procedure. In patients with mechanical valve replacements, telemedicine programs can be developed with nursing support to allow patients to monitor the international normalized ratio themselves. Self-monitoring of the international normalized ratio reduces its variability and lowers the incidence of thrombotic and hemorrhagic events. Along with a very significant reduction in regular in-person visits, this would help prevent COVID-19 exposure among vulnerable patients.

The main difficulty with telemedicine visits in patients with aortic or valve disease relates to the need for imaging tests to aid decision-making. Telemedicine visits could be most beneficial for patients with grade I or II regurgitation or mild stenosis, patients with normal functioning valve replacements, and patients with aortic dilation and stable diameters, as further testing is not essential in these patients. Conversely, in-person visits will be needed in the following cases:

- Patients with new onset of valve disease symptoms (eg, suspected heart failure, congestion, angina, syncope, new arrhythmias).
- Patients with severe valve disease with recent echocardiography revealing progression of parameters indicating the need for surgery should be evaluated in person and have echocardiography repeated within 6 months.[2]
- Patients with severe valve disease who remain asymptomatic and have stable echocardiographic parameters outside the limits indicating surgery could reasonably receive telemedicine follow-up for up to 1 year with 1 echocardiogram per year.
- Patients with aortic dilatation $>$ 45 mm require yearly follow-up imaging scans (echocardiogram for aortic diameter $>$ 45 mm or aortic computed tomography or cardiac magnetic resonance for aortic diameter $>$ 50 mm).
- Patients with aortic disease after acute aortic syndrome should be evaluated, whenever possible, by advanced imaging techniques, by cardiac magnetic resonance or computed tomography, and at in-person visits.

To minimize exposure to COVID-19, patients should be scheduled for imaging tests (particularly in the case of echocardiograms) and in-person visits on the same day, ideally consecutively. Follow-up of these patients should preferably take place in specialized outpatient offices.

Patients with mild mitral or tricuspid regurgitation do not require follow-up, and can be referred for monitoring only by primary care. Last, patients with mild aortic regurgitation, mild aortic stenosis, or mild mitral stenosis may benefit from priority follow-up by primary care with support from cardiology.

In conclusion, apart from the difficulty arising when additional tests are needed, telemedicine visits can help minimize exposure risks for both patients and health care professionals in the current epidemiologic context.

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Telemedicine for patients with valvular heart disease or aortic disease in the era of COVID-19. Response

La consulta telemática para el paciente con valvulopatías o enfermedad aórtica en tiempos de la COVID-19. Respuesta

To the Editor,

We appreciate the letter by González Gómez et al. regarding the consensus document of the Spanish Society of Cardiology on telemedicine consultation for clinical cardiologists in the era of COVID-19[1] because it marvelously complements the information provided in the consensus document, which is focused on ischemic heart disease, heart failure, and arrhythmia. Although the follow-up of patients with valvular heart disease and aortic disease is hugely important for clinical cardiologists, we were unable to address these conditions due to issues related to document length.

Interestingly, the authors use the same format as the consensus document, reviewing the information to be covered with patients in the telemedicine consultation and discussing which patients would require a face-to-face consultation and which can be followed up in primary care.

The authors recommend a one-time consultation with echocardiography for the follow-up of these patients. Although we believe this to be the most appropriate approach, these patients often require additional tests to complete their assessment, such as transesophageal echocardiography, computed tomography, cardiac magnetic resonance imaging, and cardiac catheterization. We believe that telemedicine consultations can also be highly useful for informing patients of the main results of these tests.

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A debatable aspect would be the telematic (or face-to-face) follow-up in cardiology of patients with a mechanical or biological prosthesis, particularly when more than 1 year has passed after implantation and the patients have been stable. Such patients could perhaps be included in the group of patients for priority follow-up in primary care with the support of cardiology if new symptoms or suspected possible complications develop so that they undergo echocardiography.

Finally, an issue not considered by the authors because it is not the main topic of the letter is the modality of the procedures for the treatment of valvular heart diseases, given that the current pandemic situation would be another reason to prioritize percutaneous procedures (transcatheter aortic valve implantation, MitraClip), whenever indicated, because they can reduce the length of hospital stay (and thus also the risk of infection) and the need for admission to intensive care units.[2]

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Clinical, psychological, educational, and professional impact of the COVID-19 pandemic in young Spanish cardiologists

Impacto clínico, psicológico, formativo y profesional de la pandemia por COVID-19 en jóvenes cardiólogos españoles

To the Editor,

Not only has Spain been one of the countries most affected by the COVID-19 pandemic,[1] it has also had the highest number of infected health care staff. Although young people have been among the most involved in combating the crisis, little is known about how they have been affected. Accordingly, we decided to assess the clinical, psychological, educational, and professional impact of this pandemic on young Spanish cardiologists and to determine their degree of satisfaction with the management of the crisis. Between March and July 2020, we administered an online survey to members of the Spanish Society of Cardiology $\leq$ 40 years old.[2] The survey, created using the modified Delphi method, was voluntary and anonymous.

Of the 349 validated participants, 88% attended infected patients (76% for longer than 4 weeks). The infection incidence in this group was 15% and Madrid was the autonomous community with the highest number of reported cases. The survey results indicated that the measures were late and often inadequate. Although many cardiology services (77%) implemented protocols to avoid infection and most (96%) supplied personal protective equipment (PPE), more than half of the young cardiologists surveyed considered the protocols to be late and only 20% were satisfied with the PPE supplied; 51% of the PPE was late and insufficient and 25% was also defective. In addition, infection was facilitated by close contact between colleagues and a lack of identification and tracing of the contacts of infected physicians, which occurred in 70% of occasions. The training received by young cardiologists was also deficient. Less than half of those surveyed (46%) considered their understanding of the COVID-19 infection and its effects to be adequate, particularly the cardiological aspects (figure 1).

According to the survey data, women were more likely to be infected (62%), data that are in line with those published by the Spanish National Epidemiological Surveillance Network[3]; the average age of those infected was 29 (27-33) years and most were residents or fellows (68%). The least likely to be infected were professionals who worked in electrophysiology or catheterization (4% and 6%, respectively), while the most likely to be infected were clinicians (35%).

The survey data revealed that the pandemic affected not only professionals' physical health, but also their psychological well-being. Psychological problems developed from close contact with high-risk populations, a lack of resources, a feeling of not being protected, low staffing levels, excessive workload, the high rate of infection among colleagues, isolation from family and social networks due to fear of infecting them (present in 94% of those surveyed), uncertainty, and other factors. Some of the symptoms reported are shown in figure 2. Strikingly, despite the major impact of these problems, most of the participants (95%) did not seek psychological help.

About 6 of every 10 survey participants considered this experience more positive than negative, even though 17% permanently (and 42%, temporarily) missed a work opportunity or the chance to participate in a research project or training scholarship. Regarding the handling of the health care crisis, scored from 0 to 10, cardiology services received 8 points; hospital management, 5; autonomous communities, 5; and the Spanish Ministry of Health, 4. Residents awarded cardiology services and the Ministry of Health a lower score than attending physicians, 7 and 3, respectively. We do not know the reason for this difference, but possible explanations include a lack of consultation when their clinical activity was being changed, missed opportunities, and probably a greatly personal impact of PPE shortages.

The pandemic has had a major clinical, psychological, educational, and professional impact on young Spanish cardiologists, has