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Opinion

The Rise of Medical Questionnaires in Telemedicine. Will they Initiate a Paradigm Shift in Medicine?

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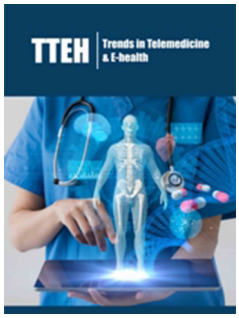

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Questionnaires Show Disruptive Potential in Online Direct-to-Consumer Prescription Platforms

Questionnaires have long been used in medicine to make a diagnosis in a standardized way or to quantify the severity of a disease [1]. They are also used for standardized classification of diseases, disease or risk scoring and in a more standardized form as checklists e.g. before vaccination or in anaesthesiology before operations [2]. Their disruptive potential, however, only unfolded at the time when Direct-To-Consumer Prescription (DTCP) platforms became popular [3]. These platforms have become a major player in the healthcare market from their prevalence, popularity with patients, their superior business models and accompanying company valuations [4,5]. This does not refer to the efforts of the public health sector to build a secure and stable telematics infrastructure, nor does it refer to several private companies offering online health services [6], but rather to companies and their medical personnel that treat millions of patients exclusively digital via questionnaires [7]. These platforms replace the in-person doctor's exam with an online one, sometimes via a video or a phone call, but often merely through an online questionnaire.

Traditionally, these platforms have focused on niche topics such as sexual health issues (e.g. Erectile Dysfunction (ED), premature ejaculation) [3,6], Androgenetic Alopecia (AA) [8,9], contraception [10], or teledermatology [11]. Recently, these platforms expanded their range of offerings to include other topics such as obesity [12]. Questionnaire-based DTC prescription platforms have gained interest and expanded access to care, especially in highly focused indications with high treatment barriers. For ED it was confirmed that inconvenience is a treatment barrier, along with shame and perceived lack of discretion. In this indication DTC prescription platforms reduce treatment barriers and ease access for patients to the medical system [13]. Recently published scientific data on this subject suggest that DTC prescription for treatment of AA in men expand access to care and provide patient benefit [9]. Described treatment barriers for AA were low disease burden and long waiting times for an outpatient consultation. Similarly, online platforms for the prescription of contraceptive pills may remove barriers to access to birth control for women who lack time or means of transportation to visit an outpatient doctor [14] without losing medical counseling quality [15]. Another study from Abeck et al. showed that patients often used teledermatology because of functional barriers such as waiting times in the outpatient setting [16]. In addition to the advantage of scalability, the widespread use of questionnaires is likely due to reducing the various indication-dependent emotional and functional access barriers of the traditional health care system, thereby providing access to care.

Questionnaires on DTC Prescription Platforms Represent a New Form of Care Model

It is also essential to highlight that questionnaires in the context of DTC prescription platforms represent a new form of care model. DTC prescription platforms reach their customers by advertising on internet search engines, digital media, and TV commercials in moments of need [13] and offer ways to treat a problem using a questionnaire. Thus, the digital offer is lower threshold and reaches patients earlier than the traditional form of care, where the pain point for the patient must be so great that people want to see a doctor on their own. The prompt entry into care can bring great benefits to patients, especially when it comes to identifying high-risk patients earlier, or taking timely preventive action [17].

On a DTP prescription platform, patient data are collected by means of structured and validated questionnaires on diagnostic criteria, expression/severity of disease (e.g. using the internationally validated questionnaire IIEF-5 for ED), contraindications and interactions. Additional treatment-related characteristics will be collected online after diagnosis and treatment as well as during the course of treatment, using online follow-up or "treatment success" questionnaires. Patients are usually asked about changes in their symptoms after or during treatment, therapy adherence, and treatment-related side effects. The information is reviewed by online physicians, and medical advice, a treatment plan and, if necessary, prescription drugs and / or digital health applications are prescribed. Therefore, the treatment on these platforms is purely digital, without direct doctor-patient interaction, often via a monthly subscription. Higher sensitivity is needed here, as DTC prescription platforms may miss crucial pathologies found by conventional examination in the physician's office. Exemplarily, this has been found in young men with ED [18], although the study population differed from DTC platforms.

On DTC prescription platforms patients being able to choose type and treatment dose themselves, there is often still a need for clarification afterwards. Here, the advantage of an online care model can be titration and stepwise selection of the fitting products. This has been proposed for other indications with a longer history of utilizing digital technologies in patient management, such as diabetes mellitus [19].

How can a Sufficient Quality of Care be Guaranteed in Questionnaire-Based Telemedicine

It is important to examine the individual case for which indication it is clinically appropriate to be treated purely digitally with a questionnaire as the sole diagnostic tool. Exemplary exploratory study compared the quality of contraceptive counseling provided via telemedicine versus in-person visits for the questionnaire based treatment of oral contraception [20]. The following aspects should be considered in the decision-making process by the responsible physicians: 1) Are there validated questionnaires for this indication? 2) Which pathologies can be overlooked, or which misdiagnoses can be made, if no clinical examination is performed, or no adequate diagnostics (e.g. laboratory, ultrasound, etc.) can be performed? 3) Which risks are associated with the prescribed treatment (e.g. abuse potential, dangerous side effects)? On the other hand, consideration should also be given to what benefits might accrue to patients should an indication be treated purely online. Guidelines specific to the treatment of various conditions via telemedicine are needed and could be the basis for evidence-based individual questionnaire based telemedicine [21]. In addition, the quality of the platform determines whether a sufficient quality of care is guaranteed.

We consider the following points to be relevant:

1) Does the questionnaire on an online prescription platform ultimately function as a triage instrument to identify patients at risk? There should be questions to recognize red flags which prompt the patient to a direct contact to a physician

2) How can one ensure that patients are made aware of preventive examinations?

3) Does further treatment of risk factors take place after identification?

4) Are there opportunities for direct patient-doctor communication (e.g. patient-doctor channel/chat, video consultation)?

5) Is there an ID verification for the patients on the platform?

6) How are the platforms connected to the traditional care system?

Summary

Medical questionnaires as a diagnostic and treatment tool have contributed to a relevant improvement of quality in conventional medicine and probably to an even greater extent in telemedical care in recent years. In conventional medicine, they not only have the potential to serve as a quality tool, but can modernize diagnostic and treatment processes leading to more efficient decision-making processes. In telemedicine, there is a growing role for medical questionnaires, a development which was mainly driven by online-DTC-platforms in recent years. In the near future, there will have to be a scientific debate about various aspects how medical questionnaires can be included in the daily work-both in conventional and in telemedicine-and how they can serve to improve medicine in daily practice.

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