

Prof. Fausto J. Pinto: More of a Leading Figure and Passionate Cardiologist

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FOREWORD

Dear Readers,

Have you ever felt the power of passion? Passion can absolutely bring energy to your life. In this spotlight, we are fortunate to have Prof. Fausto J. Pinto as our guest. Prof. Fausto J. Pinto, a passionate world-renowned cardiologist, is Head of Cardiovascular Department at Santa Maria University Hospital and Full Professor of Cardiology at University of Lisbon, Lisbon, Portugal.

Prof. Pinto has been exploring cardiovascular study and dedicating to contribute to the growth of the cardiovascular field for almost 35 years. Serving as Former Dean of Lisbon School of Medicine at University of Lisbon, President of Cardiovascular Center of University of Lisbon, Past-President of World Heart Federation (WHF), and Past-President of European Society of Cardiology (ESC), he strongly feels himself responsible for being a role model as best as he can to encourage new generations to continue this great career.

In the following interview, Prof. Pinto demonstrated where his passions come from, his experience of patient management, expectations of future cardiologists, etc. Let's get straight to this reading journey.

INTERVIEW RECORD

Question 1

As a world-renowned expert, you have been dedicated to cardiology research for decades and many people are curious about how you keep academic enthusiasm. What makes you deeply devoted to the study of cardiology for years?

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Prof. Pinto

Thank you for having me. I think, for me, there have been four driving forces that motivate me to contribute to this field.

Lifelong fascination with the heart

I have been captivated by the heart since I was in medical school, and I have continued to work and developed my career in cardiology.

Passion for understanding the heart

I'm deeply interested in the physiology, pathology, diagnosis technology, and advancements in treatment related to the heart. I strive to enhance my understanding of how the heart functions in both health and disease.

Collaboration and global impact

I'm aware of the importance of working with teams around the world and collaborating with different organizations to improve cardiovascular health globally. I have worked closely with colleagues from various countries and find it rewarding to contribute to the field of cardiology.

Dedication to mentorship and inspiring future generations

I believe in being a role model and inspiring the new generations to work in the cardiovascular field. I feel satisfied in witnessing young professionals advancing in cardiovascular science and health care, ensuring a bright future for cardiovascular medicine.

Overall, my journey in cardiology has been fulfilling, driven by my passion for the heart, collaboration with teams worldwide, dedication to patient care, and commitment to inspiring and mentoring future generations in the field.

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Question 2

Prof. Pinto, you have published over 600 articles, with an h-index of 61. Among all of your excellent publications and achievements, what are the most important to you? Or, what are you most interested in recently?

Prof. Pinto

Publishing our work is crucial for visibility and accessibility to the scientific community. It also helps us understand what we are doing. Throughout my career, I have published significant papers in different periods. During my time in the United States, I published important papers on intravascular ultrasound and graft atherosclerosis management like *Intravascular ultrasound imaging of angiographically normal coronary arteries: An in vivo comparison with quantitative angiography* published in the *Journal of the American College of Cardiology* in 1991; *Intracoronary Ultrasound in Cardiac Transplant Recipients: In vivo Evidence of Angiographically Silent Intimal Thickening* published in *Circulation* in 1992, etc.^[1-4] These papers were pivotal in my PhD research.

In recent years, I have focused on advanced cardiovascular imaging, echocardiography, heart failure, and technological advancements. I have collaborated with colleagues on topics such as ventricular arrhythmia management, anticoagulation, and the impact of COVID-19 on cardiovascular health. Participating in clinical trials and investigations has allowed me to contribute to evidence-based guidelines for new drugs and technologies.^[5-9]

My involvement with international organizations has provided opportunities to publish guidelines and contribute to global cardiovascular health. I am particularly proud of the World Heart Report, which was launched last year during the World Heart Summit. Working with my team and international societies has enabled me to cover various aspects of cardiovascular medicine, from basic research to population-based studies.^[10-14]

I am especially proud of recent publications on the use of fixed-dose combinations and polypills as strategies to reduce the burden of cardiovascular disease.^[15,16] Moving forward, I will continue to contribute to science, policies, and strategies that improve cardiovascular management and health. It has been fascinating to engage in these different areas and share our research findings through publishing. By doing so, we contribute to the incremental increase in knowledge in the field.

Question 3

In your clinical and teaching experience, what impressed you?

Prof. Pinto

In my clinical and teaching experience, there have been numerous cases that have made a strong impression. These cases often present unique challenges that require extensive time and effort to accurately diagnose and effectively manage. Uncommon scenarios, including difficult congenital heart

diseases or systemic conditions such as circulatory diseases and vasculitis, have also been memorable.

What has impressed me more are the new treatments, tools, and technology in this field. From a therapeutic standpoint, I, an interventional cardiologist, have witnessed the evolution of treatment methods for coronary artery disease. Advancements in stents, intravascular imaging techniques, and novel approaches to managing the disease have been particularly interesting. The use of advanced tools such as imaging techniques has been fascinating in improving the diagnosis of conditions such as cardiomyopathy, heart failure, and myocarditis. The field of cardiology is dynamic and ever-growing, providing opportunities to contribute to medical education and improve patient outcomes.

Question 4

COVID-19 has been declared a global pandemic; it affects our multiple organ systems, including the cardiovascular system. You have done multiple researches on COVID-19. Could you please briefly talk about the interaction between COVID-19 and cardiovascular diseases?

Prof. Pinto

First, individuals with preexisting cardiovascular conditions have a higher risk of contracting the virus and experiencing complications, resulting in poorer outcomes compared to those without cardiovascular disease. Protecting these patients became a crucial goal during the peak of the pandemic, emphasizing the importance of vaccinating individuals with cardiovascular conditions promptly. This group is at a heightened risk of infection and more severe complications.

The other group includes individuals who have already contracted COVID-19. And what does the virus do to the heart or the cardiovascular system? Over time, we have learned that COVID-19 is a systemic disease rather than a solely lung disease since we realized that it could not only affect the respiratory system but also the entire body. Furthermore, we discovered the presence of some sort of endotheliitis, an infection of the endothelial cells, which played a role in some of the cardiovascular complications associated with this infection. We did observe some cases of myocarditis, although not as many as initially expected given the aggressiveness of the virus. However, there were also instances of myocardial lesions without the full-blown manifestation of myocarditis, as this infection can lead to various complications, including prothrombotic conditions. Some patients experienced thromboembolic events such as pulmonary embolism or other forms of prothrombotic cardiovascular events. Moreover, we now recognize the existence of a condition known as long COVID syndrome, in which certain patients experience long-term effects. Although it is still a relatively new phenomenon and we are continuously learning about it, it is evident that not all patients, but some, develop chronic conditions.

To summarize, COVID-19 has had both direct and indirect impacts on patients with cardiovascular conditions. It has acted as a trigger for cardiovascular conditions and also had an

important impact on the management of existing cardiovascular conditions during the early stages of the pandemic. It is crucial to understand and address these impacts to provide the best possible care for patients.

Question 5

Could you please advise on the psycho-cardiology education of cardiologists?

Prof. Pinto

Thank you for asking. I would like to propose two suggestions.

1. Psycho-cardiology knowledge should be incorporated into the field of cardiology

Psycho-cardiology is a relatively new term that encompasses an important aspect related to both mental health and cardiovascular conditions. As it gains increasing relevance, it becomes crucial to incorporate this knowledge and foster discussions within the field. This is because we understand the significant influence the mind can have on the cardiovascular system. There are notable examples of conditions directly triggered by mental issues, such as Takotsubo cardiomyopathy. This condition, resembling acute coronary syndrome, is typically induced by intense mental stress, potentially causing a profound impact on patients' lives. We are continuously gaining knowledge on how to enhance cardiovascular health by addressing the mind. It has evolved into a distinct discipline known as brain–heart interaction, exploring the mutual influence between these two vital organs. Fascinating research is underway to deepen our understanding of this intricate relationship. Historically, the heart was regarded as the center of emotions, love, and anger, but we now recognize that it is the brain that governs these functions. This connection between the brain and the heart is intriguing, especially regarding substances that neurologists use, which can impact cardiac function.

2. Psycho-cardiology medicine should be integrated into medical education

Compensatory mechanisms and nervous system involvement in heart failure have been extensively studied, shedding light on how the cardiovascular system compensates for abnormalities. In addition, the mental status of patients plays a significant role in their recovery from cardiovascular events such as heart failure. The way mental aspects are addressed directly affects patient outcomes and overall well-being. Recognizing the importance of psycho-cardiology, it should be integrated into medical education, starting from medical school and continuing through the training of residents and fellows. Cardiologists, in particular, need to acquire knowledge about how human behavior, mental attitude, and psyche can profoundly influence heart conditions. Psycho-cardiology already exists as a field, but its prominence will undoubtedly grow in the future of medicine, especially within cardiovascular medicine.

Question 6

What kind of physician, cardiovascular doctor in particular, do

you expect in the future? What professional skills are necessary for a qualified cardiovascular doctor?

Prof. Pinto

First, a qualified cardiovascular doctor should be specialized. Cardiology is a complex specialty that has become increasingly technological. As a result, we now have several subspecialties, which can be beneficial in terms of doctors specializing and excelling in specific types of treatments or procedures.

What's more, cardiovascular doctors should form the ethical basis of our profession. Despite our increasing specialization, we must not forget the human side of medicine that should underlie our professional practice as doctors. Our role as doctors goes beyond making accurate diagnoses and providing effective treatment. We are responsible for managing patients, considering their psychological well-being. Therefore, future cardiologists should never lose sight of the humanistic values that form the ethical basis of our profession.

Furthermore, cardiovascular doctors should acknowledge the potential for utilizing robots and artificial intelligence as valuable tools. In today's medical landscape, there are numerous challenges arising from artificial intelligence, machine learning, and data-related advancements. These novel developments pose unique challenges that we must confront. However, one thing that will remain unchanged is the existence of patients who require dedicated doctors to care for them. Alongside scientific and medical advancements, we must consider how to utilize these resources effectively. We aim to utilize the available tools, which are undoubtedly remarkable, but they should serve as aids to the medical community in delivering the best possible care to our patients.

In addition, we should also develop excellent soft skills including communication skills. It is crucial for doctors to develop excellent communication skills, often referred to as soft skills, during their medical education [Central Illustration].

Question 7

You hold many distinguished positions in Europe and beyond, including President of the WHF, President of ESC, and Editor-in-Chief of the *Portuguese Journal of Cardiology*. In consideration of your extensive experience of dealing with organizations and journals, could you please give some advice for the development of *Heart and Mind*?

Prof. Pinto

What is remarkably important is that establishing a solid reputation is vital. This can be achieved through publishing high-quality papers and conducting well-executed studies. Initially, it may require delving deeper and engaging experts to contribute to such publications. Building trust is crucial in this process, as it establishes credibility and visibility necessary for the journal's growth.

In today's digital age, social media has become an essential tool for communication, and this applies to scientific journals

Key question

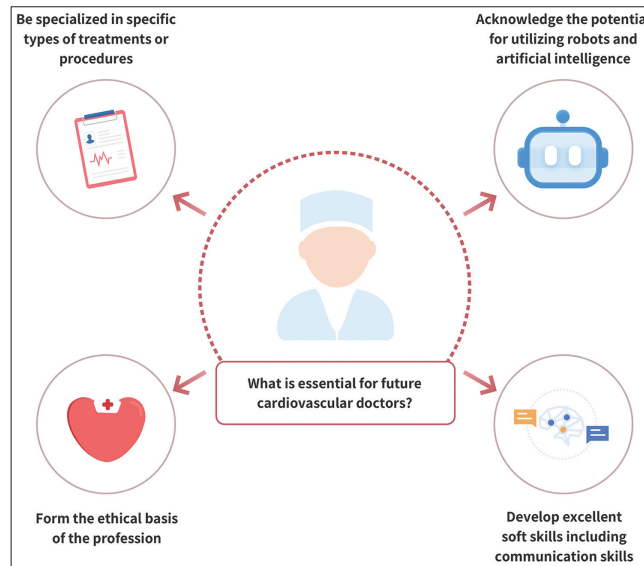
What is essential for future cardiovascular doctors?

Key finding

First, future cardiovascular doctors should be specialized in specific types of treatments or procedures. Second, cardiovascular doctors should form the ethical basis of our profession. They must not forget the human side of medicine that should underlie their professional practice as doctors. Thirdly, cardiovascular doctors should acknowledge the potential for utilizing robots and artificial intelligence as valuable tools. Lastly, it is crucial for cardiovascular doctors to develop excellent communication skills and soft skills.

Message for readers

For future cardiovascular doctors, it is essential to be specialized and virtuous. They should also be hungry in learning new technology and develop communication skills and soft skills.



Central Illustration: Four professional skills for future cardiovascular doctors

as well. It is crucial for journals to have a user-friendly website that is easily accessible to the scientific community. This allows researchers to read, refer to, and utilize the published papers. Improving visibility and dissemination are key elements in achieving these goals. Having a well-designed digital interface helps create trust among the scientific community and facilitates global engagement.

EDITOR'S NOTE

Not merely a passionate cardiologist, Prof. Pinto is more of a doctor with a sense of mission, committed to contributing to global health for individuals. He has humbly and increasingly kept learning and updating his knowledge system about his specialty and technological tools all along. During the 1-h interview, he minutely answered every question we proposed with enthusiasm. Here are seven impressive viewpoints concluding from his words:

1. Individuals with preexisting cardiovascular conditions have a higher risk of contracting the virus and experiencing complications, resulting in poorer outcomes compared to those without cardiovascular disease

2. COVID-19 has had both direct and indirect impacts on patients with cardiovascular conditions. It has acted as a trigger for cardiovascular conditions and also had an important impact on the management of existing cardiovascular conditions during the early stages of the pandemic
3. Psycho-cardiology knowledge should be incorporated into the cardiovascular field. Psycho-cardiology medicine should be integrated into medical education
4. Cardiologists should be specialized in specific types of treatments or procedures
5. Cardiologists should form the ethical basis of our profession. They must not forget the human side of medicine that should underlie their professional practice as doctors
6. Cardiologists should acknowledge the potential for utilizing robots and artificial intelligence as valuable tools
7. It is crucial for doctors to develop excellent communication skills or soft skills.

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Conflicts of interest

Prof. Fausto J. Pinto is an Editorial Board Member of the *Heart and Mind* journal. Prof. Meiyuan Liu is the Executive Editor-in-Chief of the *Heart and Mind* journal. Doris Yang is an editorial staff of the *Heart and Mind* journal. The article was subject to the journal's standard procedures, with peer review handled independently of Prof. Fausto J. Pinto and the research groups. There are no conflicts of interest.

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