF from the perspective of international elective experiences. Previous studies  
30  
31 have found that international electives for medical students increased the probability of  
32  
33 students choosing primary care specialties or public health as their future career paths<sup>2,11</sup>.  
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35 This study uncovered that there were additional long-term career influences regardless of  
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37 whether the participants followed primary care specialties.  
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45 Cruess et al.<sup>16</sup> indicated that people who went through a socialization process with only  
46  
47 partially developed identities emerged with enhanced personal and professional identities.  
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49 PIF is a formative development continuum that instills professional values and a sense of  
50  
51 being a medical professional. In this study, several factors were found that related to the  
52  
53 contribution of international electives for medical students to medical professional  
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55 socialization. As the previous study<sup>15</sup> has shown, the study results indicated that the presence  
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57 of a mentor or role model was one of the most important factors as a long-term correlation  
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3 with what medical professionals considered to their own personal development and who they  
4 are 10 years later. The results also indicated that the reflective self-relativization gained from  
5 the international electives was the basis for the medical professionals' perspective  
6 transformations. A previous study found that PIF and socialization required a reflective  
7 process and that individual experiences allowed for the development of "their own stories by  
8 which to love doctors" through this self-reflection<sup>24</sup>. Therefore, it was concluded that the  
9 international elective experiences provided opportunities to medical professionals to not only  
10 advance their PIF processes but also reflect on their underlying identities. Furthermore,  
11 Cruess et al.<sup>16</sup> also pointed out that every person's journey from layperson to professional  
12 was unique and that each learning environment had its own characteristics and culture. In this  
13 study, the medical professionals who had undertaken international electives not only  
14 recognized the diversity of values through their cross-cultural experiences but also gained a  
15 greater understanding for patients with different backgrounds.

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36 The findings in this study had important parallels with earlier studies. Previous studies have  
37 found that medical professionals need to acquire cultural sensitivity as part of becoming and  
38 being a professional<sup>32</sup>. When the students become medical professionals and the medical  
39 professionals make transitions, being culturally competent means being able to incorporate  
40 those views into day-to-day practices<sup>33</sup>. As indicated in the results, the cultural sensitivity  
41 gained through international electives has led to a different insight into the members of their  
42 community. The international electives provided medical students with the opportunities to  
43 gain cross-cultural understanding on their PIF journey, which over the long-term contributed  
44 to their development of appropriate empathic responses. Gosselin et al.<sup>34</sup> proposed that  
45 medical education researchers should reconsider their assumptions and discourses about the  
46 dynamic relationships between culture, globalization, and medical education. Professional  
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3 identity is also a part of a wider social identity that varies depending on the country of origin  
4 and cultural background<sup>33</sup>. Monrouxe<sup>35</sup> showed that cultural differences could be explained  
5 by considering the wider culture inhabited by the medical professionals. Although the  
6 international electives for medical students generally run from only one to three months,  
7 based on the previous results, the international electives for medical students in Asian  
8 countries could have a substantial impact on the medical students' socialization. This is  
9 because medical students in Japan are in a learning environment with fewer immigrants than  
10 there are in learning environments in other developed countries. As they do not have much  
11 experience in deep communication with people from other countries, we thought that the  
12 various experiences they had during their international electives would be important  
13 opportunities for them to not only acquire career and medical knowledge and skills but also  
14 grow as human beings. That would be significant. As for the uniqueness of Japanese  
15 educational culture, it has also been indicated that there is an internalization of "hansei" or  
16 "kaizen," which is a characteristic of Asian culture<sup>36-37</sup>. We believe that when medical  
17 students transfer the concepts they have learned through their international electives to the  
18 process of socialization, a characteristic of reflection occurs at the individual level. The  
19 results indicate that a similar process of change in understanding in the medical  
20 professionals' community after their international electives is occurring in Japanese culture.  
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47 However, overall, individual PIF development through international electives for medical  
48 students in other cultures would need to be more comprehensively studied to assess the  
49 transferability of these results. A limitation of this study was that only Japanese medical  
50 professionals who had graduated from the University of Tokyo were included, which means  
51 that their PIF was affected by their innate cultural values and social norms. Because there are  
52 cultural differences between western models and other cultures that do not entirely focus on  
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3 the individual and possess a more collective culture<sup>33</sup>, there are wide differences as to the  
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5 appropriateness of some professional attributes<sup>35</sup>, which means that it is difficult to make  
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7 generalized statements without knowledge of the individual PIF development in other  
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9 cultures. However, based on the emergent themes in this study, it is possible that these types  
10  
11 of experiences in other cultures would yield similar findings such as perspective  
12  
13 transformations, self-development, and leadership. Another limitation of this study was that  
14  
15 the focus was on medical professionals who were already specialized (mean clinical  
16  
17 experience duration was 11.9 years). As identity formation continues throughout the medical  
18  
19 professional's career<sup>18</sup>, identities are never fixed<sup>38</sup>. Therefore, it is necessary to investigate  
20  
21 the socialization gained from international electives in a younger generation, such as  
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23 undergraduate students and residents. Finally, the problems that arise from the activities of  
24  
25 participants are not clarified in this study. Although we identified the contribution of the  
26  
27 international electives to the socialization process as an outcome, the experiences that the  
28  
29 participants gain from their work are complex. Therefore, further investigation of how the  
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31 medical professionals adopted their experiences in their environments would be required.  
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## 40 **Conclusion**

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44 This study clarified a number of issues regarding the long-term impact of international  
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46 elective experiences in various countries on the socialization of Japanese medical  
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48 professionals. It was found that these experiences promote reflective self-relativization and  
49  
50 contribute to PIF on the basis of the idea of cross-cultural understanding. The results of this  
51  
52 study contribute to the extant research because of their findings on the long-term influences  
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54 of PIF from the perspective of international elective experiences. It is hoped that this study  
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3 offers some guidance to mentors conducting international electives for medical students and  
4  
5 provides useful information for PIF development in medical professionals.  
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9

## 10 11 **Acknowledgments** 12

13  
14 The authors would like to thank all the participants who gave their time and participated in  
15  
16 this study.  
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19

## 20 21 **Contributors** 22

23  
24 MH was the principal investigator for this study, who conducted the interviews and authored  
25  
26 the paper. KN contributed to the design of this study. DS analyzed and coded all data along  
27  
28 with MH. ME checked the results, advised edits, and approved for public release. All authors  
29  
30 have agreed with the final version of this paper.  
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44  
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50 Non-financial associations that may be relevant to the submitted manuscript.  
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## 55 56 **Ethical approval** 57 58 59 60

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2  
3 This study was approved by the Institutional Review Board of the University of Tokyo (IRB  
4 ID 2018001NI-(1)).  
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11  
12  
13 Not commissioned; externally peer reviewed.  
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16

## 17 **Data sharing statement**

18  
19 No additional data are available.  
20  
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24

## 25 **References**

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**Table 1. Characteristics of the research participants**

| No | Sex | Specialty                | Host Country    | Type of Electives  |
|----|-----|--------------------------|-----------------|--------------------|
| 1  | M   | Internal Medicine        | US (NY), UK     | Clinical           |
| 2  | F   | Rheumatology             | US (WA)         | Clinical           |
| 3  | F   | Neurology                | US (OR)         | Clinical           |
| 4  | F   | Pediatrics               | US (PA)         | Research           |
| 5  | M   | Emergency                | US (OR), Brazil | Clinical           |
| 6  | M   | Endocrinology            | US (CA)         | Clinical           |
| 7  | M   | Intensive Care           | US (OH)         | Clinical           |
| 8  | M   | Gastrointestinal Surgery | US (OR)         | Clinical           |
| 9  | M   | Thoracic Surgery         | US (PA)         | Clinical           |
| 10 | M   | Endocrinology            | US (PA)         | Research           |
| 11 | M   | Hematology               | US (OR)         | Clinical           |
| 12 | M   | Emergency                | India, Nepal    | Clinical           |
| 13 | M   | Orthopedics              | US (MI)         | Clinical           |
| 14 | M   | Emergency                | US (PA)         | Research           |
| 15 | M   | Respiratory              | US (MA)         | Clinical           |
| 16 | M   | Neurology                | US (PA)         | Research           |
| 17 | M   | Radiology                | Thailand        | Clinical           |
| 18 | M   | Neurology                | US (MA, MN)     | Clinical, Research |
| 19 | M   | Health Policy            | US (NY, OR)     | Clinical           |
| 20 | M   | Cardiac surgery          | Australia       | Clinical           |
| 21 | M   | Ophthalmology            | US (CA)         | Clinical           |
| 22 | F   | Physiology               | US (PA)         | Clinical           |

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**Table 2. Interview guide**

1. What is your specialty, experience (number of years), and board certification?
2. Please describe the medical services you usually provide.
3. What have been your major medical experiences so far?
4. Describe your international elective experiences and provide details.
5. Why did you choose to study international electives for medical students?
6. What are your personal impressions of the international electives for medical students?
7. How did the impressive episode (answer 6) impact your own medical treatment (attitudes toward medical practice or work) and career development?
8. What impact did your international electives for medical students have on your professional development? Why do you think so?

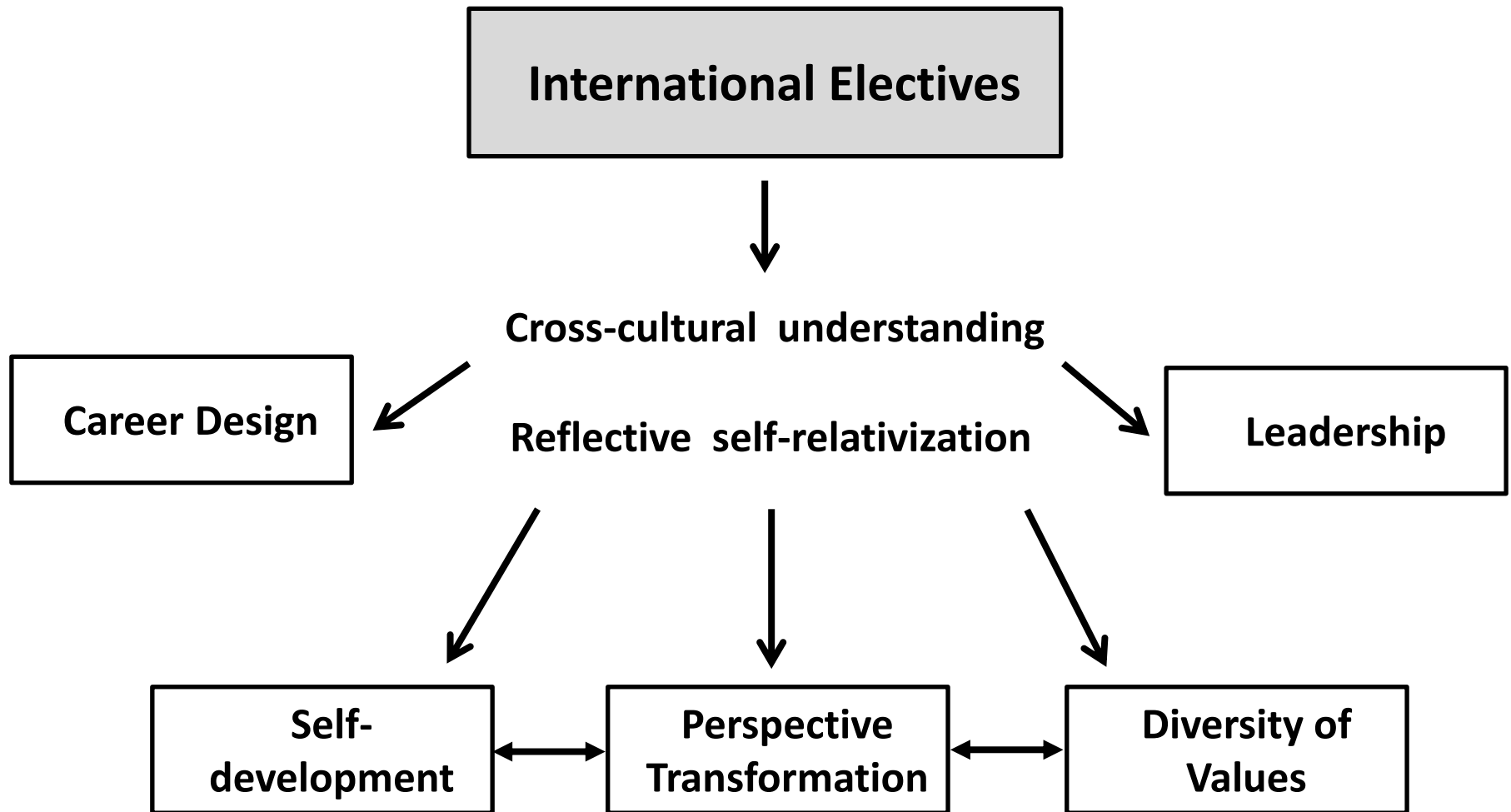
**Table 3. Emergent themes**

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|---|
| <p><b>Perspective Transformation (17/23)</b></p> <p>Self-relativization (14/23), Wide perspective (10/23), Contribution to Others (8/23), Empathy (5/23), Self-transformation (3/23)</p>                                      |
| <p><b>Career Design (16/23)</b></p> <p>Pursuit of interest (13/23), Right of choice (10/23), Role model (10/23), Mindset (7/23), Work-life balance (1/23), Career support (1/23), Insufficient information sharing (1/23)</p> |
| <p><b>Self-development (17/23)</b></p> <p>Cross-boundary experiences (9/23), Motivation (8/23), Self-reliance (7/23), Outcomes (5/23), Open mind (4/23), Resistance to egoism (1/23)</p>                                      |
| <p><b>Diversity of Values (14/23)</b></p> <p>Cross-cultural understanding (11/23), Culture shock (10/23), Work style (6/23), Acceptance of various values (3/23), Globalization (2/23), Flexibility (1/23)</p>                |
| <p><b>Leadership (14/23)</b></p> <p>Decision-making (9/23), Systems thinking (6/23), Objective thinking (4/23), Critical thinking (3/23), Resilience (3/23), Responsibility (2/23), Uncertainty (2/23)</p>                    |

## Figure legend

### Fig. 1 A schematic representation of the socialization process

International electives for medical students could promote reflective self-relativization and contribute to PIF on the basis of the idea of cross-cultural understanding. Five primary themes were gained from the international elective experiences. The themes of perspective transformation, self-development, and diversity of values showed a linkage between the themes.



**Figure 1. A schematic representation of the socialization process**

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## Standards for Reporting Qualitative Research (SRQR)\*

<http://www.equator-network.org/reporting-guidelines/srqr/>

Page/line no(s).

### Title and abstract

|  |   |
|--|---|
| <p><b>Title</b> - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended</p> | 1 |
| <p><b>Abstract</b> - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions</p>   | 2 |

### Introduction

|   |       |
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| <p><b>Problem formulation</b> - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement</p> | 4,5,6 |
| <p><b>Purpose or research question</b> - Purpose of the study and specific objectives or questions</p>  | 6,7   |

### Methods

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|---|--------|
| <p><b>Qualitative approach and research paradigm</b> - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**</p>  | 7      |
| <p><b>Researcher characteristics and reflexivity</b> - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability</p> | 7,9,10 |
| <p><b>Context</b> - Setting/site and salient contextual factors; rationale**</p>  | 8,9    |
| <p><b>Sampling strategy</b> - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**</p>  | 9,10   |
| <p><b>Ethical issues pertaining to human subjects</b> - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues</p>  | 10     |
| <p><b>Data collection methods</b> - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**</p>   | 9,10   |

|                       |   |           |
|-----------------------|---|-----------|
| 1<br>2<br>3<br>4<br>5 | <b>Data collection instruments and technologies</b> - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study | 10,11,32  |
| 6<br>7<br>8           | <b>Units of study</b> - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)  | 8,9,30,31 |
| 9<br>10<br>11<br>12   | <b>Data processing</b> - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts    | 10,11     |
| 13<br>14<br>15<br>16  | <b>Data analysis</b> - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**                                 | 10,11     |
| 17<br>18<br>19<br>20  | <b>Techniques to enhance trustworthiness</b> - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**  | 11        |

### Results/findings

|                      |   |                                     |
|----------------------|---|-------------------------------------|
| 23<br>24<br>25<br>26 | <b>Synthesis and interpretation</b> - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory | 11,12,13,14,15,16<br>17,18,19,20,33 |
| 27<br>28<br>29       | <b>Links to empirical data</b> - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings   | 11,12,13,14,15,16<br>17,18,19,20    |

### Discussion

|  |   |             |
|--|---|-------------|
| 32<br>33<br>34<br>35<br>36<br>37<br>38 | <b>Integration with prior work, implications, transferability, and contribution(s) to the field</b> - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field | 20,21,22,23 |
| 39                                     | <b>Limitations</b> - Trustworthiness and limitations of findings  | 22,23       |

### Other

|                |   |    |
|----------------|---|----|
| 42<br>43<br>44 | <b>Conflicts of interest</b> - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed | 24 |
| 45<br>46       | <b>Funding</b> - Sources of funding and other support; role of funders in data collection, interpretation, and reporting                      | 24 |

\*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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\*\*The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

**Reference:**

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014  
DOI: [10.1097/ACM.0000000000000388](https://doi.org/10.1097/ACM.0000000000000388)

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# BMJ Open

## Long-term contribution of international electives for medical students to professional identity formation: A qualitative study

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| <b>Primary Subject Heading</b>: | Medical education and training   |
| Secondary Subject Heading:      | Global health  |
| Keywords:                       | QUALITATIVE RESEARCH, MEDICAL EDUCATION & TRAINING, HEALTH SERVICES ADMINISTRATION & MANAGEMENT  |
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## Title

Long-term contribution of international electives for medical students to professional identity formation: A qualitative study

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## Abstract

**Objectives:** Globalization has given medical university students the opportunity to pursue international electives in other countries, enhancing the long-term socialization of medical professionals. This study identified the long-term effects of international electives on the professional identity formation of medical students.

**Design:** This is a qualitative study.

**Setting:** The authors interviewed Japanese medical professionals who had completed their international electives more than 10 years ago, and analyzed and interpreted the data using a social constructivism paradigm.

**Participants:** A total of 23 medical professionals (mean age 36.4 years; range 33–42 years) participated in face-to-face, semi-structured in-depth interviews.

**Results:** During the data analysis, 36 themes related to professional identity formation were identified, and the resulting themes had five primary factors (perspective transformation, career design, self-development, diversity of values, and leadership). It was concluded that international electives for medical students could promote reflective self-relativization and contribute to medical professional identity formation. Additionally, such electives can encourage pursuing a specialization and academic or non-academic work abroad. International electives for medical students could contribute to medical professional identity formation on the basis of cross-cultural understanding.

**Conclusions:** This study addressed a number of issues regarding the long-term impact of international elective experiences in various countries on the professional identity formation of Japanese medical professionals. This study offers some guidance to mentors conducting international electives and provides useful information for professional identity formation development in medical professionals.

## Strengths and limitations of this study

- This study identified the long-term effects of international electives on the professional identity formation of medical students.
- Qualitative data were collected from 23 medical professionals who completed their international electives more than 10 years ago and were analyzed using the thematic analysis method.
- The study was limited by the focus on only Japanese medical professionals whose professional identity formation was affected by their innate cultural values and social norms.
- Further investigation of how medical professionals adopt their experiences to their environments is required.

## Introduction

Globalization has given medical university students the opportunity to pursue international electives in other countries<sup>1-3</sup>, which can enhance the long-term socialization of medical professionals. Studies have found that international electives may have a transformative learning potential<sup>4,5</sup> as they immerse medical students in cross-cultural settings that can strengthen and challenge their professional identities<sup>6</sup>. However, these studies have not clarified the long-term contributions to medical professional socialization. Therefore, this study explored the long-term effects of international electives for medical students on medical professional socialization from a professional identity formation (PIF) perspective.

As international electives for medical students have been found to contribute to medical education internationalization by enhancing global health competencies and encouraging global citizenship<sup>7,8</sup>, they are an important part of undergraduate medical training to prepare students for the globalized world<sup>5</sup>. International electives for medical students enhance the knowledge of medical students about areas and issues outside the traditional medical school curricula, such as current research, global clinical practices, healthcare systems around the world, and cultural competencies, which often influence the students' career choices<sup>6,9,10</sup>. Previous studies have found that international electives for medical students increase the probability of students choosing primary care specialties (e.g., family medicine, internal medicine, and pediatrics) or public health as their career paths<sup>2,11</sup>. However, through international electives, it is important to understand how students learn regardless of whether they choose to follow primary care specialties<sup>12</sup>. International electives for medical students give medical students an opportunity to reflect on their experiences by highlighting their personal and professional identities and allowing them to closely examine the health outcomes in their own countries<sup>10,13</sup>. Several participants who have reflected on their

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3 undergraduate careers have stated that their elective experiences were transformative, served  
4 to refresh the values that were underpinning their initial motivations to enter the profession<sup>5</sup>  
5 and led to valuable insights into the potential congruence of their personal and professional  
6 identities<sup>14</sup>. As mentioned in the PIF framework by Cruess et al<sup>15,16</sup>, socialization is useful  
7 when seeking to understand the transformative learning of international electives for medical  
8 students as medical students are often in a formative state and thus more susceptible to the  
9 influences of their cultural backgrounds and learning environments<sup>17</sup>. Socialization and  
10 identity formation have been found to be strongly connected<sup>18</sup>. Using narrative reflective  
11 reports, Sawatsky et al.<sup>4</sup> identified some transformative learning components—disorienting  
12 experiences, emotional responses, critical reflection, perspective changes, and a commitment  
13 to future action—and clarified how these were related to professional identity transformations  
14 for residents participating in international electives. However, Sawatsky et al.'s<sup>4</sup> study did not  
15 explain these relationships in undergraduate settings or clarify the long-term contributions to  
16 medical professional socialization. As educational activities that foster a deep PIF-associated  
17 transformation, such as international electives, should be long-term and cumulative in  
18 nature<sup>19</sup>, this study focused on these aspects.

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42 In western education environments, international electives for medical students are often  
43 conducted in and focused on low- and middle-income countries. However, in Asian  
44 countries, including Japan, these electives are generally conducted and focused on developed  
45 countries. A National Survey in Japan found that a majority of Japanese exchange students  
46 traveled to both western and Asian countries, with approximately 70% choosing to study in  
47 Europe and North America, reflecting the desire of Japanese students to acquire medical  
48 knowledge or experiences through the English language<sup>3,20</sup>. However, 40% of the United  
49 Kingdom's medical students chose developing countries and approximately one-third of  
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3 medical students in the United States, Canada, and Germany selected low- and middle-  
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5 income countries to complete their international electives before graduation<sup>21,22</sup>.  
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### 10 ***Professional Identity and Socialization***

11  
12 Becoming a physician is challenging and transformative<sup>23</sup>; therefore, medical education  
13  
14 needs to be responsive to the changes in students' professional identities from their  
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16 experiences and from society<sup>24</sup>. Cruess et al.<sup>17</sup> defined professional identity as “a  
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18 representation of self, achieved in stages over time during which the characteristics, values,  
19  
20 and norms of the medical profession are internalized, resulting in an individual thinking,  
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22 acting, and feeling like a physician,” and Holden et al.<sup>19</sup> recommended professional identity  
23  
24 development to be integrated with core medical knowledge, skills, and attitudes. Hence,  
25  
26 professional identity is developed through socialization from a layperson to a professional,  
27  
28 and it is unique to each learning environment<sup>15</sup>. International electives for medical students  
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30 provide them with unique learning experiences that have transformative components assisting  
31  
32 in professional and personal socialization. Jarvis-Selinger, Pratt, and Regehr<sup>18</sup> defined PIF as  
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34 “an adaptive developmental process that happens simultaneously (1) at the level of the  
35  
36 individual, which involves the psychological development of the person and (2) at the  
37  
38 collective level.” Studies have found that role models, mentors, and experiential learning, in  
39  
40 both clinical and nonclinical situations, were the most powerful PIF factors<sup>15</sup>. Therefore,  
41  
42 international electives are expected to be part of a medical student's long-term, cumulative  
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44 education that enacts the deep transformations associated with PIF<sup>19</sup>. Frost and Regehr<sup>23</sup>  
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46 suggested that the implications arising from the different professional identities of medical  
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48 students needed to be explored.  
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### 58 ***Research Question***

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3 Using a qualitative method, this study examined the contribution of international electives for  
4 medical students conducted in various countries, mainly high-income countries, to the PIF of  
5 Japanese medical professionals, with the primary objective being to assess the relationship  
6 between the electives and PIF to clarify their long-term effects. Therefore, the research  
7 question driving this qualitative research was “How do international electives for medical  
8 students contribute to the PIF of Japanese medical professionals?” It is expected that the  
9 study findings could guide mentors when conducting international electives for medical  
10 students and provide useful information to foster PIF development in medical professionals.  
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## 24 **Method**

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26 We followed the Standards for Reporting Qualitative Research recommendations<sup>25</sup>. This  
27 study was based on the constructivist paradigm stating that human knowledge is not  
28 discovered but socially constructed<sup>26</sup>. The qualitative data were collected from 23 face-to-  
29 face, semi-structured in-depth interviews and 16 narrative reflective reports on international  
30 electives for medical students written by the study participants to clarify the relationships  
31 between these experiences and PIF pedagogy. All of the interview data and reflective reports  
32 were inductively analyzed and integrated through the data analysis. Thematic analysis was  
33 employed to elicit the subjective meanings, which involved generative coding and theoretical  
34 interpretations by several researchers. The authors were familiar with international electives  
35 because we have participated in post-international electives presentations by medical students  
36 and continue to engage with medical students participating in international electives through  
37 teaching practices and mentoring.  
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## 57 **Setting**



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3 The National Survey of Japan reported that 790 medical students in 2012 and 1069 medical  
4 students in 2013 were involved in clinical clerkships or short-term study abroad programs<sup>3</sup>,  
5 which was approximately 2% of all Japanese medical students. The University of Tokyo's  
6 international electives for medical students have been formal electives since 2001 and are  
7 taken by approximately 3% of the university's medical students each year, which is  
8 considered higher than average in Japan. Similar to the national statistics results, a majority  
9 of the university's exchange students choose to travel to western countries, with  
10 approximately 60% choosing to study in Europe and North America, every year. Although  
11 more than half of the students opt to complete their electives in the settings available to them  
12 through formal programs offered by the institutions, some students choose to complete their  
13 electives in their own choices. As the international elective content is different at various  
14 overseas host institutions, they are decided through direct communication between the  
15 organization and the undergraduate student. Regarding financial support, only some students  
16 with excellent grades were offered scholarships.

### 37 ***Participants***

38 To understand the long-term effects of such electives, the participants in this study were  
39 University of Tokyo's medical professionals who had been graduated for more than 10 years  
40 prior to this study, after completing their international electives. Of the viable participants, all  
41 are licensed and experienced medical professionals at a variety of institutions, including  
42 university and community hospitals, research centers, medical companies, and the Ministry of  
43 Health. From 2001 to 2009, 133 University of Tokyo undergraduate students completed  
44 international electives, and 70 contactable medical professionals who had completed their  
45 international electives were invited via email to participate in the study. Overall, 23  
46 participants (mean age 36.4 years; range 33–42 years) agreed, all of whom had taken the  
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3 international electives program more than 10 years ago. Of the 23 participant profiles given  
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5 in Table 1, a majority chose to go to the U.S., with only a few choosing other countries.  
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### 10 ***Patient and Public Involvement***

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12 No patients involved.  
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### 16 ***Data Collection***

17  
18 The authors analyzed narrative reflective reports on the international electives for medical  
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20 students that had been written by the study participants more than 10 years ago. Narrative  
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22 reflective reports on the international electives for medical students were instructed for each  
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24 student to submit immediately after completing the international electives. In this report, the  
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26 students were asked to describe what kind of training they had received in their field as well  
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28 as what their feelings and struggles through their actual experience and how they interacted  
29  
30 with the local medical students. Moreover, the reports were shared with not only the faculty  
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32 but also other medical students so that they could view it with each other. These reports on  
33  
34 international electives for medical students were originally written to take undergraduate  
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36 students beyond global health facts, as a self-reflective learning process emphasizing  
37  
38 transnational competence and heightening their empathy for humanity underlying global  
39  
40 health issues<sup>27</sup>. Therefore, they were considered useful in assessing the existing and potential  
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42 PIF pedagogy<sup>28</sup> and helpful in understanding the long-term contributions of the international  
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44 electives for medical students on the socialization of the study participants. However, not all  
45  
46 of the reports that were reflective of the medical students' narrative of the international  
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48 electives for them as written by the study participants existed, and only 16 reports reflective  
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50 of the narrative were viewable. The reason why some reflections were excluded in this data  
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52 collection is simply because those reports did not exist. Open-ended data were also collected,  
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3 using an audio recorder, from face-to-face, semi-structured in-depth interviews, wherein the  
4 participants' feelings and beliefs were explored<sup>29</sup>. Interviews were conducted by the first  
5 author (MH), which lasted 40–80 minutes, at the participant's place of clinical practice  
6  
7 between December 2018 and March 2019. All of the interviews were conducted in Japanese.  
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9 Total recorded data comprised 1077 minutes of recording. An interview guide (see Table 2)  
10  
11 was used to clarify how the participants viewed their experiences and how those experiences  
12  
13 had contributed to their PIF. The authors agreed that the interview guide was suited to the  
14  
15 research purpose; therefore, it was not changed. However, the interviews were flexible so that  
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17 the participants could take the discussion in any direction. The recorded data were transcribed  
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19 verbatim by the authors immediately after each interview.  
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### 28 *Ethics*

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30 The Institutional Review Board of the University of Tokyo approved this study (2018001NI-  
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32 (1)). Ethical concerns included maintaining confidentiality of the sensitive information  
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34 revealed in the interviews and reflective reports. The participants were informed of the  
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36 study's scope and nature, and all of them provided written consent. They were also informed  
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38 that all data were confidential and that the given consent could be withdrawn at any time.  
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### 44 *Data Analysis*

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46 All of the interview data and reflective reports were analyzed and integrated through the data  
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48 analysis. The data were analyzed using the thematic analysis method, which involved  
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50 generative coding and theorizing to identify instances in the data set that were similar in  
51  
52 concept<sup>30-31</sup>. Data analysis followed an inductive approach where the data are allowed to  
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54 speak for themselves by the emergence of conceptual categories and descriptive themes.  
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58 Although the research question was partly theory-driven, the researchers initially conducted a  
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3 primary level thematic analysis to determine themes. After the researchers found the themes  
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5 and following further team discussion, we re-examined the literature to identify the  
6  
7 conceptual perspective. The first and second authors (MH and SD, respectively) were  
8  
9 formally trained in using NVivo11 for Windows (QSR International, Australia, a computer  
10  
11 software program to support the analysis of qualitative data) and conducted all the analysis  
12  
13 steps, including the reading and rereading of the narratives until the researchers found the  
14  
15 themes and categorizing the data from a constructivist perspective. The themes were  
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17 categorized into main and subcategories and were then tabulated using Nvivo11 to identify  
18  
19 the theme frequencies in the interviews and reports. After the data collection and analyses,  
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21 the study authors agreed that theoretical saturation had been reached as there were no new  
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23 themes emerging in the data set, and a complete understanding of the identified concepts had  
24  
25 been achieved. Member-checking was conducted twice by the research participants after the  
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27 interviews and analyses to confirm that there is no difference in interpretation and that it is  
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29 not contrary to the intended content.  
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## 38 **Results**

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40 From the thematic analysis of the interviews and reports, 36 emergent themes were identified,  
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42 several of which were related to PIF. The resulting themes had five primary factors:  
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44 perspective transformation, career design, self-development, diversity of values, and  
45  
46 leadership (see Table 3). International electives for medical students often lead to  
47  
48 specializations and further academic or non-academic work abroad. Although the contents of  
49  
50 international electives for medical students were different between developing countries and  
51  
52 developed countries, they were common in that international electives for medical students  
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54 could promote reflective self-relativization and contribute to PIF on the basis of the idea of  
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56 cross-cultural understanding (Figure 1). It also became clear that the themes of perspective  
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3 transformation, self-development, and diversity of values showed a linkage between the  
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5 themes.  
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### 10 ***Perspective Transformation***

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12 Although it was difficult for most participants to specifically describe the international  
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14 electives' contents, most commented on the thinking that they had acquired, with the  
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16 impressions gained being the origins for their own perspective transformations as medical  
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18 professionals.  
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24 *Before international electives, I had the perception that surgeons were superior than*  
25  
26 *internists. However, when I met an internist during my international electives in the U.S. who*  
27  
28 *systematically assessed the whole body while carefully questioning and examining the body,*  
29  
30 *my perception that surgeons were superior to them changed markedly. (R7 Male - US -*  
31  
32 *Clinical: Report)*  
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38 In the past, there were many participants who chose a specialty that was different from what  
39  
40 they had hoped for at the time of international electives for medical students. However, they  
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42 went through a process of reflecting on their experience of international electives when  
43  
44 pursuing their own interests. Most participants also believed that the international electives  
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46 promoted self-relativization and assisted in their identity development as medical  
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48 professionals.  
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54 *It was very striking to me that about half of the patients who see the ER are uninsured. On the*  
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56 *other hand, I was able to see how doctors over-test and treat to avoid lawsuits... It was a*  
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3 *good experience to realize the position of the Japanese healthcare system by experiencing a*  
4 *different healthcare environment than Japan. (R19 Male - US - Clinical: Report)*  
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10 *After graduating, I became interested in health care policy, and now I am running a company*  
11 *with a vision to create a world where all people can live and die with conviction...I think this*  
12 *is a good opportunity to reevaluate myself. When training at university hospitals and*  
13 *affiliated hospitals, because these organizations are all very similar, there are few*  
14 *differences, so we don't think about what might be good or bad, or what might be incorrect. I*  
15 *think that this could be an extremely useful opportunity for reevaluation. (R19 Male - US -*  
16 *Clinical: Interview)*  
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### 28 **Career Design**

29  
30 Most participants had continued their careers in Japan but believed that their experiences  
31 abroad had some impact on their mindset and work–life balance.  
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37 *What I saw during my short one-month stay was a very small part of the United States, but I*  
38 *felt that even if I had preconceived notions, I needed to rethink those preconceived notions*  
39 *based on what I had actually experienced. (R3 Female - US - Clinical: Report)*  
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47 *I'm going to the US next year as a postdoctoral researcher...When I think about what it was*  
48 *like when I had the opportunity to go to America as a medical trainee, this may seem a little*  
49 *vague, but this is the image I was able to give—with my experience at that time, it's not that*  
50 *the knowledge I learned there was of direct use, but having gone to America as a medical*  
51 *student was extremely useful to me in terms of planning my own life. (R3 Female - US -*  
52 *Clinical: Interview)*  
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5 The role models the participants encountered during their international electives for medical  
6 students assisted them in developing their careers and pursuing their own interests regardless  
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8 of whether they chose to follow primary care specialties or opted to work in their countries of  
9  
10 origin or abroad.  
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17 *I am interested in dementia, and during the international electives, I worked with researchers*  
18 *in the field to experiment at a specialized research facility in the United States. I was struck*  
19 *by the fact that the specialty is extremely fragmented, and even in the same area, there is*  
20 *little involvement in diseases outside of their own specialty. (R18 Male - US - Clinical /*  
21 *Research: Report)*  
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31 *After completing international electives, I wanted to pursue more specialized research in*  
32 *dementia and kept in touch with the mentors who had taught me specialized skills during my*  
33 *practice. I am currently conducting research in this field in the U.S., and the professors are*  
34 *still my direct mentors... Through my research, new therapeutics have been developed and*  
35 *are beginning to be used in clinical practice, so I think I can give back my knowledge in this*  
36 *field by adapting such a process when I return to Japan. (R18 Male - US - Clinical/Research:*  
37 *Interview)*  
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### 49 ***Self-development***

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51 The participants said that their experiences of having to adjust to their host country and their  
52 elective content by themselves and traveling to their international electives had contributed to  
53 their motivation and future independence and had affected their educational behavior in  
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55 clinical situations.  
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6 *Since the hospital had no partnership with the university, I had to do all the preparations*  
7 *myself, and the preparations were more difficult than I expected. It was also my first time to*  
8 *go to a developing country, so I was very busy just before my trip, buying insurance and*  
9 *getting vaccinations... When I returned home, I realized the importance of water and*  
10 *electricity, and how safe Japan is. (R12 Male - Nepal - Clinical: Report)*  
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19 *Through the experience of international electives, I learned the importance of trying anything*  
20 *without fear of failure. Although I am now working in a different department than the one I*  
21 *trained in at the time, I am actively working with patients from a variety of social and*  
22 *economic backgrounds in a multidisciplinary approach. (R12 Male - Nepal - Clinical:*  
23 *Interview)*  
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33 Throughout their international elective experiences, the medical professionals could not only  
34 relativize the environment wherein they had been placed but were also forced to think more  
35 deeply about their own strengths. Therefore, the international electives for medical students  
36 enhanced the participants' future self-development.  
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45 *I was interested in treating congenital diseases, so I went to a lab that was doing gene*  
46 *therapy for hemophilia and had already gone through several trials. I was attracted to the*  
47 *work of the doctors who successfully combined both clinical and research, including unique*  
48 *consultation methods, genetic testing and post-diagnosis follow-up, and feedback to research.*  
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53 (R4 Female - US - Study: Report)  
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3 *In my current workplace, I am a researcher conducting epidemiological studies on child*  
4 *development. When I grow up, I lived in the United States due to my parents' work...For me*  
5 *in particular, I was raised over there, so I came back to Japan thinking that I could have*  
6 *become like them if I had stayed there. Well, I had an image of who I desired to be when I*  
7 *was there and the real figure of who I am today having come back to Japan...There was a*  
8 *real sense that clinical training in U.S. was superior, which I wanted to fight against,*  
9 *thinking that we had to somehow do our best in Japan as well. (R4 Female - US - Research:*  
10 *Interview)*  
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### ***Diversity of Values***

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26 Participants recognized not only the diversity of values they gained from their cross-cultural  
27 experiences but were also able to use these experiences when treating patients from other  
28 countries. Further, regardless of their specialties, they sought to imagine the patient's  
29 background and religious views when conducting their clinical practice.  
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38 *All in all, I would say that going to Brazil had a significant effect on me, but I cannot go so*  
39 *far as say that I would force this on Japanese people, or that I would impose my value*  
40 *system, which shifted slightly as a result of my time in Brazil, on Japan....I think I have*  
41 *become better able to respond to patients that have various views and values about life and*  
42 *death. (R5 Male - US/Brazil - Clinical: Interview)*  
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51 Through international electives, the participants believed that their experience assisted in  
52 their identity development as medical professionals and that it contributed to their interpretive  
53 and tolerant attitude toward patients and colleagues.  
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3 *What doctors take for granted and what nurses take for granted are not the same thing. I*  
4 *think there's a parallel between what the Japanese take for granted and what Americans take*  
5 *for granted. It's probably the same process of meeting with people who have different ways of*  
6 *thinking so that they can rub together and understand each other's thoughts. (R6 Male - US -*  
7 *Clinical: Interview)*

### 17 **Leadership**

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19 The international elective experiences urged the participants to be more conscious about goal-  
20 setting and policy decision-making in organizations and gave them a better understanding of  
21 their own work environments and of how the working environment knowledge strengthened  
22 their awareness of target-setting and development.

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30 *I decided on the content of my international electives through negotiations with the host*  
31 *laboratory, but I felt that the content could be changed as much as I wanted, depending on*  
32 *my sense of purpose. On the other hand, the United States has a system in place that allows*  
33 *researchers to devote themselves to their research, but I found it difficult to bring that to*  
34 *Japan. (R14 Male - US - Research: Report)*

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44 *I am managing several projects while developing a new medical system that I have been*  
45 *interested in since my electives...I am currently involved in building a rapid response system*  
46 *for the hospital's needs in case of a patient's sudden change...Of course, each person's efforts*  
47 *are important, but I work based on the idea that a system that can provide high quality*  
48 *medical care at all times is important. (R14 Male - US - Research: Interview)*

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3 After international elective experiences, participants continued to self-evaluate their own  
4 leadership concept and considered the medical approach for the delegation of authority  
5 according to their own situation.  
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12 *I learned the importance of management through my electives in the United States... I am*  
13 *now working in policy-related work at the Ministry of Health, Labour and Welfare after*  
14 *leaving my clinical work... I am involved in health policy practice while working with*  
15 *medical institutions, and I feel that my experience in overseas training is helping me to focus*  
16 *on the decision-making process.* (R7 Male - US - Clinical: Interview)  
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### 26 ***Differences in training content and participant characteristics***

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28 The participants' characteristics in this study included differences in training location (19  
29 from high-income countries and 5 from low- to middle-income countries), differences in  
30 training content (18 from clinical and 5 from research), and differences in gender ratios (18  
31 males and 5 females). As described in the Methods section, the place and content of the  
32 training were not simply chosen by the students themselves but were also influenced by  
33 institutional partnerships; however, through the data analysis, it was possible to identify some  
34 differences.  
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47 First, when comparing training in high-income countries with training in low- to middle-  
48 income countries, the theme of "diversity of values" was found throughout the training in  
49 low- to middle-income countries.  
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56 *Through international electives, I was able to conduct training in two countries, Brazil and*  
57 *the United States. In Brazil, I experienced a very different culture, nationality, and practice*  
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3 *than in Japan. On the other hand, during my electives in the U.S., I experienced a variety of*  
4 *patients in the emergency department, but I didn't feel that much of a difference with Japan.*

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8 (R5 Men - US/Brazil - Clinical: Report)  
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12 It was also suggested that training in low- to middle-income countries may have made them  
13 aware of the presence of socially vulnerable people and their own social responsibilities, and  
14 motivated them to work in the international health field in the future.  
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21 *I am mainly involved in the international medical support department at my current hospital,*  
22 *where I deal with a variety of foreign patients...I think about medical care and support based*  
23 *on the patient's background. In Japan, in particular, if a person comes from a developing*  
24 *country, even if they have a working background in Japan and we're in Japan, they still have*  
25 *a different cultural background, and it good to understand that this is still true while they are*  
26 *living here. (R23 Women - India - Clinical: Interview)*  
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38 However, the majority of the research participants who experienced research-based electives  
39 tended to pursue their own interests and expertise and to continue their careers as researchers  
40 in the future.  
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47 *I was very curious about how mental illness can be studied. It was very interesting that a*  
48 *foreign researcher reported a decrease in the number of dendritic spines in the frontal lobe*  
49 *of schizophrenia, so I wanted to do an international research elective... After I returned to*  
50 *Japan, I joined the classroom of a teacher who is still researching in this field, and now I am*  
51 *also mentoring graduate students as a lecturer. (R16 Male - US - Research: Interview)*  
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3 Finally, the number of female participants was not as high, but both themes, work–life  
4 balance and career support, were unique themes drawn only from female participants.  
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## 10 **Discussions**

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13 Several constituent elements related to PIF were gained from the international elective  
14 experiences. It was evident that the experiences promoted reflective self-relativization, which  
15 contributed to the participants' identity formation as medical professionals. Studies have  
16 shown the potential benefits of international electives for medical students in enhancing both  
17 professional and personal development, and building transferable skills from working with  
18 people from culturally, linguistically, and socioeconomically diverse backgrounds<sup>5</sup>. The  
19 results of this study contribute to the extant research because of its findings on the long-term  
20 influences on PIF from the perspective of international elective experiences. Previous studies  
21 have found that international electives for medical students increased the probability of  
22 students choosing primary care specialties or public health as their future career paths<sup>2,11</sup>.  
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24 This study uncovered that there were additional long-term career influences regardless of  
25 whether the participants followed primary care specialties.  
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43 Cruess et al.<sup>16</sup> indicated that people who went through a socialization process with only  
44 partially developed identities emerged with enhanced personal and professional identities.  
45 PIF is a formative development continuum that instills professional values and a sense of  
46 being a medical professional. In this study, several factors were found that related to the  
47 contribution of international electives for medical students to medical professional  
48 socialization. As the previous study<sup>15</sup> has shown, the study results indicated that the presence  
49 of a mentor or role model was one of the most important factors as a long-term correlation  
50 with what medical professionals considered to their own personal development and who they  
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3 are 10 years later. The results also indicated that the reflective self-relativization gained from  
4 the international electives was the basis for the medical professionals' perspective  
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6 the international electives was the basis for the medical professionals' perspective  
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8 transformations. A previous study found that PIF and socialization required a reflective  
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10 process and that individual experiences allowed for the development of "their own stories by  
11  
12 which to love doctors" through this self-reflection<sup>24</sup>. Therefore, it was concluded that the  
13  
14 international elective experiences provided opportunities to medical professionals to not only  
15  
16 advance their PIF processes but also reflect on their underlying identities. Furthermore,  
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18 Cruess et al.<sup>16</sup> also pointed out that every person's journey from layperson to professional  
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20 was unique and that each learning environment had its own characteristics and culture. In this  
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22 study, the medical professionals who had undertaken international electives not only  
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24 recognized the diversity of values through their cross-cultural experiences but also gained a  
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26 greater understanding for patients with different backgrounds.  
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33 The findings in this study had important parallels with earlier studies. Previous studies have  
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35 found that medical professionals need to acquire cultural sensitivity as part of becoming and  
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37 being a professional<sup>32</sup>. When the students become medical professionals and the medical  
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39 professionals make transitions, being culturally competent means being able to incorporate  
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41 those views into day-to-day practices<sup>33</sup>. As indicated in the results, the cultural sensitivity  
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43 gained through international electives has led to a different insight into the members of their  
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45 community. The international electives provided medical students with the opportunities to  
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47 gain cross-cultural understanding on their PIF journey, which over the long-term contributed  
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49 to their development of appropriate empathic responses. Gosselin et al.<sup>34</sup> proposed that  
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51 medical education researchers should reconsider their assumptions and discourses about the  
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53 dynamic relationships between culture, globalization, and medical education. Professional  
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55 identity is also a part of a wider social identity that varies depending on the country of origin  
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3 and cultural background<sup>33</sup>. Monrouxe<sup>35</sup> showed that cultural differences could be explained  
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5 by considering the wider culture inhabited by the medical professionals. Although the  
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7 international electives for medical students generally run from only one to three months,  
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9 based on the previous results, the international electives for medical students in Asian  
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11 countries could have a substantial impact on the medical students' socialization. This is  
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13 because medical students in Japan are in a learning environment with fewer immigrants than  
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15 there are in learning environments in other developed countries. As they do not have much  
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17 experience in deep communication with people from other countries, we thought that the  
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19 various experiences they had during their international electives would be important  
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21 opportunities for them to not only acquire career and medical knowledge and skills but also  
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23 grow as human beings. That would be significant. As for the uniqueness of Japanese  
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25 educational culture, it has also been indicated that there is an internalization of "hansei" or  
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27 "kaizen," which is a characteristic of Asian culture<sup>36-37</sup>. We believe that when medical  
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29 students transfer the concepts they have learned through their international electives to the  
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31 process of socialization, a characteristic of reflection occurs at the individual level. The  
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33 results indicate that a similar process of change in understanding in the medical  
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35 professionals' community after their international electives is occurring in Japanese culture.  
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45 However, overall, individual PIF development through international electives for medical  
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47 students in other cultures would need to be more comprehensively studied to assess the  
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49 transferability of these results. A limitation of this study was that only Japanese medical  
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51 professionals who had graduated from the University of Tokyo were included, which means  
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53 that their PIF was affected by their innate cultural values and social norms. Because there are  
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55 cultural differences between western models and other cultures that do not entirely focus on  
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57 the individual and possess a more collective culture<sup>33</sup>, there are wide differences as to the  
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3 appropriateness of some professional attributes<sup>35</sup>, which means that it is difficult to make  
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5 generalized statements without knowledge of the individual PIF development in other  
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7 cultures. However, based on the emergent themes in this study, it is possible that these types  
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9 of experiences in other cultures would yield similar findings such as perspective  
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11 transformations, self-development, and leadership. Another limitation of this study was that  
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13 the focus was on medical professionals who were already specialized (mean clinical  
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15 experience duration was 11.9 years). As identity formation continues throughout the medical  
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17 professional's career<sup>18</sup>, identities are never fixed<sup>38</sup>. Therefore, it is necessary to investigate  
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19 the socialization gained from international electives in a younger generation, such as  
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21 undergraduate students and residents. Finally, the problems that arise from the activities of  
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23 participants are not clarified in this study. Although we identified the contribution of the  
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25 international electives to the socialization process as an outcome, the experiences that the  
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27 participants gain from their work are complex. Therefore, further investigation of how the  
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29 medical professionals adopted their experiences in their environments would be required.  
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## 38 **Conclusion**

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41 This study clarified a number of issues regarding the long-term impact of international  
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43 elective experiences in various countries on the socialization of Japanese medical  
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45 professionals. It was found that these experiences promote reflective self-relativization and  
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47 contribute to PIF on the basis of the idea of cross-cultural understanding. The results of this  
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49 study contribute to the extant research because of their findings on the long-term influences  
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51 of PIF from the perspective of international elective experiences. It is hoped that this study  
52  
53 offers some guidance to mentors conducting international electives for medical students and  
54  
55 provides useful information for PIF development in medical professionals.  
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MH was the principal investigator for this study, who conducted the interviews and authored the paper. KN contributed to the design of this study. DS analyzed and coded all data along with MH. ME checked the results, advised edits, and approved for public release. All authors have agreed with the final version of this paper.

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## Competing Interests

Non-financial associations that may be relevant to the submitted manuscript.

## Ethical approval

This study was approved by the Institutional Review Board of the University of Tokyo (IRB ID 2018001NI-(1)).

## Provenance and peer review

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3 Not commissioned; externally peer reviewed.  
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## 8 **Data sharing statement**

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10 No additional data are available.  
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**Table 1. Characteristics of the research participants**

| No | Sex | Specialty                | Host Country    | Type of Electives  |
|----|-----|--------------------------|-----------------|--------------------|
| 1  | M   | Internal Medicine        | US (NY), UK     | Clinical           |
| 2  | F   | Rheumatology             | US (WA)         | Clinical           |
| 3  | F   | Neurology                | US (OR)         | Clinical           |
| 4  | F   | Pediatrics               | US (PA)         | Research           |
| 5  | M   | Emergency                | US (OR), Brazil | Clinical           |
| 6  | M   | Endocrinology            | US (CA)         | Clinical           |
| 7  | M   | Intensive Care           | US (OH)         | Clinical           |
| 8  | M   | Gastrointestinal Surgery | US (OR)         | Clinical           |
| 9  | M   | Thoracic Surgery         | US (PA)         | Clinical           |
| 10 | M   | Endocrinology            | US (PA)         | Research           |
| 11 | M   | Hematology               | US (OR)         | Clinical           |
| 12 | M   | Emergency                | India, Nepal    | Clinical           |
| 13 | M   | Orthopedics              | US (MI)         | Clinical           |
| 14 | M   | Emergency                | US (PA)         | Research           |
| 15 | M   | Respiratory              | US (MA)         | Clinical           |
| 16 | M   | Neurology                | US (PA)         | Research           |
| 17 | M   | Radiology                | Thailand        | Clinical           |
| 18 | M   | Neurology                | US (MA, MN)     | Clinical, Research |
| 19 | M   | Health Policy            | US (NY, OR)     | Clinical           |
| 20 | M   | Cardiac surgery          | Australia       | Clinical           |
| 21 | M   | Ophthalmology            | US (CA)         | Clinical           |
| 22 | F   | Physiology               | US (PA)         | Clinical           |

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**Table 2. Interview guide**

1. What is your specialty, experience (number of years), and board certification?
2. Please describe the medical services you usually provide.
3. What have been your major medical experiences so far?
4. Describe your international elective experiences and provide details.
5. Why did you choose to study international electives for medical students?
6. What are your personal impressions of the international electives for medical students?
7. How did the impressive episode (answer 6) impact your own medical treatment (attitudes toward medical practice or work) and career development?
8. What impact did your international electives for medical students have on your professional development? Why do you think so?

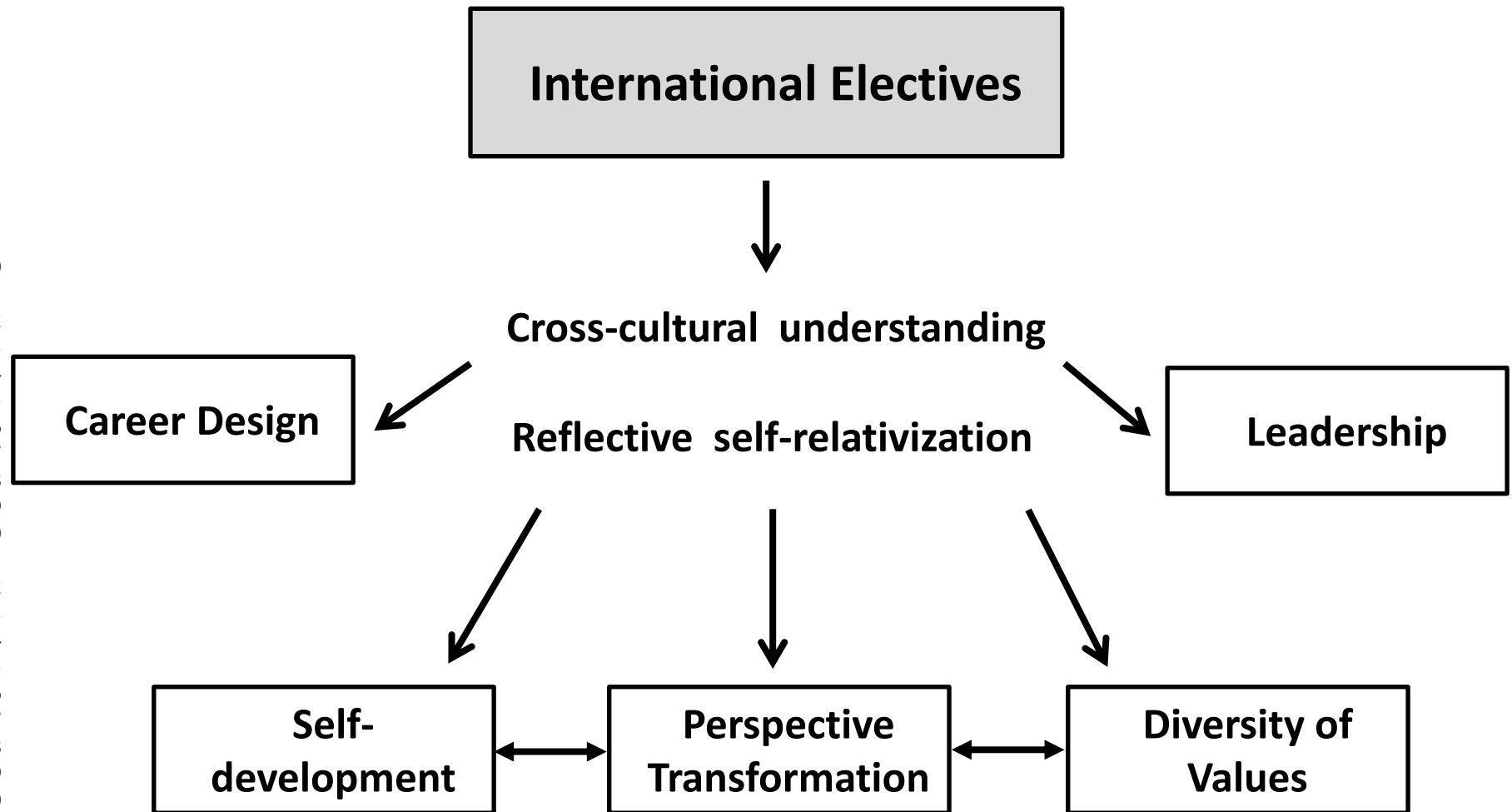
**Table 3. Emergent themes**

|   |
|---|
| <p><b>Perspective Transformation (17/23)</b></p> <p>Self-relativization (14/23), Wide perspective (10/23), Contribution to Others (8/23), Empathy (5/23), Self-transformation (3/23)</p>                                      |
| <p><b>Career Design (16/23)</b></p> <p>Pursuit of interest (13/23), Right of choice (10/23), Role model (10/23), Mindset (7/23), Work-life balance (1/23), Career support (1/23), Insufficient information sharing (1/23)</p> |
| <p><b>Self-development (17/23)</b></p> <p>Cross-boundary experiences (9/23), Motivation (8/23), Self-reliance (7/23), Outcomes (5/23), Open mind (4/23), Resistance to egoism (1/23)</p>                                      |
| <p><b>Diversity of Values (14/23)</b></p> <p>Cross-cultural understanding (11/23), Culture shock (10/23), Work style (6/23), Acceptance of various values (3/23), Globalization (2/23), Flexibility (1/23)</p>                |
| <p><b>Leadership (14/23)</b></p> <p>Decision-making (9/23), Systems thinking (6/23), Objective thinking (4/23), Critical thinking (3/23), Resilience (3/23), Responsibility (2/23), Uncertainty (2/23)</p>                    |

## Figure legend

### Fig. 1 A schematic representation of the socialization process

International electives for medical students could promote reflective self-relativization and contribute to PIF on the basis of the idea of cross-cultural understanding. Five primary themes were gained from the international elective experiences. The themes of perspective transformation, self-development, and diversity of values showed a linkage between the themes.



**Figure 1. A schematic representation of the socialization process**

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## Standards for Reporting Qualitative Research (SRQR)\*

<http://www.equator-network.org/reporting-guidelines/srqr/>

Page/line no(s).

### Title and abstract

|  |   |
|--|---|
| <p><b>Title</b> - Concise description of the nature and topic of the study Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended</p> | 1 |
| <p><b>Abstract</b> - Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions</p>   | 2 |

### Introduction

|   |       |
|---|-------|
| <p><b>Problem formulation</b> - Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement</p> | 4,5,6 |
| <p><b>Purpose or research question</b> - Purpose of the study and specific objectives or questions</p>  | 6,7   |

### Methods

|   |        |
|---|--------|
| <p><b>Qualitative approach and research paradigm</b> - Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/ interpretivist) is also recommended; rationale**</p>  | 7      |
| <p><b>Researcher characteristics and reflexivity</b> - Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability</p> | 7,9,10 |
| <p><b>Context</b> - Setting/site and salient contextual factors; rationale**</p>  | 8,9    |
| <p><b>Sampling strategy</b> - How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation); rationale**</p>  | 9,10   |
| <p><b>Ethical issues pertaining to human subjects</b> - Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues</p>  | 10     |
| <p><b>Data collection methods</b> - Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources/methods, and modification of procedures in response to evolving study findings; rationale**</p>   | 9,10   |

|                       |   |           |
|-----------------------|---|-----------|
| 1<br>2<br>3<br>4<br>5 | <b>Data collection instruments and technologies</b> - Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study | 10,11,32  |
| 6<br>7<br>8           | <b>Units of study</b> - Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)  | 8,9,30,31 |
| 9<br>10<br>11<br>12   | <b>Data processing</b> - Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymization/de-identification of excerpts    | 10,11     |
| 13<br>14<br>15<br>16  | <b>Data analysis</b> - Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale**                                 | 10,11     |
| 17<br>18<br>19<br>20  | <b>Techniques to enhance trustworthiness</b> - Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation); rationale**  | 11        |

### Results/findings

|                      |   |                                     |
|----------------------|---|-------------------------------------|
| 23<br>24<br>25<br>26 | <b>Synthesis and interpretation</b> - Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory | 11,12,13,14,15,16<br>17,18,19,20,33 |
| 27<br>28<br>29       | <b>Links to empirical data</b> - Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings   | 11,12,13,14,15,16<br>17,18,19,20    |

### Discussion

|                                  |   |             |
|----------------------------------|---|-------------|
| 32<br>33<br>34<br>35<br>36<br>37 | <b>Integration with prior work, implications, transferability, and contribution(s) to the field</b> - Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalizability; identification of unique contribution(s) to scholarship in a discipline or field | 20,21,22,23 |
| 38<br>39                         | <b>Limitations</b> - Trustworthiness and limitations of findings  | 22,23       |

### Other

|                |   |    |
|----------------|---|----|
| 42<br>43<br>44 | <b>Conflicts of interest</b> - Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed | 24 |
| 45<br>46       | <b>Funding</b> - Sources of funding and other support; role of funders in data collection, interpretation, and reporting                      | 24 |

\*The authors created the SRQR by searching the literature to identify guidelines, reporting standards, and critical appraisal criteria for qualitative research; reviewing the reference lists of retrieved sources; and contacting experts to gain feedback. The SRQR aims to improve the transparency of all aspects of qualitative research by providing clear standards for reporting qualitative research.

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\*\*The rationale should briefly discuss the justification for choosing that theory, approach, method, or technique rather than other options available, the assumptions and limitations implicit in those choices, and how those choices influence study conclusions and transferability. As appropriate, the rationale for several items might be discussed together.

**Reference:**

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. **Standards for reporting qualitative research: a synthesis of recommendations.** *Academic Medicine*, Vol. 89, No. 9 / Sept 2014  
DOI: [10.1097/ACM.0000000000000388](https://doi.org/10.1097/ACM.0000000000000388)

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