

Advances in medical technology and new digital educational platforms

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INTRODUCTION

Mediums of communication had evolved exponentially over time, and several technology peaks have changed the way we see and understand the world (Figure 1). Over the last decades, we have witnessed a cybernetic revolution motivated by an increase in the density of such technology peaks. Where this revolution will lead humanity remains a mystery.^{1,2}

THE IMPACT OF TECHNOLOGY ON MEDICINE

Some areas of professional activity have been deeply affected by these new technology trends. Especially in medicine, there are changes taking place from educational practices – with hybrid systems that mix long-distance learning platforms and in-person activities with realistic simulations – to medical assistance, with the use of apps and devices to assist in the decision making process with the patient.³

Following this trend of medical advances, along with the greater diffusion and integration of knowledge that the cybernetic revolution has brought, there has been a spontaneous scientific trend towards medical practices with an increasingly objective academic approach, which marked the beginning of the “evidence-based medicine” era.⁴

In that context, we saw a boom in academic publications over the past two decades, reaching almost 250 published papers in 2016. (Figure 2).^{5,6}

However, although technology facilitated the creation, diffusion, and access to digital platforms, it also fostered an environment prone to the dispersion of attention and content, making it difficult to take advantage of all the material produced. Another negative factor of this “technological paradox” is the medical activity itself, which is becoming increasingly intense with very high workloads, making it even

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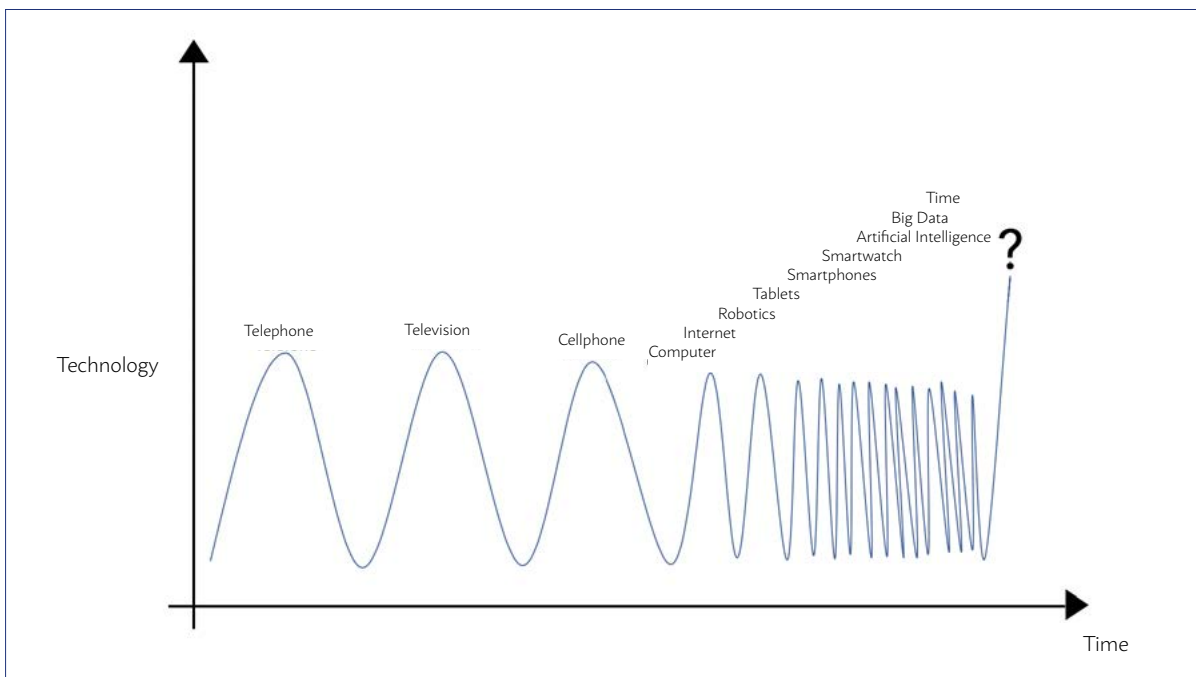


FIGURE 1 - TECHNOLOGICAL GROWTH

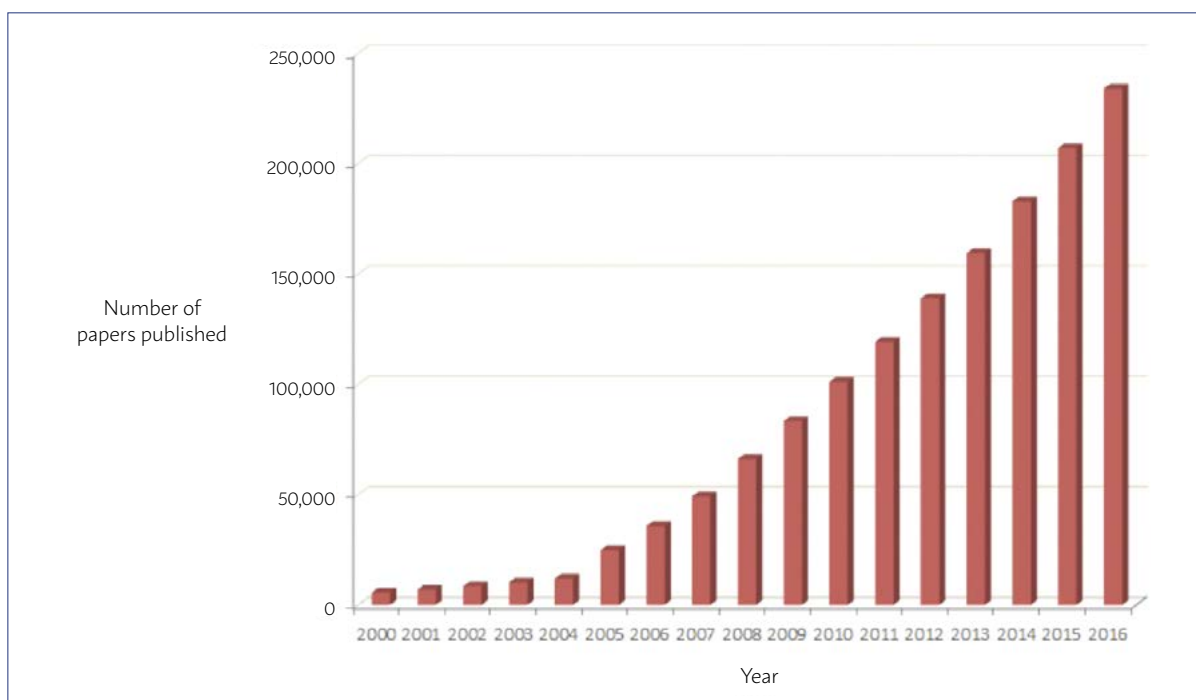


FIGURE 2 - PUBLICATIONS IN RECENT YEARS. SOURCE: ADAPTED FROM CLINICALTRIALS.GOV

more difficult to stay updated with the latest medical findings.⁷

The ever-growing knowledge, the creation of multiple digital platforms, and the enormous amount of simultaneous information that gets dispersed combined with the scarce time to consume it all created a new generation of doctors who need information facilitators, such as electronic devices that ensure quick access to information that is pragmatic and with high technical qualifications.^{8,9,10}

CARDIOTRIALS APP

It was the understanding of this scenario that motivated the creation of the CardioTrials app (Figure 3), whose purpose is the critical analysis of scientific papers published in major cardiology journals. The app is an actual database of hundreds of papers updated weekly.

The app was conceived for health professionals, including nurses, physical therapists, and doctors of all specializations but, more specifically cardiol-



FIGURE 3 - CARDIOTRIALS APP



FIGURE 4 - APP SCREENSHOT



FIGURE 5 - APP SCREENSHOT

ogists. In Brazil, 100-thousand professionals are expected to benefit from this free and high-quality scientific product.

The papers are divided into 15 subspecialties of cardiology (categories) to facilitate their access and search (Figure 4).

The app brings the leading medical studies that guide medical conduct, all summarised and translated into Portuguese.

All articles described are subdivided into quick topics to facilitate reading and understanding: acronym, title, magazine, publication

date, objective, comparison groups, methods, inclusion/exclusion criteria, baseline, outcomes, perspective, conclusion, reference, link and sponsors (Figure 5).

Thus, the CardioTrials App emerges as an important platform for the dissemination of knowledge in the current scientific scenario. The app brings a dynamic, simple and pragmatic solution for the impairments and difficulties of keeping up to date with the latest medical knowledge, being a extremely useful tool for professional training in this new technological era.



FIGURE 6 - CHANNELCARDIOLEARNING BRINGS TWO WEEKLY VIDEOS, NO LONGER THAN 5 MINUTES EACH



FIGURE 7 - OPENING OF THE “COFFEE AND JOURNAL” VIDEO



FIGURE 8 - OPENING OF THE “COFFEE AND JOURNAL” VIDEO WITH A CONFERENCE COVERAGE

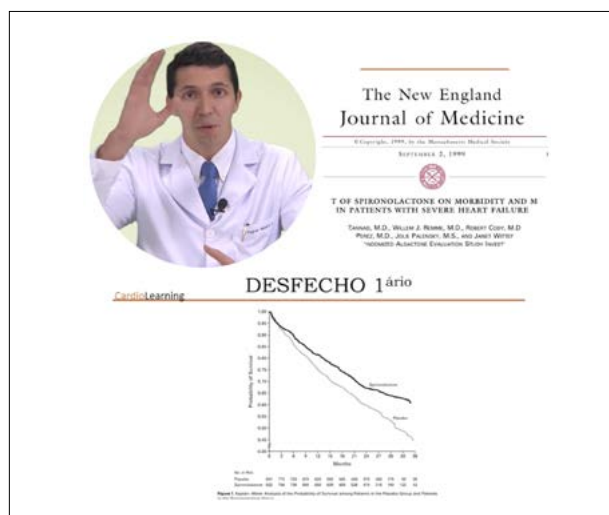


FIGURE 9 - OPENING OF THE “5 TRIALS” VIDEO

CARDIOLEARNING PROJECT

Other cybernetic platforms, in addition to apps, are emerging to add even more to this process of knowledge diffusion and facilitation. The current educational model, which requires a fast track approach to learning, motivated the creation of the CardioLearning YouTube channel (Figure 6).

The first weekly video, called “Coffee and Journal” (Figure 7), posted on the beginning of the week, is an editorial in the form of short videos. In it, editors make a summary of the main articles published on cardiology during the week in a newscast format, bringing headlines of the most important updates. In addition, the channel covers the major cardiology conferences (Figure 8).

The second weekly video, posted during the weekend, is called “5 Trials” and brings in-depth discussions with critical analyses of the greatest trials in cardiology history – all that in a maximum of 5 minutes (Figure 9).

CONCLUSION

The technological revolution has brought several permanent changes in the medical area, which made possible unprecedented scientific growth. With the huge volume of content produced, devices that facilitate the access to knowledge have become essential for keeping up to date with medical findings. In this scenario, apps like CardioTrials and educational platforms like the CardioLearning Project are noteworthy diffusers of high-technical-quality knowledge with an academic commitment.

Statement of contribution

Vagner Madrini Junior, Francisco Akira Malta Cardozo, Brenno Rizerio Gomes, Mozar Suzigan de Almeida contributed in writing this article. Thiago Luis Scudeler was responsible for the scientific review and contributed with the intellectual concept of the study.

PALAVRAS-CHAVE: tecnologia, telessaúde, CardioTrials, CardioLearning, inovação

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