



# Patient Education for Overactive Bladder in the Digital Era

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## Abstract

**Purpose of Review** To encourage clinicians to offer appropriate electronic resources to patients with overactive bladder (OAB) and to aid them in deciphering the quality of available online information.

**Recent Findings** Patients are turning to the Internet, including social media sites and podcasts, for further education on their medical conditions. Mobile medical applications also have a role in patient education, symptom management, and treatment. Internet-based interventions using behavioral changes may be a suitable option for patients. However, many resources on the Internet are not validated so physicians are strongly encouraged to play a role in directing patients to appropriate resources.

**Summary** As Internet access and capabilities continue to expand, it will play an increasing role in healthcare, particularly with patient education and treatment. Clinicians should encourage patients to seek out certified sites that contain evidence-based information that aligns with current OAB recommendations.

**Keywords** Urinary incontinence · Female · Surveys and questionnaires · Quality of life · Selfreport · Urinary incontinence, stress · Urinary incontinence, urge

## Introduction

With nearly ubiquitous access to the Internet, patients are increasingly turning towards using this as an educational resource for their medical diagnoses. With the high prevalence of overactive bladder (OAB), many patients are seeking information outside of healthcare offices. In general, OAB affects an older population; however, even the older patients are adept at using search engines to gather information. Nevertheless, it can be difficult for patients to know which information is evidenced based, anecdotal, or incorrect. Guidance from physicians on which sites have scientific merit and represent current management guidelines can be helpful for patients seeking additional information. Some practices are using these resources in the office setting to help convey important

information and allowing the patient an opportunity to ask questions at that time. Over 50% of women with pelvic floor disorders used the Internet in some capacity to learn more about their condition. Although women < 65 years old were more likely to use the Internet for education about their condition, 40% of women over the age of 65 indicated using online resources for medical information [1].

The American Urological Association guidelines, “Diagnosis and treatment of non-neurogenic OAB in adults,” suggest that clinicians provide education regarding normal lower urinary tract function, what is currently known about OAB, and the risks and benefits of various treatment options [2•]. Our goal is to encourage clinicians to offer appropriate resources to patients to help direct their online search and give them the knowledge to decipher evidence-based sites versus sites with inaccurate information. Additionally, we hope to provide an overview of other Internet-based modalities being used in the diagnosis and management of OAB, such as social media, mobile apps, and podcasts.

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## Patient Education Materials for OAB

The immense volume of information available on the Internet can be overwhelming and relies on the patient

to discern the accuracy of the presented information. Of the first 150 results of a Google™ search on female pelvic floor disorders, only 28% of sites had their content certified by Health On Net (a nonprofit organization that evaluates health information sites for quality) and the majority of sites were sponsored by industry [3]. Another study found that nearly 1/3 of websites providing OAB information were advertisements and commercials in direct-to-consumer advertising [4•]. Industries create and maintain these sites, and even pay to have increased visibility of these sites to Internet users, because data suggests that exposure to ads about medical treatment for OAB impacts treatment selection by patients. In a study from Japan, prescription patterns for OAB medications were influenced by online advertisements [5].

An added barrier to patients obtaining accurate information about medical conditions on the Internet may be that the evidence-based sites are often written at or above an eighth grade reading level, meaning that the information in these sites is beyond the reading comprehension of most adults [6, 7]. The National Institutes of Health, American Medical Association, and United States Department of Health and Human Services recommend that patient education materials be written at a fourth to sixth grade reading level to facilitate comprehension. Therefore, it is helpful to provide multiple options of resources for patients to accommodate a range of health literacy.

Although as clinicians we should be providing non-biased information on all available treatment options for OAB, in the instance of patient education, directing patients to industry sites may be helpful. Allowing patients to compare treatment options on their own will ensure the patient is making an educated decision regarding treatment. Patients can also be directed to the HON Code site (<https://www.hon.ch/HONsearch/Patients/index.html>) that will check the certification of the website being viewed [8]. Table 1 includes a list of available patient-directed resources for OAB.

## Internet-Based Interventions

In recent years, digital technology has expanded the potential for Internet-based management strategies. These Internet-based interventions can be particularly useful in providing patients a means to monitor and manage OAB symptoms. Self-management encourages self-efficacy and may lead to improved clinical outcomes giving patients increased confidence in management of their condition, as well as coping skills [9••]. The benefits of Internet-based interventions are flexibility because patients can participate in their home at any time of the day. This may be particularly helpful for older patients who are limited by mobility, either functional (i.e., difficulty leaving the house) or logistical (i.e., no longer have a driver's license). A pilot study of 25 participants aged  $\geq 55$  with OAB, who completed a Self-Management Internet-Based Program for Older Adults with OAB, found that patients have increased knowledge about OAB and improved health-related quality of life scores after completion of the program [10]. By incorporating behavioral strategies and a social networking component, Internet-based interventions may play a larger role in healthcare management particularly as the population becomes more facile in utilizing digital media.

## Social Media

Social media platforms, such as YouTube, Twitter, Facebook, and Instagram, are increasingly utilized by patients to gain medical knowledge, particularly in younger populations [11]. Data from 2018 reveals that 69% of Americans use at least one social media platform and 45–74% of users visit these platforms at least once a day [12]. As a part of the Self-Management Internet-Based Program for Older Adults with OAB mentioned earlier, there was a social networking component to the program. Seventy-two percent of the participants liked posting a question and discussing in a group setting and 92% felt reassured by participating in an online group with a similar condition

**Table 1** List of educational resources on overactive bladder

Resource	Website
Urology Care Foundation	<a href="http://www.urologyhealth.org/educational-materials/overactive-bladder">www.urologyhealth.org/educational-materials/overactive-bladder</a>
National Kidney and Urologic Diseases Information Clearinghouse	<a href="http://www.niddk.nih.gov/health-information/urologic-diseases/bladder-control-problems">www.niddk.nih.gov/health-information/urologic-diseases/bladder-control-problems</a>
American Urological Society Guidelines	<a href="http://www.auanet.org/guidelines/overactive-bladder-(oab)-guideline">www.auanet.org/guidelines/overactive-bladder-(oab)-guideline</a>
American Urogynecologic Society	<a href="https://www.augs.org/assets/2/6/OAB.pdf">https://www.augs.org/assets/2/6/OAB.pdf</a>
Medtronic	<a href="http://www.medtronic.com/us-en/patients/treatments-therapies/bladder-control/about/oab.html">www.medtronic.com/us-en/patients/treatments-therapies/bladder-control/about/oab.html</a>
Allergan	<a href="http://www.botoxforoab.com/about-overactive-bladder">www.botoxforoab.com/about-overactive-bladder</a>
Astellas	<a href="http://astellasresources.com/urology-resources/bladder-matters/eng">astellasresources.com/urology-resources/bladder-matters/eng</a>

[10]. However, little is known about the quality and use of these platforms. In an analysis of the 817 results from Facebook, Twitter, and YouTube of 5 search terms related to FPMRS including “incontinence” and “urge incontinence,” half were medically relevant and only 28% were written by health professionals [13•]. Of those not relevant, 17% were commercial advertisements for incontinence products, law firms, and pharmaceutical or medical device companies. To assess patient preference regarding social networking websites, surveys of 282 women presenting to 10 FPMRS practices in the USA were conducted [1]. The majority of participants had a social networking account and 42% expressed a desire to use social networking websites to learn about their condition. As the millennial generation continues to age, there will be an inevitable increase in use of social media platforms for medical knowledge requiring physicians, practices, and hospitals to ensure availability of high-quality, easily digestible, and shareable educational materials on the platforms most often utilized.

In addition to education, patients have begun to use social media platforms as a source of networking for patient empowerment, emotional support, and information sharing [14]. Emerging data suggests that patients with OAB participate in social networking on a variety of social media platforms. A recent evaluation of 2618 posts from 117 social media sites including Facebook, Medschat, and Yahooanswers found that communities created based on OAB were perceived as more trustworthy than medical providers due to dynamic sources of information, encouragement, and support. This may be due to a sense of community and belonging with peers with similar complaints. Posts commonly focused on confusion about treatment, questions regarding solutions and etiologies for OAB, and personal desperation due to quality of life challenges [15]. The use of social networking for OAB patients has tremendous potential for patients to offer support and peer-to-peer information exchange.

Another social networking forum, Reddit, was reviewed for posts relating to urinary incontinence [15]. Through qualitative analysis, researchers identified six preliminary themes: embarrassment, proper product use, surmounting major life changes, relating to others, improvement over time, and physician alone not being enough. Three concepts were recognized including isolation, gradual acceptance, and self-drive. Data derived from social media platforms can help physicians better understand patient perspectives and expectations, potentially resulting in better patient satisfaction and outcomes.

While the use of social media has mostly positive implications for patients, it also has the potential for dissemination of poor-quality information, fear-mongering, and misuse of advertising. This area needs further study into the type of information dissemination and the possible development of moderated groups or platforms.

## Podcasts

Podcasts, or episodic audio recordings that can be downloaded or streamed, are a new form of digestible material available on smartphone- and web-based applications. As of 2019, more than half of all Americans have listened to a podcast with a third reporting listening to one within the last month and nearly a quarter within the past week [16]. Due to their easily accessible nature, podcasts have become a popular form of entertainment and education resulting in the development of a wide variety of topics and interests freely available on smartphone-based apps such as iTunes, Stitcher, and SoundCloud. This is also a medium that can be utilized to offer patient education on common topics such as OAB. Currently, a search in iTunes for the terms “overactive bladder” and “urinary incontinence” reveals 109 unique podcast episodes by a variety of hosts. The use of podcasts for knowledge dissemination has risen in specialty societies such as the Society for Urodynamics, Female Pelvic Medicine & Urogenital Reconstruction, American Urogynecological Society, American Urological Association, and the Urology Care Foundation. Additional academic centers such as the Mayo Clinic and the Quillen College of Medicine offer podcasts as well as the Journal of American Medical Association. Merck also offers a litany of episodes focused on patient symptoms.

Similar to mobile medical apps, podcasts have little regulation or oversight for quality content. To assess quality, guidelines have been suggested evaluating credibility, content, and designer [17].

## Mobile Medical Applications

In 2017, 325,000 mobile health applications were available with nearly 50% of smartphone users downloading at least one mobile health application [18]. The use of smartphone-based applications by patients has been noted for a variety of medical conditions including diabetes, obesity, smoking and alcohol addiction, psychiatric co-morbidities, COPD, sickle-cell disease, and dementia [19]. However, in OAB, there is limited relevant data on available apps. In a 2018 search of applications available in the Apple iTunes store, 23 were found to be relevant to female pelvic medicine and reconstructive surgery, patient-centered, and accurate [20•]. Specifically, some such as “Squeezy,” “KegelNation,” and “PelvicFloorFirst” provided education on pelvic floor exercises, while others, such as “LeakFreeMe,” focused on urinary incontinence education, resources, and treatment discussion. These apps tended to vary in comprehensiveness based on their evidence of health promotion, patient communication, health tracking, and medication reminders. Additionally, only half of reviewed applications offered a reference for information provided. Despite their availability, it remains unclear

how often patients utilize these applications and to what degree they find them useful.

Some mobile medical applications have been created to assist physicians in collecting patient data such as voiding diaries and questionnaires with the ability to monitor symptoms over time. Development of new applications used in conjunction with telemedicine, remote or video visits, and at home symptom monitoring is ongoing. Comiter et al. recently developed a smartphone-based application with the ability to collect urine flow rates based on the sound, in the convenience of their own home [21]. Blavias et al. have developed an app to help quantify a patient's bladder condition prior to a patient's first visit to help triage workflow to either remote or in-office visits [22]. Emerging innovation in telemedicine may lead to increased use of mobile medical apps to collect data in OAB patients such as voiding diaries, validated questionnaires, and simplified communication between patients and physicians to manage follow-up. Additionally, many patients prefer a mobile version over a paper questionnaires [23].

A subset of mobile medical apps specifically those that are used as part of or are transformed into regulated medical device are subject to FDA regulation. However, applications posing minimal risk such as symptom, disease, or medication tracking, communication with medical professionals, or educational information are not required to submit pre-market review applications [24]. Additional ongoing efforts have been made by the FDA to improve the regulation process to promote technological innovations and ensure that mobile medical apps regulated by the FDA are safe and effective for patient consumption [25].

Despite FDA oversight, several applications are unregulated and content quality is often unclear in areas such as authorship, references, conflicts of interests, funding, and non-biased coverage. The ability of patients to read, understand, access, and use the information provided as well as user security is an additional area of concern. In order to offer guidelines for mobile health apps, a collaborative effort with 2 dozen organizations including the American Medical Association and the American Heart Association was undertaken to develop guidelines for mobile health apps ([xcertia.org](http://xcertia.org)). These guidelines evaluate apps based on operability, privacy, security, content, content, and usability. Alternatively, app content can be evaluated using qualitative content analysis with comparison to clinical guidelines or other evidence-based protocols. Usability testing can be done using standardized guidelines from the International Organization for Standardization [26], laboratory based or field testing, or analysis of user ratings and reviews [27]. To simplify application review, apps and private companies exist to evaluate apps for content, operability, and security. (Table 2).

## Conclusion

Education materials can be invaluable to helping patients understand and retain key information pertaining to their diagnosis and it is important for clinicians to direct patients to appropriate resources. Most websites containing information on OAB have not been certified or validated and are industry sponsored. It is important for clinicians to direct patients to evidence-based, non-biased sites.

**Table 2** Digital applications that evaluate existing applications

App or organization	Developer	Objective	Apps grading	Other available tools
RxUniverse	Icahn School of Medicine at Mount Sinai/Responsive Health	Provide prescribers curated apps based on clinical evidence ( <a href="http://rxuniverse.com">rxuniverse.com</a> )	Based on evidence-based reviews of efficacy and usability	Health education Patient surveys Remote monitoring Integrated wearables Telemedicine Appointment Scheduling Clinical trials
AppScript	IQVIA Technology Services Limited	Allow healthcare providers to recommend apps, devices, and content ( <a href="http://appscript.net">appscript.net</a> )	Professional, patient, functional, endorsement, developer, and clinical ratings	Track app usage and collect feedback
Social Wellth	–	App curation ( <a href="http://socialwellth.com">socialwellth.com</a> )	App curation usability and testing process based on clinical evidence, content quality, cost, popularity, appeal, and usability. Includes an adaptive privacy and security scan	Apps receive a mWellth certification seal

## Compliance with Ethical Standards

**Conflict of interest** The authors declare that they have no conflict of interest.

**Human and Animal Rights and Informed Consent** The article does not contain any studies with human or animal subjects performed by any of the authors.

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