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## **The complex impact of artificial intelligence on physician-patient connection**

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### ***Aim***

The doctor-patient relationship can be regarded as an integral segment of social support that possesses relevant therapeutic impact. Recently, the doctor-patient relationship has been reshaped basically that has been accelerated by health digitalization. Artificial intelligence (AI) based interaction devices, such as virtual avatars (VA, computer-generated graphic representations of people or other characters, typically monitored by a human) and virtual agents (VAG, AI-based computer systems designed to simulate human conversations and constantly interact with users, patients), might be influencing doctor-patient communication patterns in novel ways. Within a framework of health sociological meta-analysis, we aim at presenting how AI based interaction devices shape doctor-patient interactions.

## ***Methods***

58 scientific papers and research reports were elaborated on with PRISMA method to achieve original purpose. Since we conducted a non-interventional survey, our research did not require regulatory or ethical approval. 51 (87.9%) empirical studies applied quantitative methods. Interestingly, most of the surveys, 21 in total (36.2%), were conducted in China and the rest from the USA and the Western European region.

## ***Results and Discussion***

Empirical findings suggest that VA and VAG can effectively be applied in general practitioner and patients' interaction; using VA and VAG could be learnt by elder people as well. Moreover, daily consultations of people with chronic diseases and diabetes with VA and VAG have been so successful because these health records could be transferred to the certain physician in time. Notwithstanding, AI-based communication tools should be employed with caution and continuous medical monitoring among individuals with psychiatric and mental illnesses. Meanwhile, two studies emphasize that certain nonverbal cues (such as patients' body language and facial expressions) are relevant during communication, yet these may be absent in virtual consultations. Studies also highlight deficiencies in empathy and trust, which are two essential components of the doctor-patient relationship. Several surveys also emphasize the difference in empathy demonstrated by a computer (such as a virtual health assistant) compared to that shown by a human health professional. This is significant because patients appreciate the shared experience of life and emotions when forming interpersonal relationships. While virtual agents (VAGs) are capable of simulating "empathetic concern that is incredibly interactive and humanlike", studies still question whether they will ever be able to display the same level of empathy as a professional healthcare provider. If a virtual avatar or agent fail to establish an adequate, trustful atmosphere, patients may withhold personal information necessary for accurate diagnosis and appropriate therapeutic recommendations. Therefore, trust is a crucial determinant of effective healthcare delivery.

## ***Conclusion***

The integration of AI-based communication devices in healthcare has the potential to fundamentally alter doctor-patient interactions, and further sociological research is needed to understand the long-term implications of these changes.