



Report of the Technology Cooperation Survey on Pursuit of Well-Being in an Aging Society

December 5th, 2025
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Structure of the survey

- Part 1: Survey on Cooperation Indicator
- Part 2: Fact-finding Survey
 - Section I : Policy Priorities
 - Section II : Medical and Care Innovations
 - Section III : Elderly Social Engagement
 - Section IV: Ethical, Legal, and Social Issues
- Part 3: Personal Information

Part 1; Survey on Cooperation Indicator

1. Do you think technological cooperation is necessary among China, Japan, and Korea?

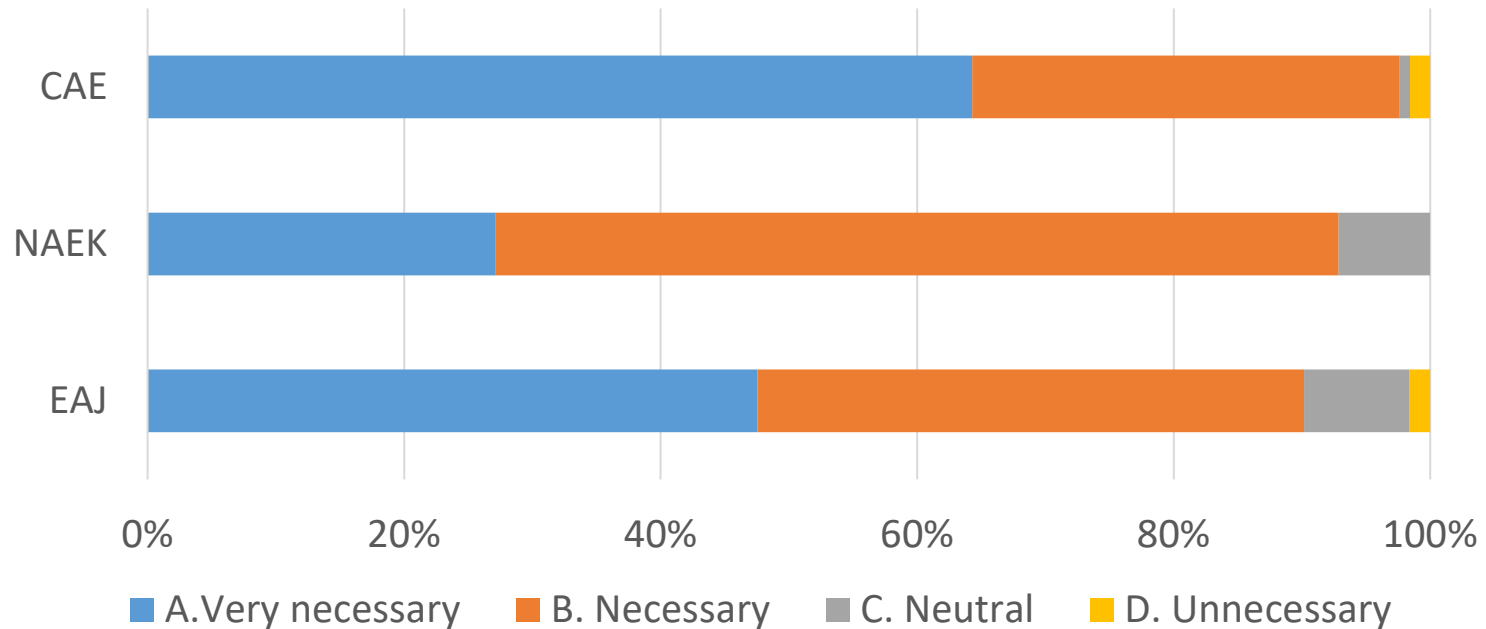


Fig.1: Recognition of the necessity of cooperation

Part 1; Survey on Cooperation Indicator

2. Do you think technological cooperation among China, Japan, and Korea would be mutually beneficial?

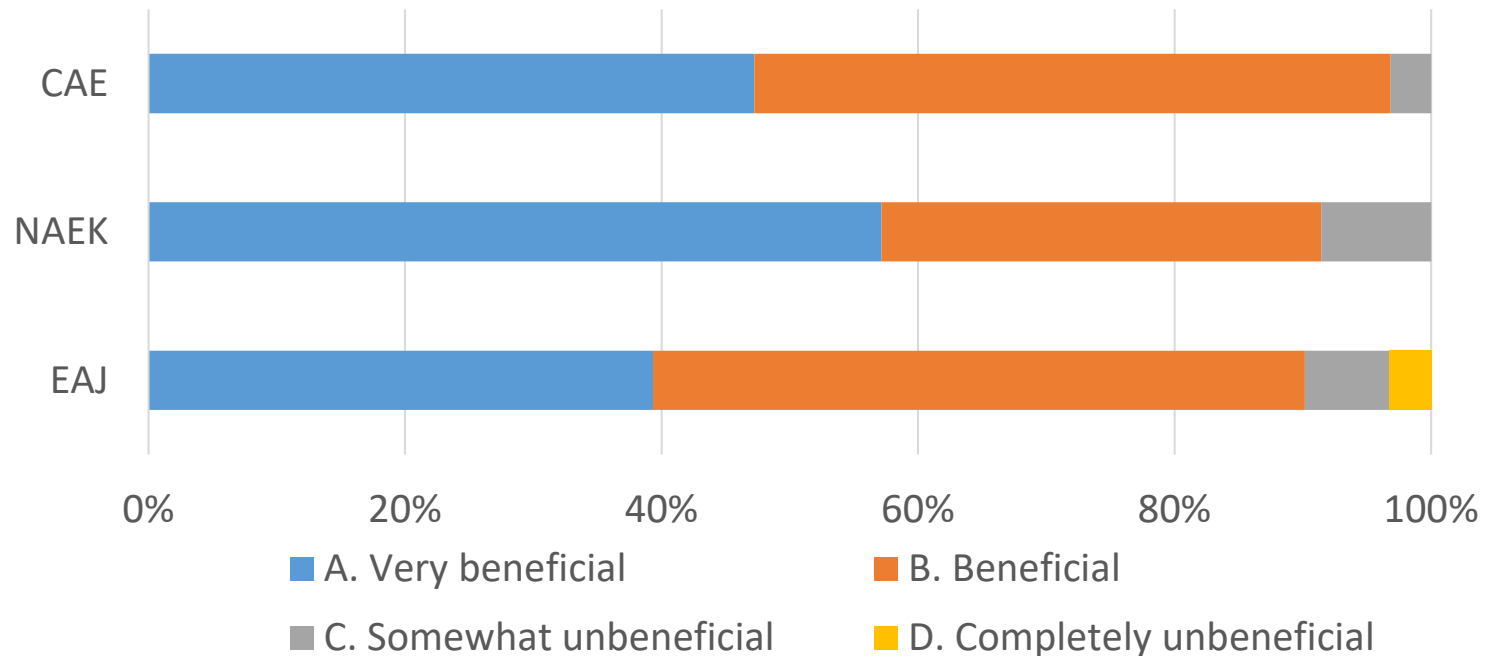


Fig.2: Recognition of the benefit of cooperation

Part 1; Survey on Cooperation Indicator

3. In terms of quantity, how would you evaluate the level of technological cooperation among China, Japan, and Korea?

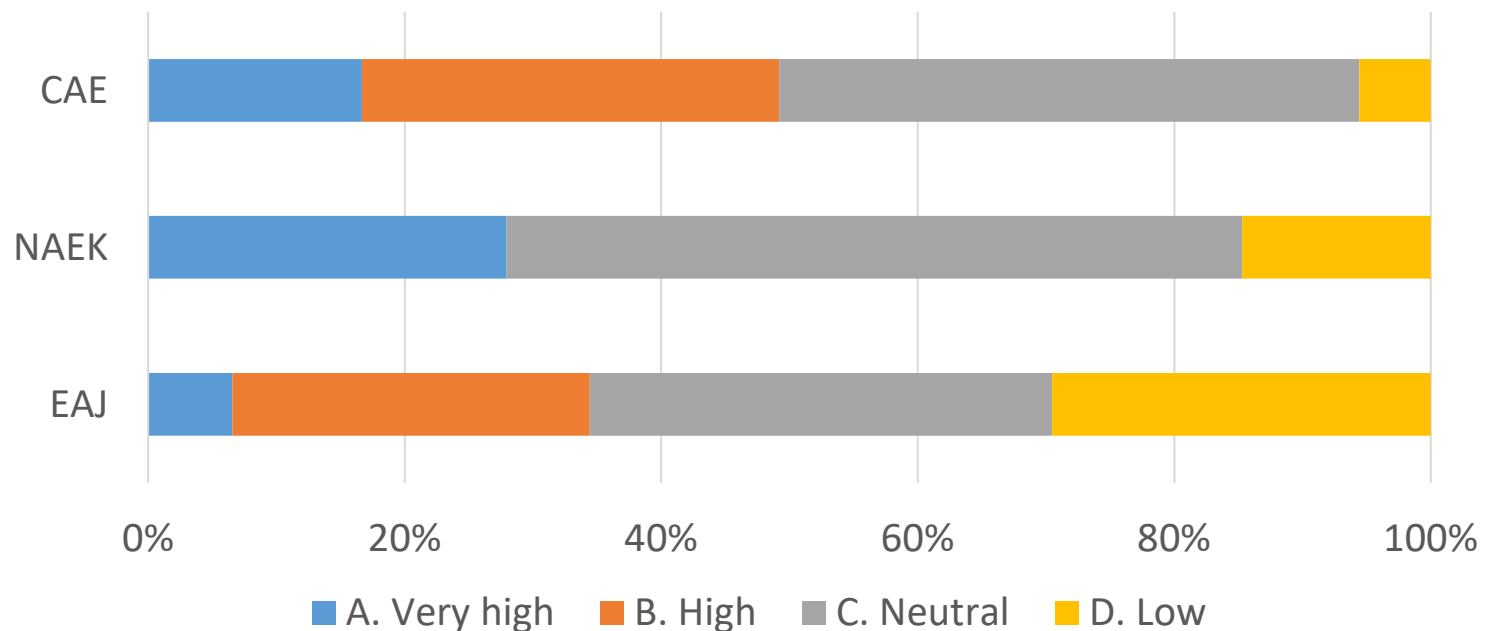


Fig.3: Recognition of the quantity of cooperation

Part 1; Survey on Cooperation Indicator

4. In terms of quality, how would you evaluate the level of technological cooperation among China, Japan, and Korea?

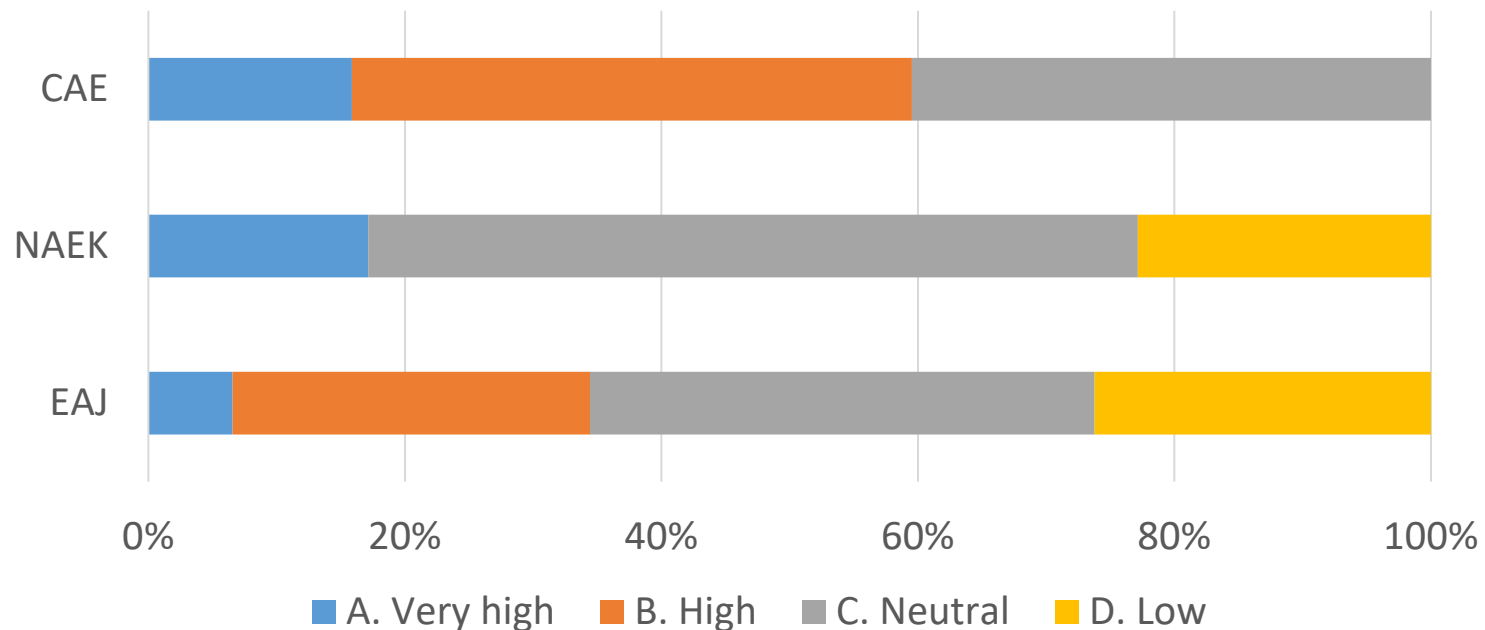


Fig.4: Recognition of the quality of cooperation

Part 1; Survey on Cooperation Indicator

5. What is your opinion on the future prospects for technological cooperation among China, Japan, and Korea?

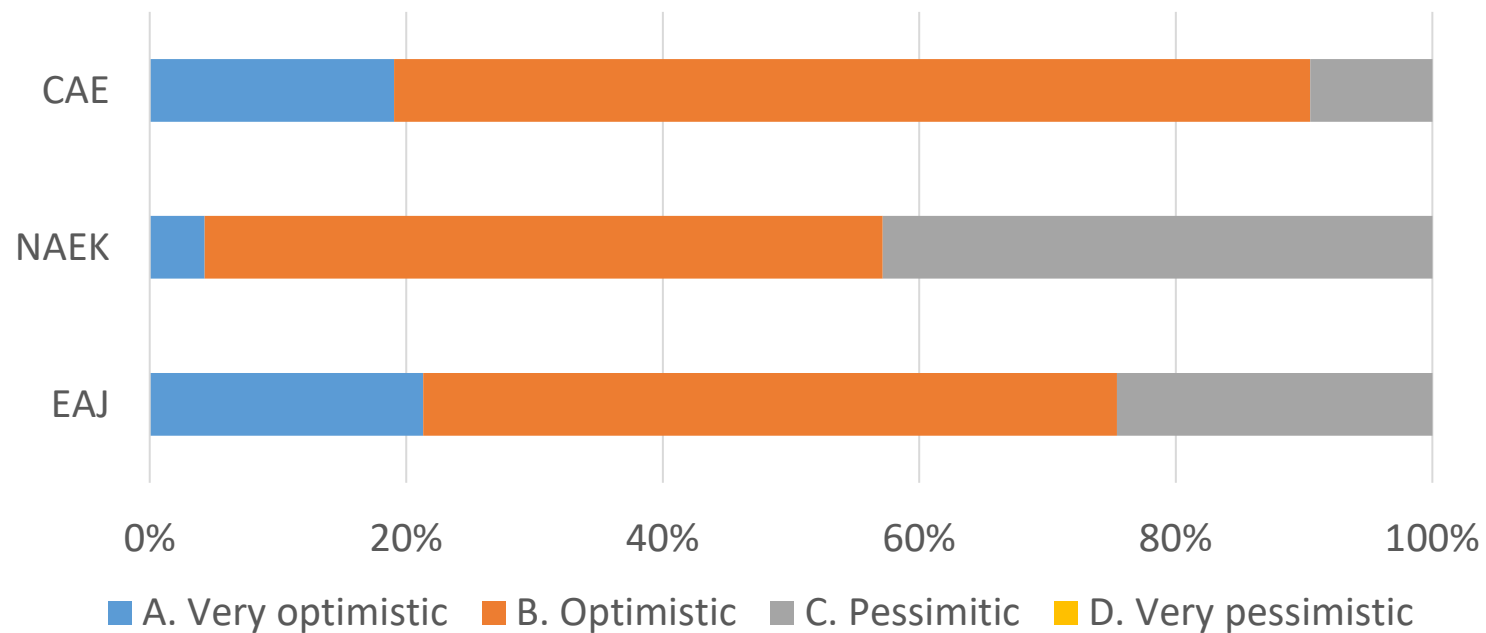


Fig.5: Future prospects on the cooperation

Summary of part 1

- Cooperation of 3 east Asian countries is considered to be necessary and beneficial, from all 3 academies.
- On the other hand, practical technological cooperation is considered to be insufficient, in terms of both quantity and quality.
- CAE members think the quality of technological cooperation is somewhat high compared to other 2 academies. It means that some CAE members think although the quantity is insufficient, on going cooperations have sufficient qualities.
- All the three academies think future of technological cooperation is somewhat optimistic. However, not small number of members think somewhat pessimistic.

Part 2; Fact-finding Survey

Section I : Policy Priorities

1. Which field should your country prioritize most in pursuing well-being in an aging society?

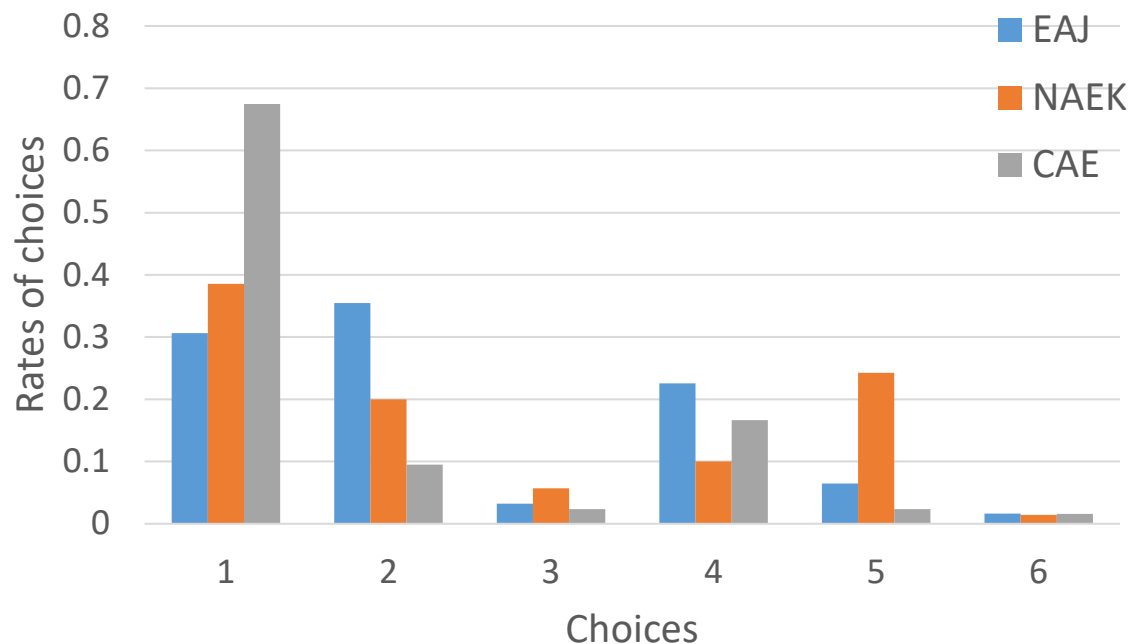


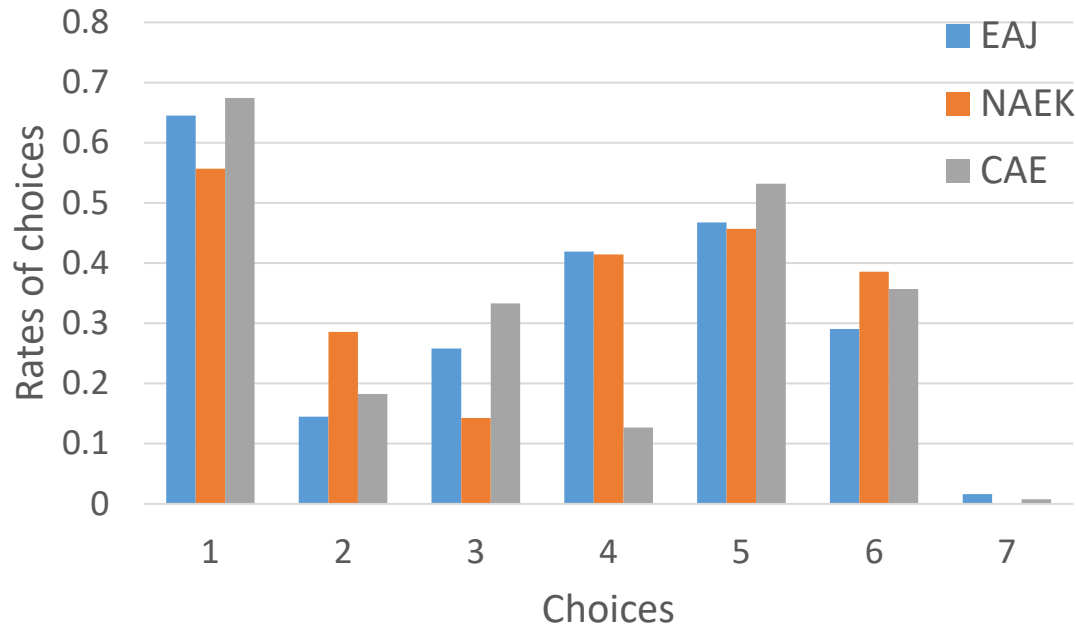
Fig.6: Primary focus area of each country

- 1: Human-centered medical and nursing care
- 2: Social participation promotion for the elderly
- 3: Ethical and legal frameworks for healthcare technology
- 4: Insurance and welfare system redesign
- 5: Employment and income improvement for the elderly
- 6: Other

Part 2; Fact-finding Survey

Section II : Medical and Care Innovation

2. Which areas should your country prioritize for human-centered medical and nursing care innovation?

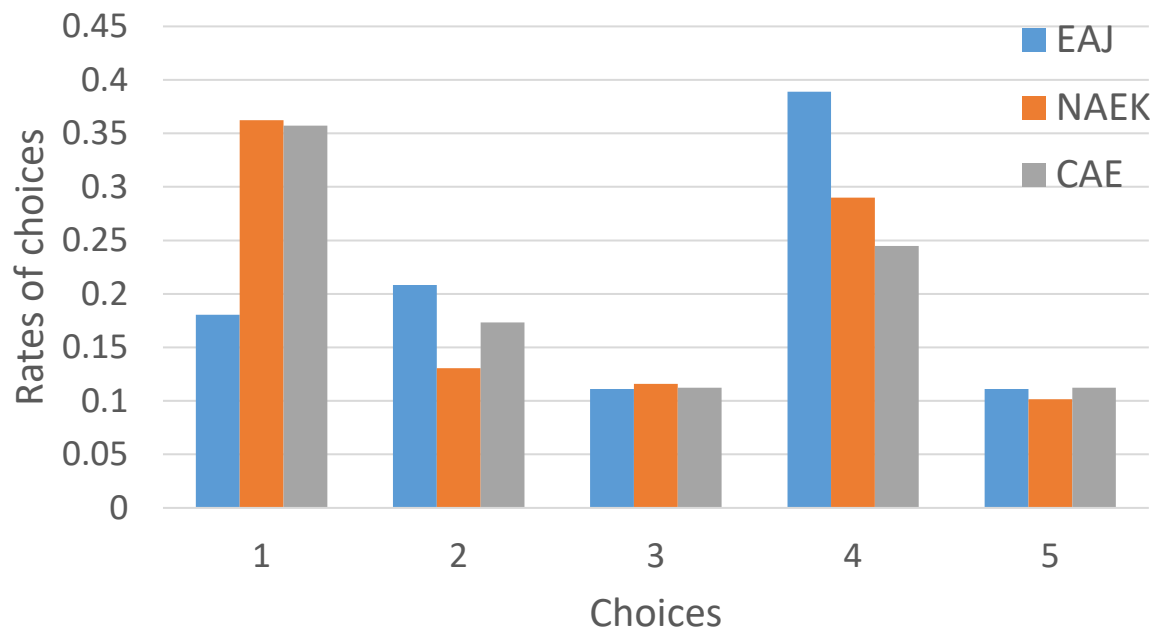


- 1: Utilization of digital technologies in diagnosis, treatment, and care
- 2: Evolving roles of healthcare professionals
- 3: Managing increased cancer and lifestyle diseases
- 4: Addressing healthcare workforce shortages
- 5: Developing comprehensive community care systems
- 6: Ensuring elderly dignity and rights in care
- 7: Other

Fig.7: Major topic in Human-centered medical and nursing care

Part 2; Fact-finding Survey

2-1. What are the critical challenges for implementing digital health solutions



- 1: Systems and regulatory development
2. Reducing implementation costs
3. Bridging digital literacy gaps
4. Enhancing system reliability and security
5. Maintaining human connection in care
6. Other

Fig.8: Critical challenges for implementing digital health solutions

Part 2; Fact-finding Survey

2-2. What are the important aspects of changing professional roles?

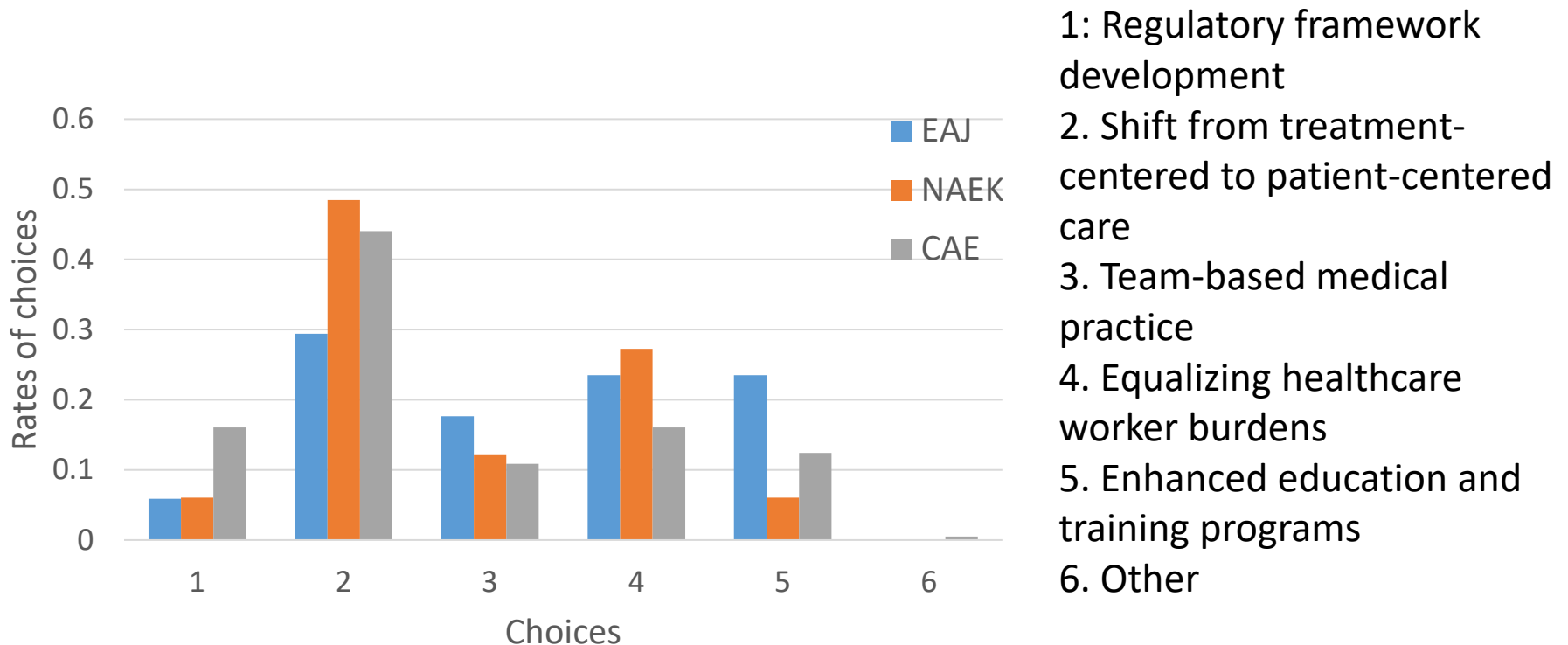


Fig.9: important aspects of changing professional roles

Part 2; Fact-finding Survey

2-3. What are the important approaches to cancer and lifestyle diseases?

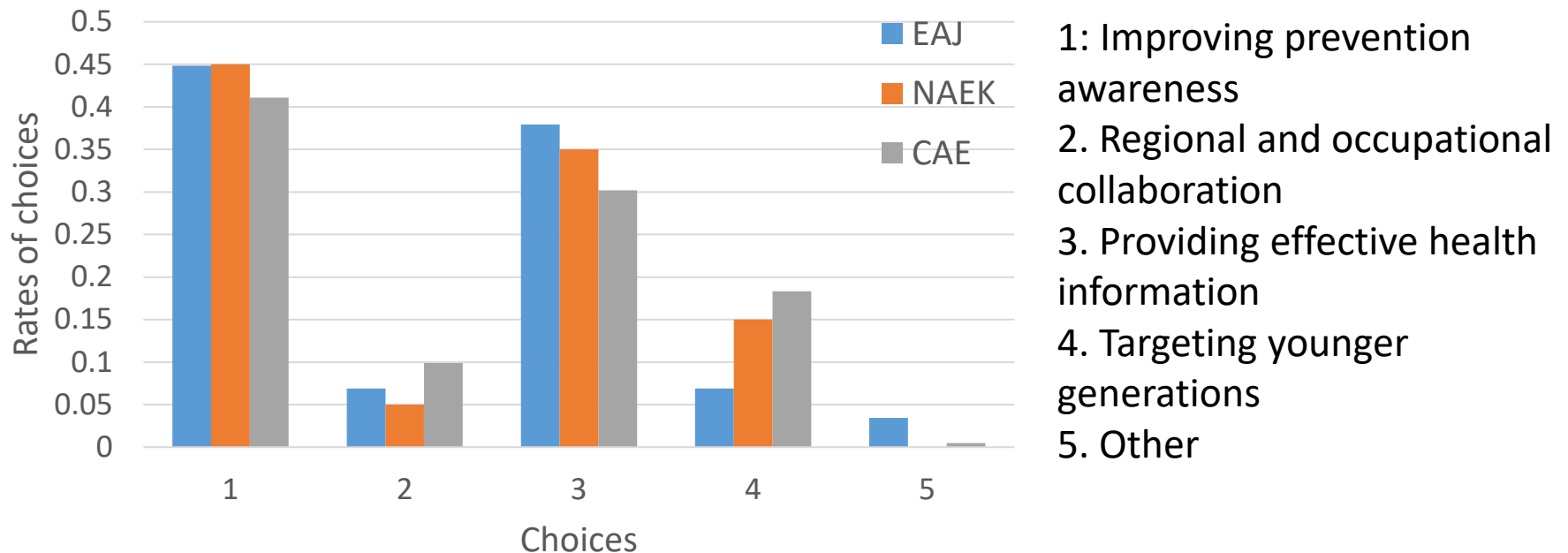
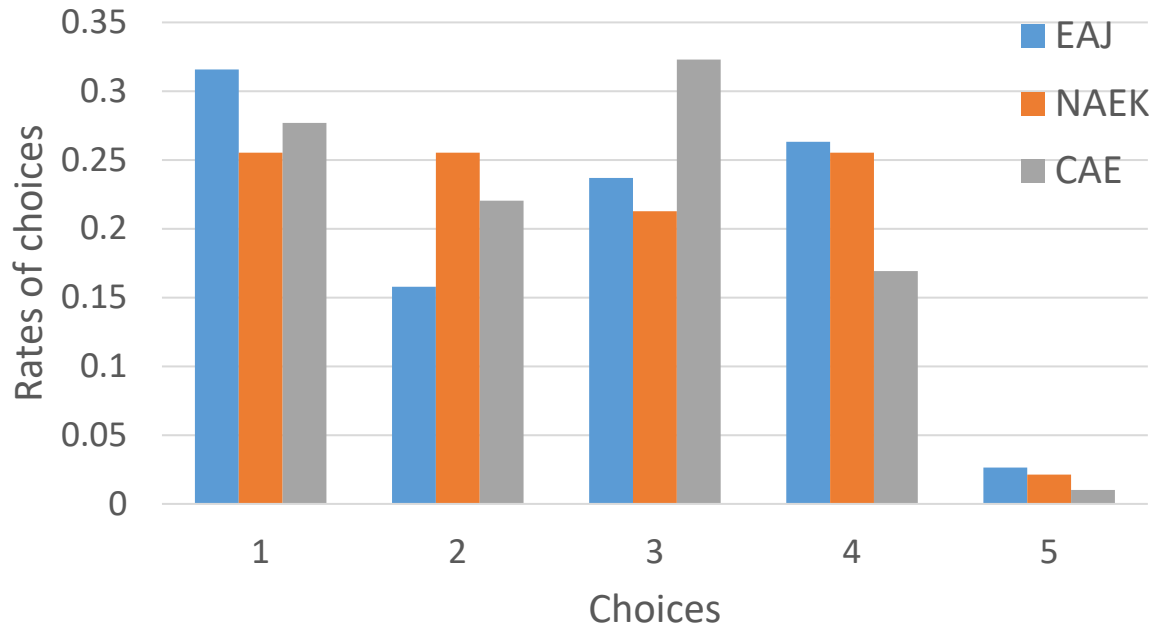


Fig.10: Important approaches to cancer and lifestyle diseases

Part 2; Fact-finding Survey

2-4. What are the effective strategies for addressing healthcare workforce shortages?



- 1: Promoting preventive medicine to reduce demand
2. Addressing regional healthcare disparities
3. Implementing comprehensive community care
4. Leveraging ICT for efficiency
5. Other

Fig.11: Effective strategies for addressing healthcare workforce shortages

Part 2; Fact-finding Survey

2-5. What are the important element for community care implementation?

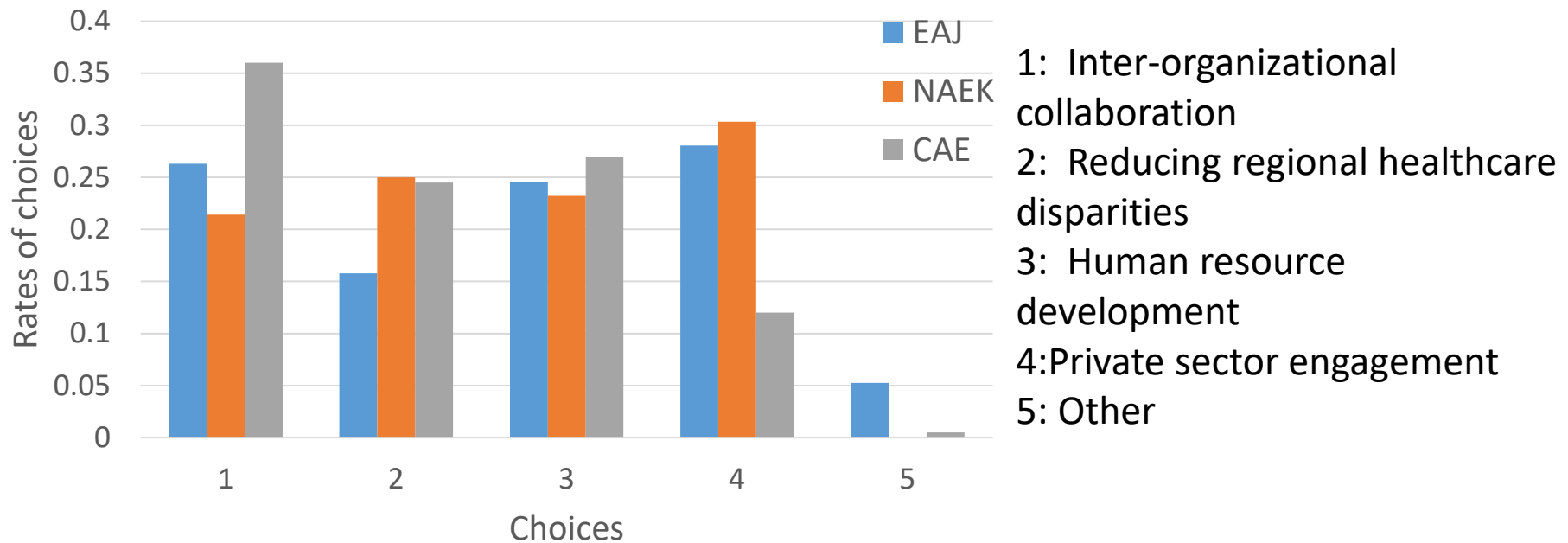
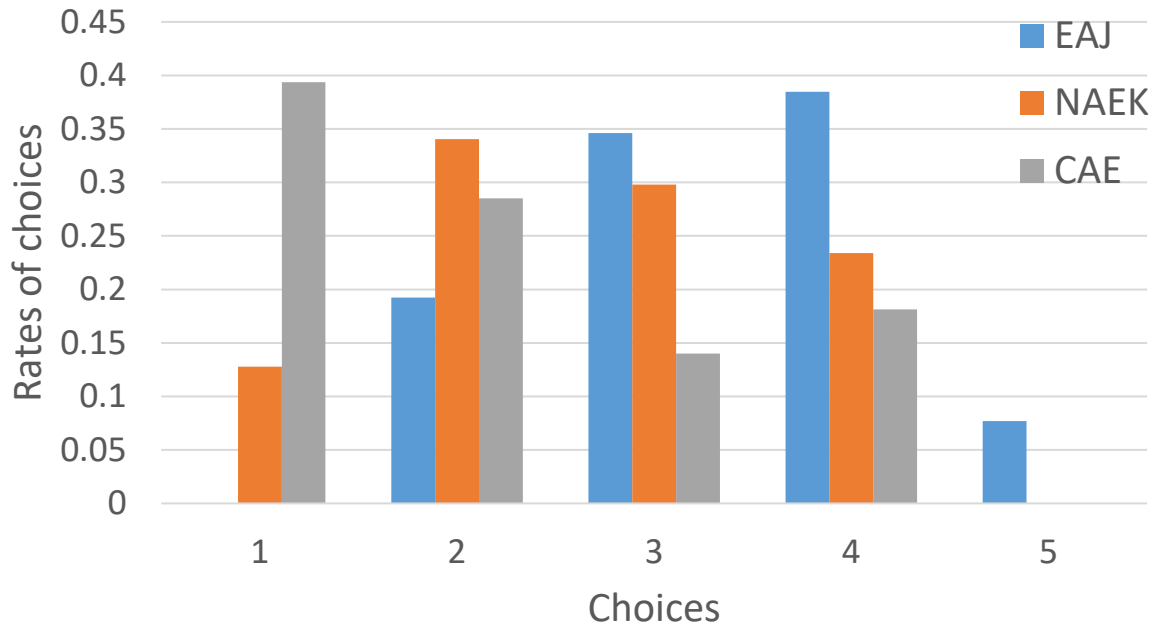


Fig.12: important element for community care implementation

Part 2; Fact-finding Survey

2-6. What are the critical aspects of dignified care ?



- 1: Understanding normalization principles
2. Respecting individual values and preferences
3. Supporting self-determination rights
4. Dignified end-of-life choices
5. Other

Fig.13: Critical aspects of dignified care

Summary of part 2, section I and II

- All academies think “Human-centered medical and nursing care” is an important approach in pursuit of well-being in aging societies.
- “Social participation promotion for the elderly” is considered to be important by EAJ.
- “Employment and income improvement for the elderly” is considered to be important by NAEK.
- “Insurance and welfare system redesign” is considered to be important by EAJ and CAE.

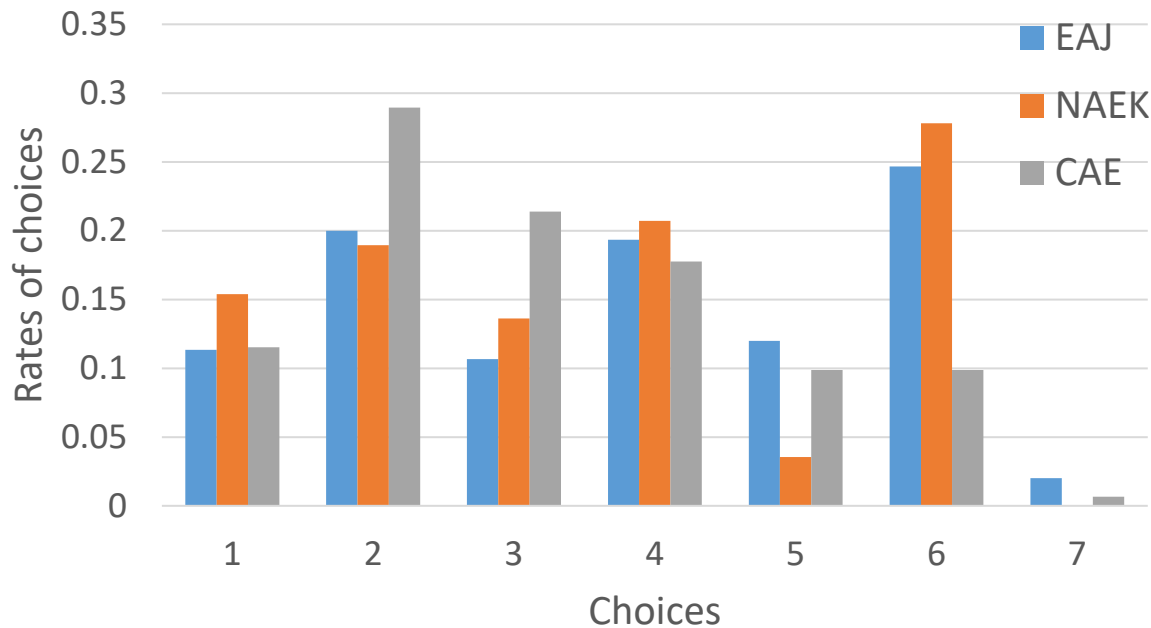
Summary of part 2, section I and II

- Regarding “Medical and Care Innovation,” Utilization of digital technologies” and “Developing comprehensive community care systems” are commonly thought to be important by 3 academies.
- In order to implement above-mentioned “digital technologies,” “Enhancing system reliability and security” is commonly focused on. NAEK and CAE also think “Systems and regulatory development” is necessary.
- 3 academies commonly think “Shift from treatment-centered to patient-centered care” should be conducted.
- Regarding the cancer and lifestyle disease, “Improving prevention awareness” and “Providing effective health information” are thought to be important by all.

Part 2; Fact-finding Survey

Section III: Elderly Social Engagement

3. Which areas should your country prioritize for elderly social participation and reducing family burdens?

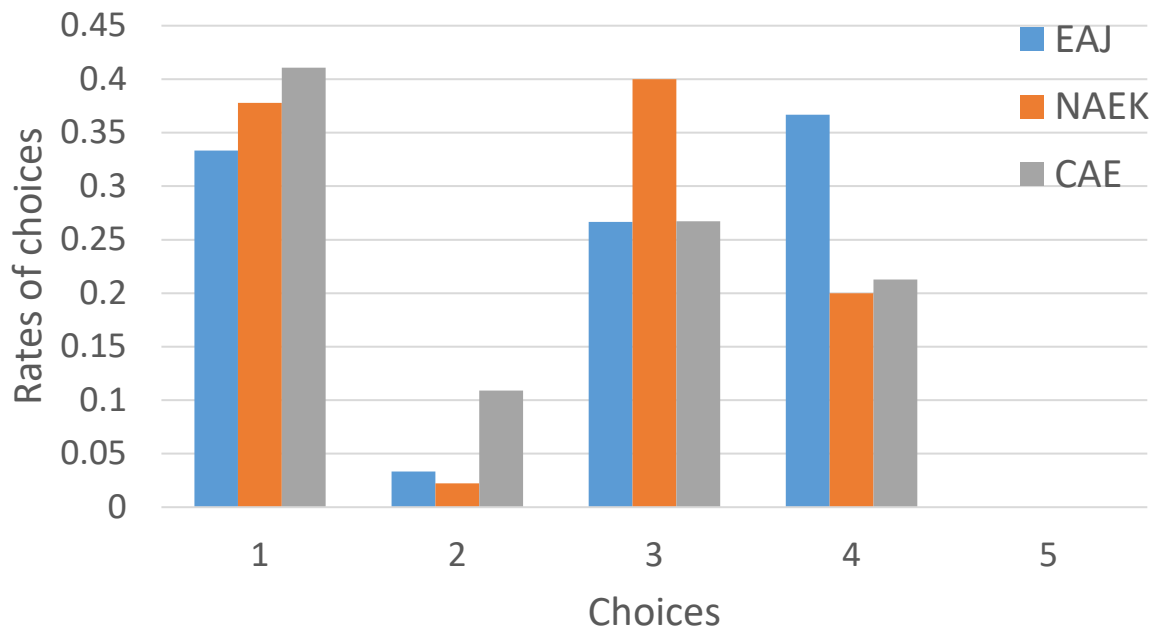


- 1: Bridging the digital divide
- 2: Strengthening community support systems
- 3: Eliminating healthcare access disparities
- 4: Reducing nursing care economic burden
- 5: Enhancing intention of elderly social participation
- 6: Providing opportunities for elderly social participation
- 7: Other

Fig.14: Major topic in Elderly Social Engagement

Part 2; Fact-finding Survey

3-1. What are the important strategies for bridging the digital divide?

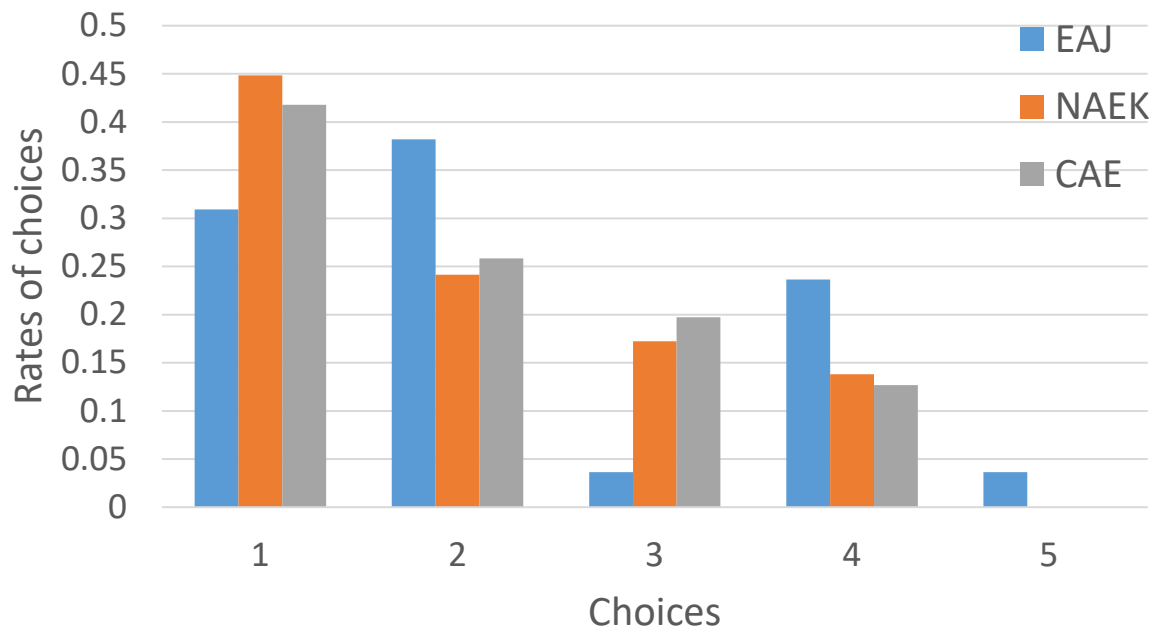


- 1: ICT education for elderly populations
- 2: Multilingual healthcare ICT support
- 3: Equal access to telemedicine services
- 4: Healthcare-IT industry collaboration
- 5: Other

Fig.15: Important strategies for bridging the digital divide

Part 2; Fact-finding Survey

3-2. What are the important community development focuses?

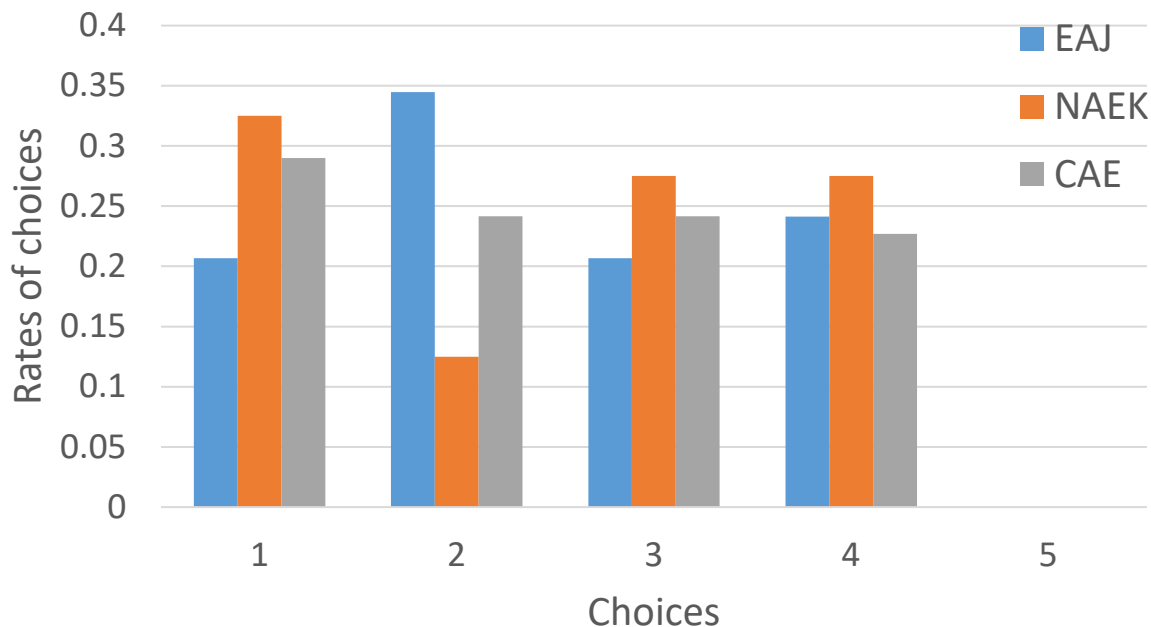


- 1: Comprehensive medical systems including home care
- 2: Local nursing care system improvement
- 3: Integration with housing policy
- 4: Elderly independence support
- 5: Other

Fig.16: Important community development focuses

Part 2; Fact-finding Survey

3-3. What are the effective approaches to eliminate care disparities



- 1: Better distribution of medical personnel
- 2: Regional medical cooperation
- 3: Medical big data sharing and utilization
- 4: Regional medical infrastructure enhancement
- 5: Other

Fig.17: Effective approaches to eliminate care disparities

Part 2; Fact-finding Survey

3-4. What are the promising technologies for reducing care costs?

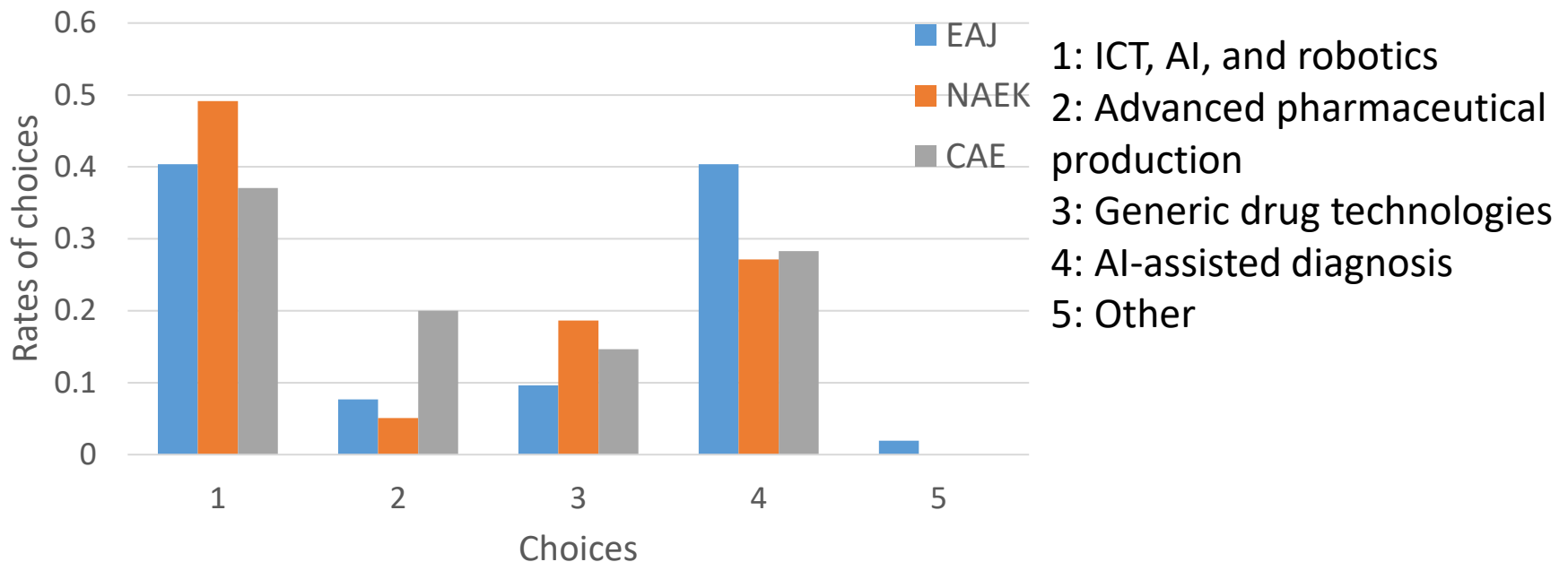


Fig.18: Promising technologies for reducing care costs

Part 2; Fact-finding Survey

3-5. What are the effective technologies for encouraging elderly engagement?

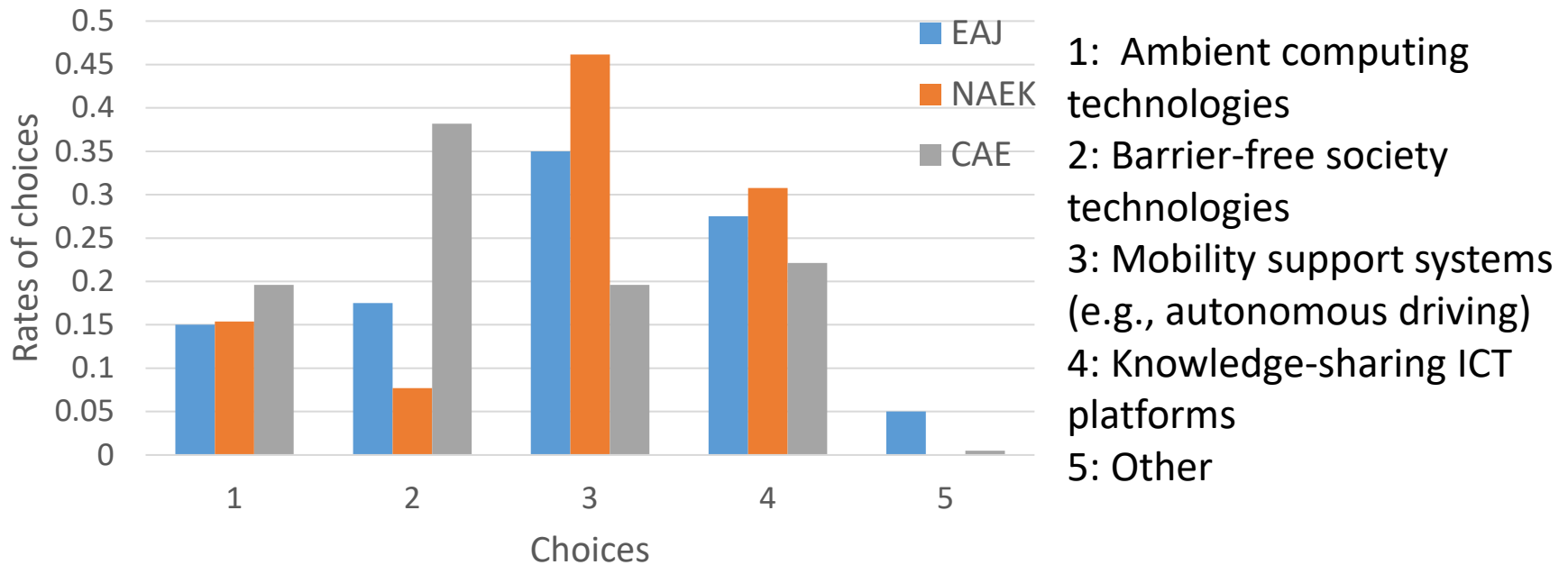


Fig.19: Effective technologies for encouraging elderly engagement

Part 2; Fact-finding Survey

3-6. What are the Effective technologies for encouraging elderly engagement?

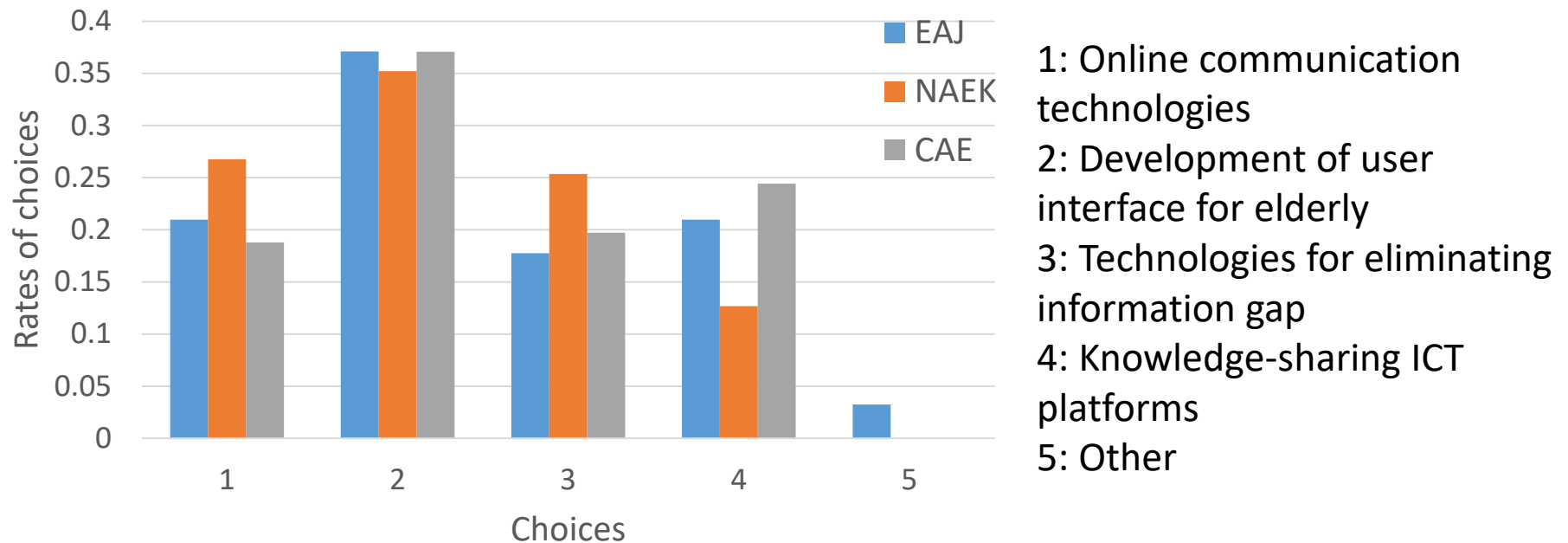


Fig.20: Effective technologies for encouraging elderly engagement

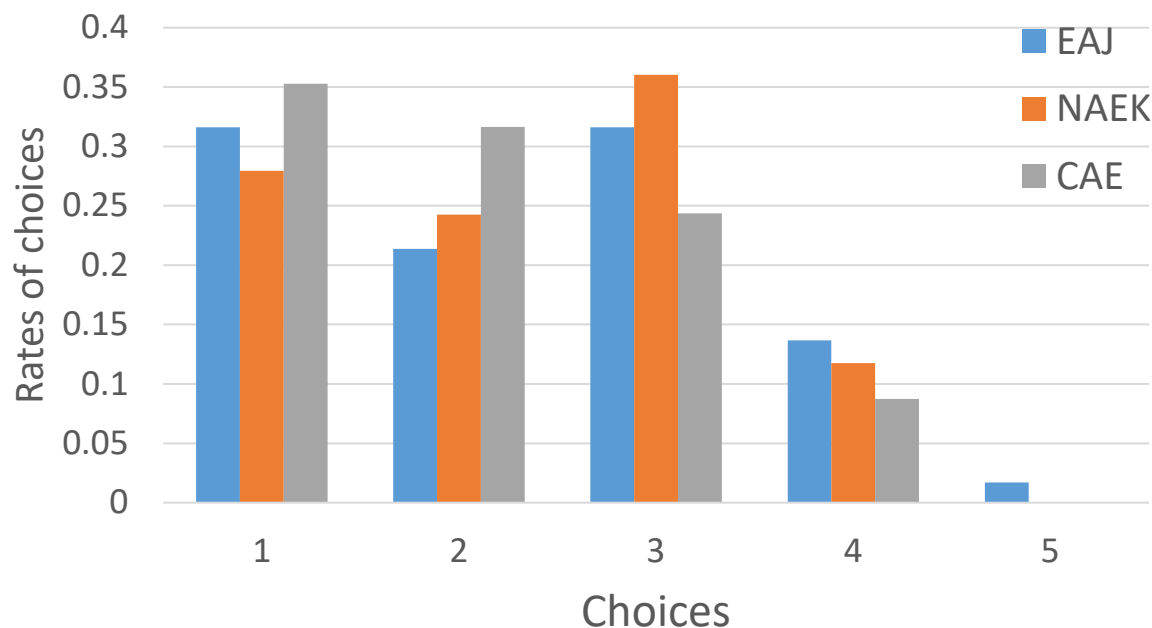
Summary of part 2, section III

- For elderly social engagement, CAE thinks “Strengthening community support systems” is most important, while EAJ and NAEK think “Providing opportunities for elderly social participation” is the most.
- In order to bridge the digital divide, “ICT education for elderly populations” is thought to be important by all academies.
- For “Comprehensive medical systems” and “Local nursing care system improvement” are thought to be important for community development.
- All the academies think “ICT, AI, and robotics” are the key to reducing care costs.
- “Development of user interface for elderly” is considered to be important for elderly social engagement.

Part 2; Fact-finding Survey

Section IV: Ethical, Legal, and Social Issues

4. Which ethical and legal areas should your country prioritize for science and technology innovation?

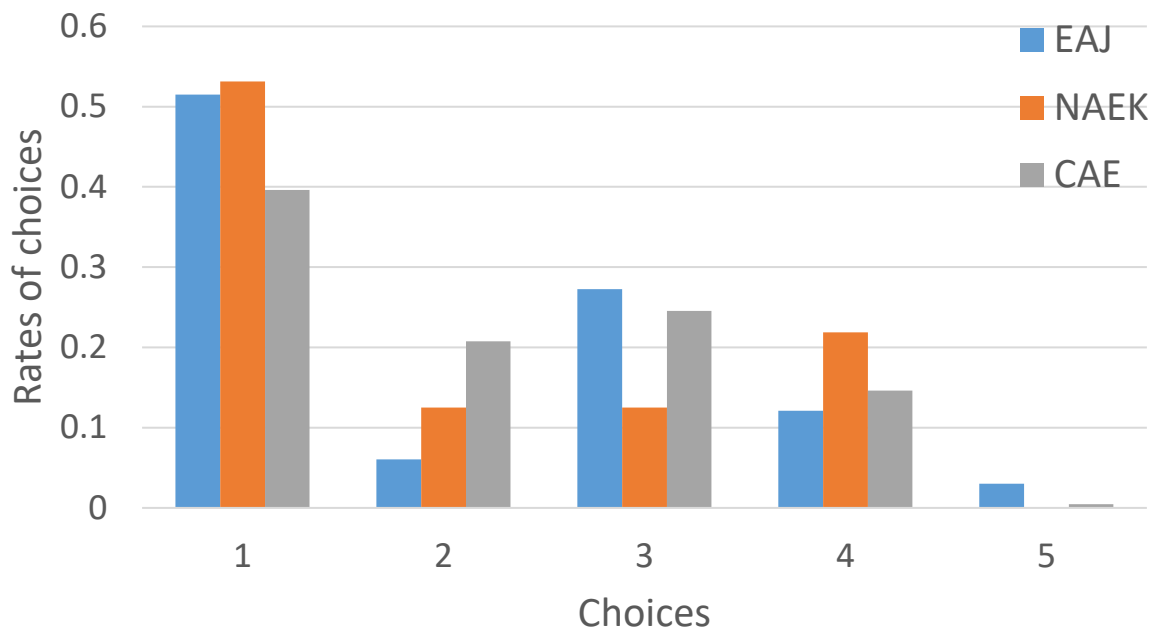


- 1: Ethics of monitoring and behavior modification systems
- 2: Real-world data and evidence ethics in drug discovery
- 3: Large language model utilization ethics
- 4: Synthetic/programmable biology ethics
- 5: Other

Fig.21: Ethical and legal areas that should be prioritized

Part 2; Fact-finding Survey

4-1. What are the critical ethical considerations?



- 1: Remote monitoring and diagnosis ethics
- 2: Decentralized clinical trial ethics
- 3: Wearable device biomarker development ethics
- 4: Digital therapeutics application ethics
- 5: Other

Fig.22 Critical ethical considerations

Part 2; Fact-finding Survey

4-2. What are the important ethical focuses for drug discovery data?

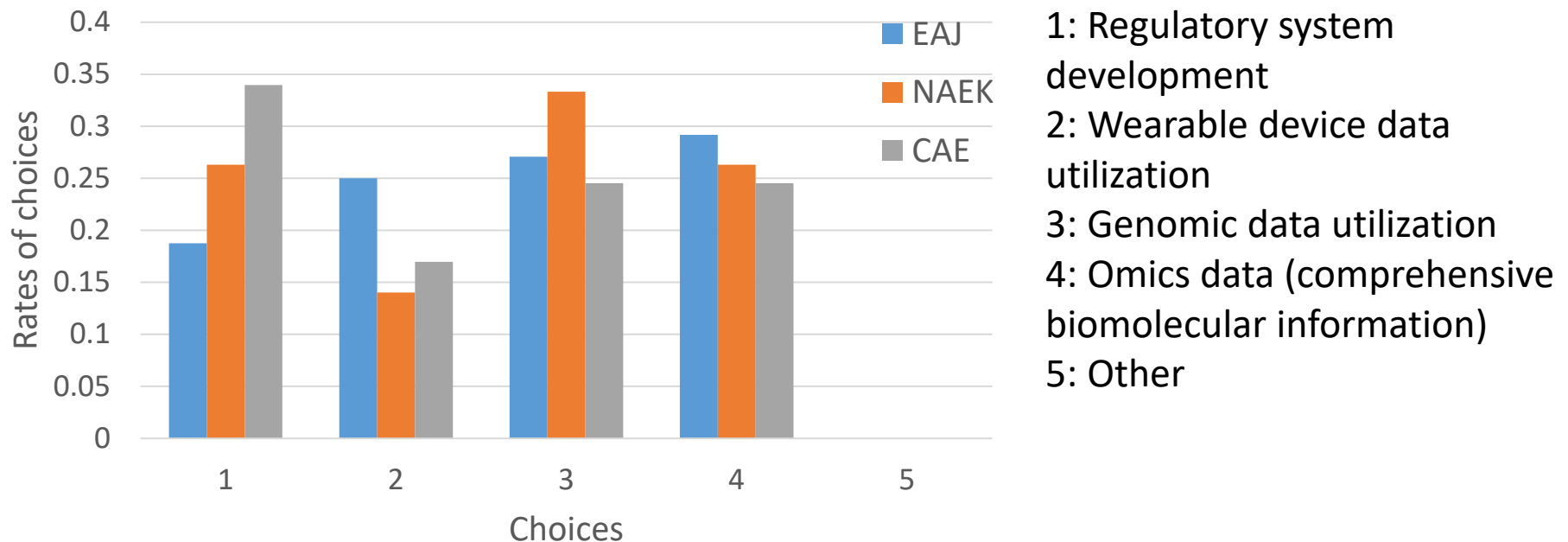


Fig.23: important ethical focuses for drug discovery data

Part 2; Fact-finding Survey

4-3. What are the critical application areas for ethical guidelines?

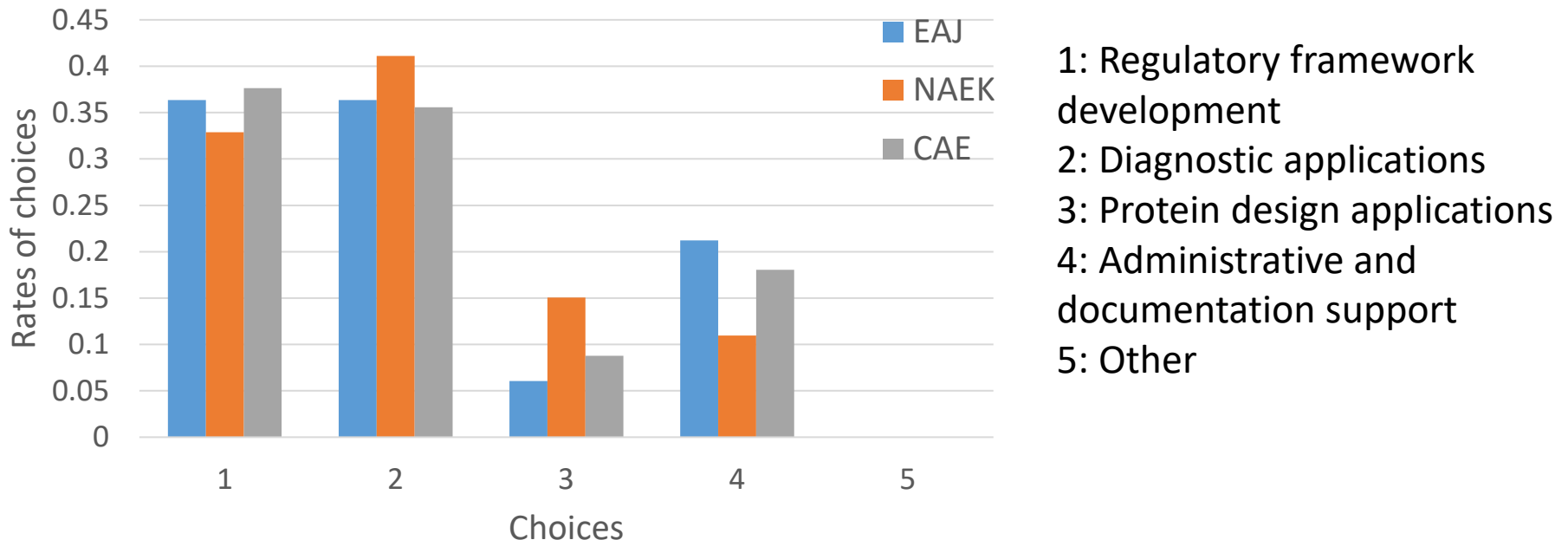


Fig.24: Critical application areas for ethical guidelines

Part 2; Fact-finding Survey

4-4. What are the important ethical considerations?

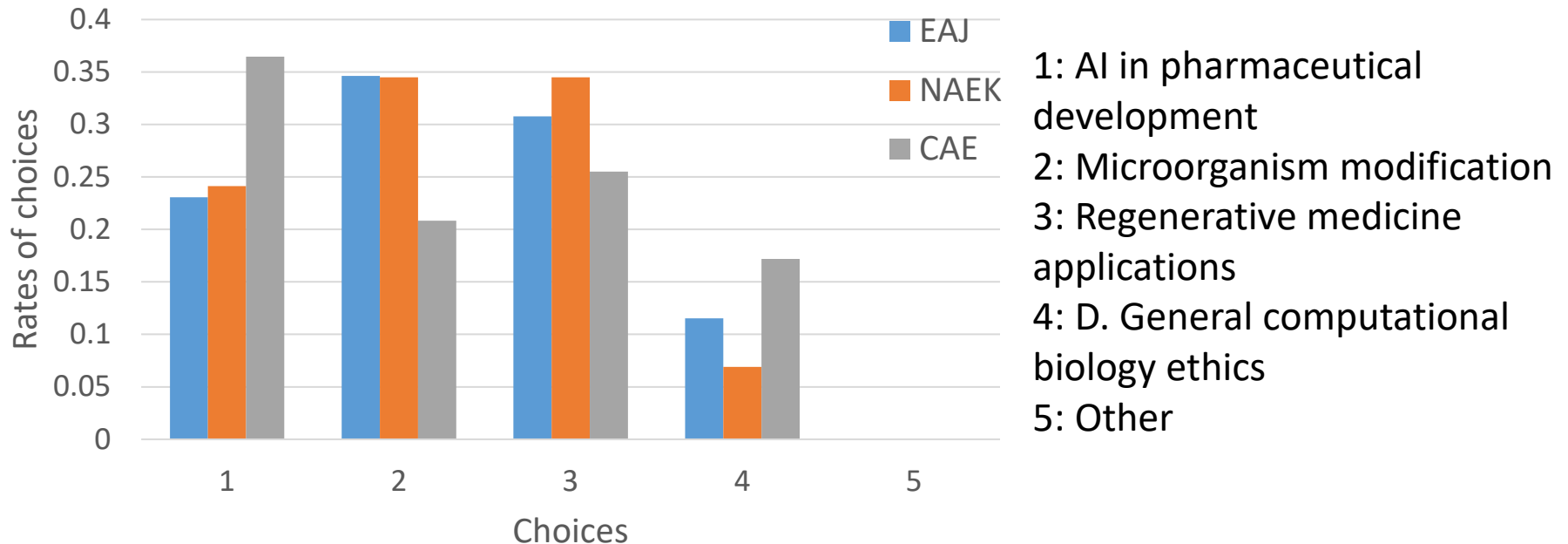


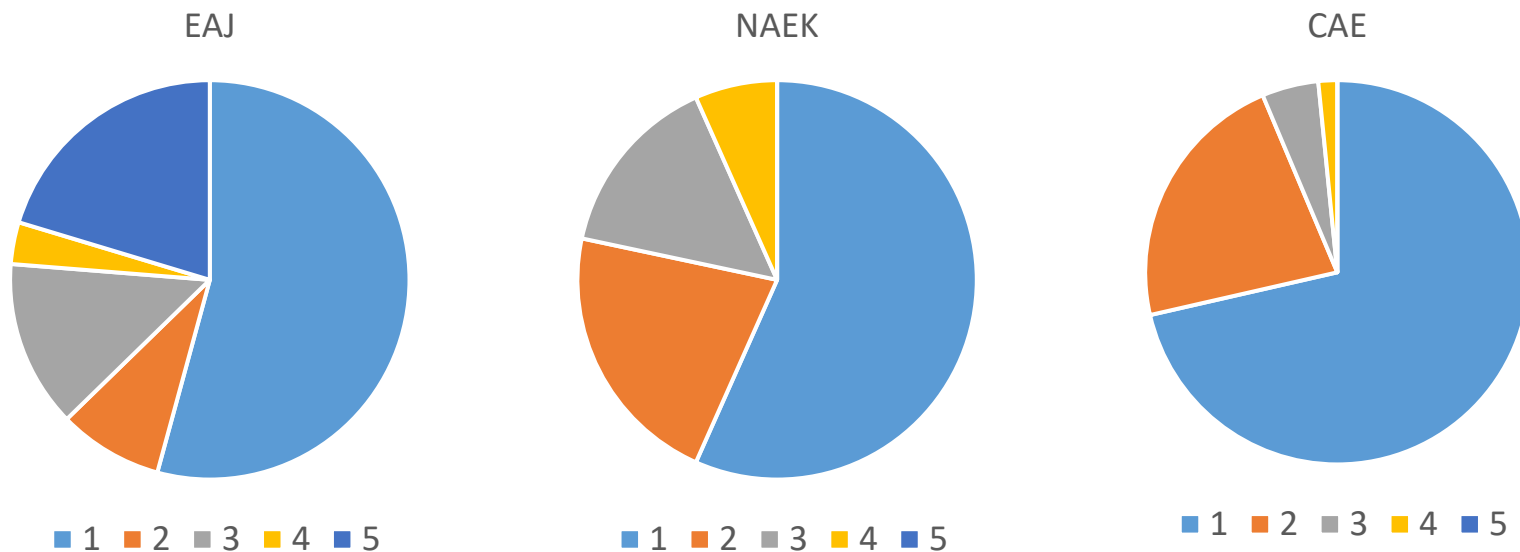
Fig.25: Important ethical considerations

Summary of part 2, section IV

- “Ethics of monitoring and behavior modification systems,” “Real-world data and evidence ethics in drug discovery” and “Large language model utilization ethics” are all thought to be important among Ethical, Legal, and Social Issues.
- “Remote monitoring and diagnosis ethics” are the strong focus of ethical considerations by 3 academies.
- “Regulatory framework development” and “Diagnostic applications” are the critical application areas to discuss ethical guidelines.
- Ethical consideration is thought to be essential for most of the technology applications, such as using genomic data, AI or remote sensing data for medical care.

Part 3; Personal Information

● Profession

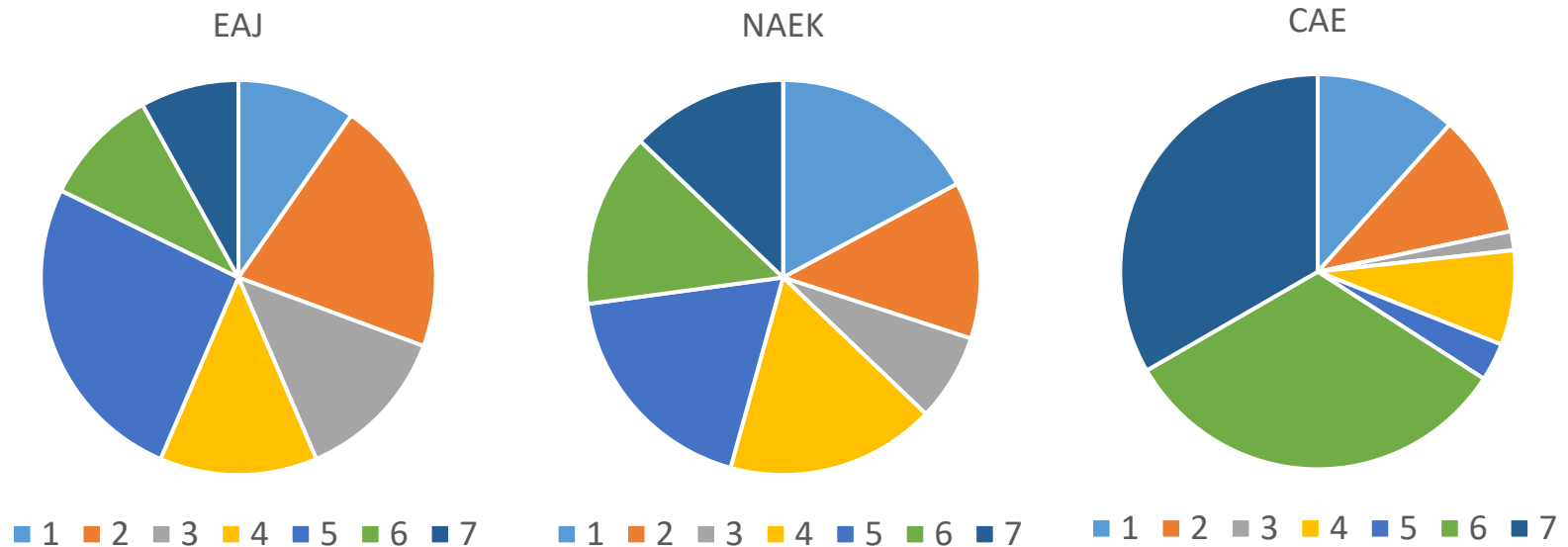


1: Professor, 2: Research scientist, 3: Company executive or employee
4: Government official, 5: Other

Fig.26: Profession of respondents

Part 3; Personal Information

● Area of specialty



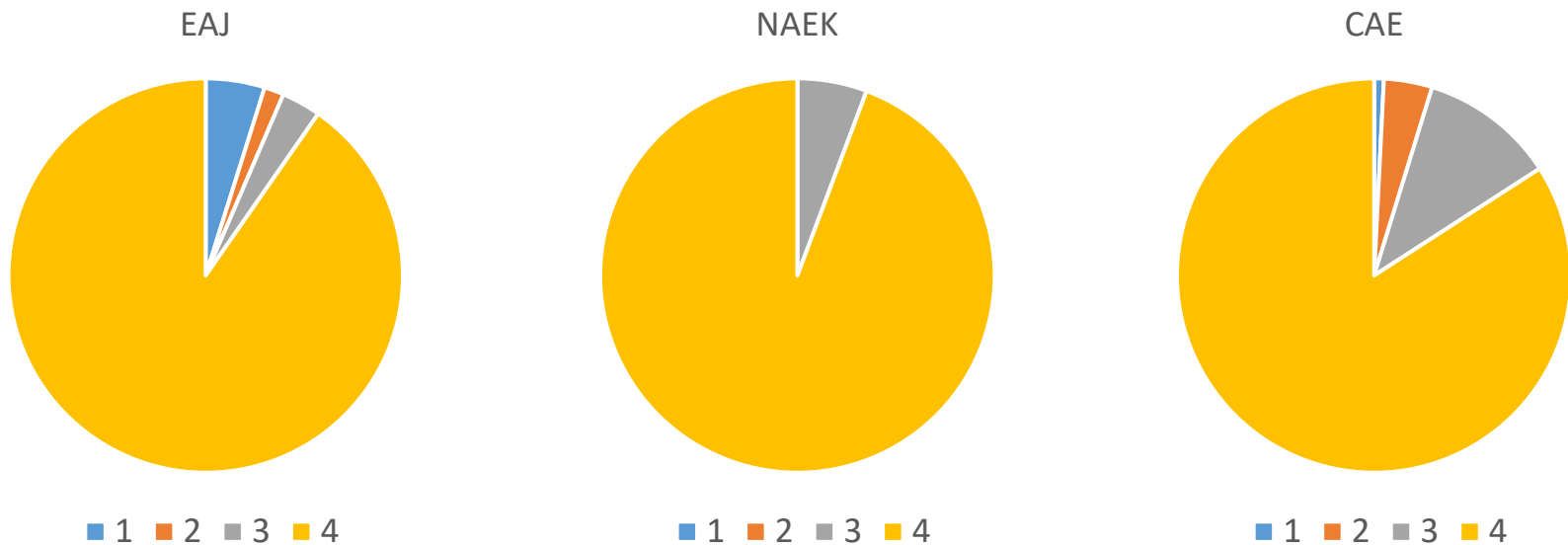
1: Civil and environmental engineering, 2: Mechanical engineering, 3: Technology management, 4: Material and energy resource engineering, 5: Electric/electronic engineering & ICT, 6: Chemical and biomedical engineering, 7: Other

Fig.27: Area of specialty of respondents

Note: Other includes medical engineering

Part 3; Personal Information

● Experience



1: Less than 5 years, 2: 5-10 years, 3: 10-20 years, 4: More than 20 years

Fig.28: Experience in the area

Analysis and documentation, N. Mishima, EAJ

End

Thank you so much for your attention

Any comments and questions for the survey result and the analysis, please feel free to contact nmishima@gipc.akita-u.ac.jp