Review Article

E-Psychiatry: Uses and Limitations

Amin A. Muhammad Gadit

Department of Psychiatry, Memorial University of New foundland, Canada.

Abstract

The importance of using e-mail as a mode of communication between physicians and patients is becoming more common and popular because of its speed and effectiveness. Though little research has been done on the use and impact of e-mail in psychiatry but evidence is available about its frequent use both by the patients and the psychiatrists. This review paper attempts to examine the importance of this mode of communication, with its risks and threats. The inherent limitations of the message transfer method and the magnitude of its usage with benefits and hazards, both for the doctors and patients, will also be analyzed. The recommended guidelines concerning its usage are also present. It is concluded that though e-mail communication is fast gaining popularity, its impact on psychiatry is yet to be seen keeping in view the importance of direct communication with patients in the practice of psychiatry. It appears that with the development of future technologies, e-psychiatry will become relatively risk free and a source of help for the general health care system.

Introduction

E-mail has become a very important tool for communication at all levels. The fact that the world has become a global village, is closely related with faster and effective communication. Medical professionals also use e-mail and internet because of its uniqueness of speed and its ability to allow a synchronous communication and rapid message transfer, making it a hybrid of the telephone and the written letter.[1] It is said that this mode of communication has practically revolutionized the health care delivery system to a significant extent.

Updated observations have identified the need for the doctors to remain aware of its potential dangers. This can have an impact on the therapeutic relationship and when dealing with electronically delivered diagnoses of confidentiality and privacy may be treated.[2]

Despite increased usage of e-mail between patients and physicians, little has been written about its use in psychiatry. Not much has been commented on how the clinicians view and use e-mail communication, or what its impact it has had on medical practice.[3]

E-mail - How It Works

There are various paths taken by an email message on its route from the sender to the recipient.

Sending an E-mail Message

Sending of an email message is analogous to the sending of a letter, then computers are "post offices", and the "Simple Mail Transport Protocol" (SMTP) is the "procedure" by which a post office receives a letter or sends it off to another post office closer to the ultimate recipient. SMTP is used by any program that sends an email message, to deliver that message to a "post office" for relaying it to its destination.

For most senders, there are only two significant ways to send an e-mail - via a web-based interface or via an "e-mail client" program, such as Microsoft Outlook or Eudora, running on their personal computer.

In the second case, to send an email, one has to specify a "post office" for these programs to connect to such that they can send messages. This "post office" is known as "SMTP server". The personal computer talks directly to the SMTP server using the computer protocol (language) known as SMTP.

In the case of Web Mail, the personal computer communicates with a Web Mail web server using a web connection (speaking the "language" HTTP - "Hypertext Transfer Protocol"). The Web Mail server itself then contacts SMTP server, passing the message to the first step in the delivery process.

Delivery of e-mail from your SMTP Server to the recipient's SMTP Server

When an SMTP Server receives an email message addressed to someone whose email box is not located in that SMTP Server, it must "relay" that email message to another SMTP server closer to the recipient. This process is known as "e-mail relaying".

There are many scenarios that govern the path an e-mail message may take from the sender's to the recipient's SMTP Server. Some of these include:

1. The sender's server can contact the recipient's server and send the e-mail message directly.

2. The sender's server cannot contact the recipient's actual SMTP server for some reason (maybe the recipient's server is busy, down, not accessible on the Internet, or there is some other problem with the Internet between the servers). In this case, the sender's server tries to contact and deliver the message to the recipient's first backup server.

3. The sender's server may not be able to contact the recipient's actual SMTP server or its first backup server. In this case, the sender's server tries to contact and deliver the message to the recipient's second backup server.

4. The sender's server may be busy or may not be able to connect to the Internet or any of the recipient's servers. In this case, it will queue the message and try to send it later. It will keep retrying periodically for several days until it succeeds in sending or it will give up.

Security Threats to E-mail Communications

There are many of the common security problems involved in communications by e-mail:

Eavesdropping: The Internet is a big place with a lot of people on it. It is very easy for someone with access to computers or networks through which the information is traveling to capture this information and read it.

Identity Theft: If someone can obtain the username and password that we use to access email servers, they can read email and send false email messages.

Invasion of Privacy: If we are very concerned about our privacy, we will be concerned about the possibility of "unprotected backups". We may also be concerned about the recipients of SMTP email recipients being able to tell what IP address our computer has. This information may be mis-used to locate our city or and in some cases to find our address. This is not an issue with Web Mail, POP, or IMAP, but it is important when sending an email, securely or insecurely, from any email client over SMTP.

Message Modification: Anyone who has system administrator permission on any of the SMTP Servers, can read your message, and delete or change the message before it reaches its destination.

False Messages: It is very easy to construct messages that appear to be from someone other than who they are actually from. Many viruses use this facility to propagate themselves. In general, there is no way to be sure that the apparent sender of a message actually sent the message - it could just as easily be fabricated.

Message Replay: Just as a message can be modified, messages can be saved, modified, and re-sent later. This could result in multiple messages and thus taking actions that were not requested.

Unprotected backups: As messages are stored in plain text on all SMTP Servers, any backups of these servers' disks may also contain plain text copies of messages. As backups can be kept for years and can be read by anyone with access to them, messages could still be lying around in insecure places.

Repudiation: Because email messages can be forged, there is no way for us to prove that someone sent a particular message. This means that even if someone DID send a message, they can successfully deny it.

Legal status of e-mail in health care

There can also be medical liability risks related to providing "medical care" by e-mail or Internet communication. Before medical liability can exist, one must demonstrate that a patient-physician relationship has been formed. The establishment of the patient-physician relationship, or "duty," has not been well clarified when using e-mail or the Internet exclusively to provide advice in the absence of any physical contact. Arguably, an analogy can be drawn to the situation in which a physician provides general information on a local radio or television broadcast. In such cases, in which information is general in nature and not meant to diagnose or treat a specific individual, there is no relationship or duty established. Although case law has not been well established, there have been concerns raised as to whether a patient-provider relationship would be initiated when advice is given in an online forum ("bulletin board" or "chat room"). However, in cases in which there is a previous patient-physician relationship or in which a Web site is created to solicit patient queries, the risk of medical liability is greater.

Failure to meet patients' service expectations or follow one's own office policies and procedures can result in liability. The situation in which a physician fails to respond in an appropriate time frame to a patient e-mail, resulting in an adverse outcome, for example, might present a liability risk, emphasizing the need to educate patients about the appropriate use of e-mail and about appropriate response time expectations. Patients must be instructed and must understand when it is appropriate to escalate queries by telephoning the office directly. Although e-mail is widely used, neither the legal nor medical liability communities have significant precedents for dealing with potential e-mail communication risks.[4]

Usage

An e-mail message is similar to a letter. E-mail typically is used for conversations that are not urgent and for dialogues that are expected to continue over a period of time. The structure of e-mail eliminates interruptions associated with telephone conversations or electronic pagers.[5] It also permits asynchronous communication,

which can benefit both the sender and the recipient in our busy society.

There are several potential benefits for patients and physicians who use e-mail. Patients may feel more comfortable in addressing complex, sensitive, or personal issues if the interactions are conducted in writing rather than face-to-face. The use of e-mail allows time to construct a thoughtful, structured message. Also, e-mail is largely self-documenting, which is crucial for the integrity of the medical record.[6] This concept was reflected by American Medical Association.[7] These factors help make e-mail a convenient means of communication[6] which makes it attractive to some physicians, despite the fact that currently they are rarely compensated for e-mail communication, or are compensated at rates significantly lower than for office visits.[8] Finally, e-mail can solve issues related to large distances or patients' inability to travel to receive follow up care.

Cautions

However, there are potential drawbacks to the use of e-mail, specifically when exchanging sensitive information such as that on personal health. For example, concerns may be raised regarding the authenticity of the parties involved, the validity of the information that is exchanged, the disparities between both parties' expectations, the standard of care, and the preservation of the patient-physician relationship.

For many e-mail users, the authentication of parties is particularly problematic both in terms of determining whether the person requesting medical care is in need of it, and whether the provider of medical services is a licensed physician. From a patient perspective, it is difficult to determine whether information provided is an automated response or whether it is a personalized response from a qualified health care professional.

It should be noted that similar concerns may arise in the context of face-to-face encounters, or when other means of communication (telephone, fax) are used. Moreover, it should be acknowledged that all communication technologies currently in use can be misused, and that there are always some risks of misrepresentation or fraud.

Nevertheless, communication via e-mail deserves to receive careful consideration because it is a relatively new practice, and all its limitations are not yet fully understood. With proper safeguards, it is likely that e-mail will become an accepted form of communication between patients and physicians that raises no greater concerns than today's telephonic or in-person encounters. Until these safeguards are enunciated, however, patients and physicians should proceed with some caution regarding the appropriate boundaries for this form of communication, since legal guidance is evolving rapidly and no single set of voluntary guidelines has received widespread endorsement.[9]

Limitations

There are several important issues which need to be carefully evaluated when considering the use of e-mail consultation

- E-mail is not entirely secure and may be viewed by other people

- Employers may view e-mails sent from your work-provided e-mail system

- E-mail should not be used for emergencies or time-sensitive issues where you must receive a reply immediately.

Precautions

- (If a response is not prompt, the patient should call the office and receive instructions on how to obtain help. The patient should always keep copies of e-mails they receive from the health provider)

- The provider will keep copies of the e-mail that a patient sends

- Patient e-mails will only be routed to other providers or staff when it is necessary to address a patient's specific concern.[10]

Magnitude

E-mail technology can significantly affect the process of and expectations for communications between the clinician and the patient. The unique characteristics and attributes of computer-based communications can ultimately enhance outcomes for patient well-being if the clinician is informed, proactive and avoids certain potential pitfalls related to the technology and its inclusion within the pattern of care.[1]

It was noted that use of e-mail by doctors was frequent but varied. A survey in the West Midlands among 300 general practitioners (GPs) selected randomly and 224 hospital doctors revealed that overall, 65% of the 314 respondents used e-mail, but 84% of hospital doctors used email compared to 55% of GPs. E-mail was used mainly for communication with friends and family (92%) and work colleagues (61%), with only 7% using e-mail for transmitting clinical data and 3% to send or receive referrals. E-mail usage showed a significant trend with respect to age, being highest in the 20-29-year age group and lowest among those aged over 60 years. Over 60% of respondents felt that e-mail was not secure for the transfer of patient data. However, 90% felt that they would be using e-mail in a clinical setting in five years' time. Despite the

relatively high use of e-mail for social communication, work-related use by doctors was low.[11]

In a study[12], physicians identified through a professional internet information portal, completed a survey, on an assessment of satisfaction for using e-mail with patients. The most important reasons for using e-mail with patients were "time saving" (33%) and "helps deliver better care" (28%). The other reason was "patient requested" (80%), among those who were not satisfied (p <.01). Dissatisfied physicians reported concerns about time demands, medico legal risks, and ability of patients to use e-mail appropriately. Although the majority of these "vanguard" physicians reported benefits, some did not recommend that colleagues adopt this new technology. Increasing integration into practice to enhance time-saving aspects and improve patient education, might lead to more sustained use of this promising communication tool.

In an analysis of e-mail communication in psychiatric practice there is a difference between brief communications and extensive e-mail communications. Brief communications may involve appointment scheduling, medication checks, and even an "emotionally needy patient with low tolerance for intervals between appointments who may be encouraged to commit thoughts to the word processor and e-mail them as an alternative to frequent telephoning. More extensive e-mail communications can blend into therapeutic, dynamically complex, and boundary-related issues that may raise medico legal and other concerns that not only can complicate the treatment but also can potentially put therapists, patients, and/or the treatment at risk. E-mail messages lack the subtle, nonverbal, emotional cues that are so important in the psychotherapeutic practice of psychiatry. While other specialties have been moving forward in trying to define specialty-specific guidelines for e-mail communication between physicians and patients, psychiatry has just begun to enter the conversation.[13]

The Internet has accelerated the psychiatrists' access to new research findings and information pertinent to clinical practice. It has eliminated distance barriers and offered psychiatrists and the general public equal access to scientific articles, clinical trials, and guidelines. The literature shows that the general public is using the Internet to obtain information and to a lesser extent, to communicate with health care professionals. In terms of health outcomes, the effectiveness of patient on-line access to information is still uncertain, and further research is necessary. Although physicians have embraced on-line journals, further work is required before they embrace on-line CME. The Internet has developed to a point where it is important for psychiatrists to understand the issues and pitfalls in its use,

to be able to access the resources available, and to be in a position to mentor patients who want to research their condition further.[13]

Guidelines and Recommendations

Informed Consent

Before e-mail communication begins, good practice suggests that clinicians provide informed consent forms and obtain signatures on them. The consent form can list communication guidelines, describe what is and is not appropriate e-mail content, explicate limitations on the privacy of the communication, and state when phone calls or visits to the emergency room should take precedence over e-mail.

Explicit statements regarding what is and is not an emergency are needed. Suicidal and homicidal intent should specifically be mentioned in this regard. Consent forms should also include statements exonerating all parties in the case of technical failure.

Guidelines for Physician-Patient Electronic Communications[14]

Communication Guidelines

a. Establish turnaround time for messages. Exercise caution when using e-mail for urgent matters.

b. Inform patient about privacy issues.

c. Patients should know who besides the addressee, processes messages during addressee's usual business hours and during addressee's vacation or illness.

d. Whenever possible and appropriate, physicians should retain electronic and/or paper copies of e-mails communications with patients.

e. Establish types of transactions (prescription refill, appointment scheduling, etc.) and sensitivity of subject matter (HIV, mental health, etc.) permitted over e-mail.

f. Instruct patients to put the category of transaction in the subject line of the message for filtering: prescription, appointment, medical advice, billing question.

g. Request that patients put their name and patient identification number in the body of the message.

h. Configure automatic reply to acknowledge receipt of messages.

i. Send a new message to inform patient of completion of request.

j. Request that patients use auto reply feature to acknowledge reading clinicians message.

k. Develop archival and retrieval mechanisms.

l. Maintain a mailing list of patients, but do not send group

mailings where recipients are visible to each other. Use blind copy feature in software.

m. Avoid anger, sarcasm, harsh criticism, and libelous references to third parties in messages.

n. Append a standard block of text to the end of e-mail messages to patients, which contains the physician's full name, contact information, and reminders about security and the importance of alternative forms of communication for emergencies.

o. Explain to patients that their messages should be concise.

p. When e-mail messages become too lengthy or the correspondence is prolonged, notify patients to come in to discuss or call them.

q. Remind patients when they do not adhere to the guidelines.

r. For patients who repeatedly do not adhere to the guidelines, it is acceptable to terminate the e-mail relationship.

Medico legal and Administrative Guidelines[5]

Develop a patient-clinician agreement for the informed consent for the use of e-mail. This should be discussed with and signed by the patient and documented in the medical record. Provide patients with a copy of the agreement. Agreement should contain the following:

a. Terms in communication guidelines

b. Provide instructions for when and how to convert to phone calls and office visits.

c. Describe security mechanisms in place.

d. Hold harmless the health care institution for information loss due to technical failures.

e. Waive encryption requirement, if any, at patient's insistence.

f. Describe security mechanisms in place including use of a password-protected screen saver for all desktop workstations in the office, hospital, and at home.

g. Never forward patient-identifiable information to a third party without the patient's express permission.

h. Never use patient's e-mail address in a marketing scheme.

i. Do not share professional e-mail accounts with family members.

j. Do not use unencrypted wireless communications with patient-identifiable information.

k. Double-check all "To" fields prior to sending messages.

l. Perform at least weekly backups of e-mail onto long-term storage. Define long-term as the term applicable to paper records.

In order to send secured e-mail message, following four steps are helpful:

- Send an Encrypted Message

- Prove You Sent A Message

- Sign a Message

Encrypted, Signed Messages: The most secure form of communication is to first add a signature to the message and then to encrypt the message plus signature with the recipient's public key. This combines all of the benefits of all of the techniques: security against eavesdropping and unexpected storage, proof of sender, and proof on message integrity.

Future Implications

Electronic healthcare will significantly alter the way physicians practice medicine. Electronic medical records with specialized software programmes can increase the quality of patient care, reduce unnecessary medical tests, and directly connect with pharmacies to transmit prescriptions. Electronic communication can allow physicians to respond to patients' clinical concerns and questions, and Internet access can provide physicians better access to literature. Nevertheless, there is significant physician hesitance toward adopting medical computerization: patient e-mail can potentially overload physicians with extra work, web sites can direct patients to poor medical information, the computerized interface can degrade the patient-physician relationship, and health regulations can create concern over electronic privacy issues. The finances of e-health appear promising, yet conflicting studies create uncertainty. However, if managed appropriately, the potential disadvantages of e-health can be minimized, and the benefits of e-health in clinical practices can be obtained.[15] E-psychiatry is inevitable in future. It will be particularly useful in pre-consultation history-gathering and in the administration of paper-and-pencil psychological tests, questionnaires and rating scales before a first psychiatric appointment. It will help in the provision of services to people who speak languages known to only a small subset of clinicians and consultations with sufferers of agrophobia.[16]

There is an avenue for a strong therapeutic alliance if e-mail communications are maintained with all cautionary measures at the therapist and client's end and can go a long way in clinical improvement specially in areas where personal access is difficult or impossible and that is the reason telemedicine is gaining popularity the world over.

Conclusion

Though mental health professionals use e-mail

liberally, the full impact of e-mail technology on psychiatry remains to be seen. Because of the importance of nonverbal signals in psychiatric practice, e-mail communication should never take the place of face-to-face contact. Nevertheless, e-mail may add efficiencies to psychiatric practice, and, with proper guidance, it may augment current modes of treatment. Studies are warranted to delineate systematically the clinical problems and situations in which e-mail communication might further enhance clinician-patient relationships and foster better care. At the same time, appropriate cautions must be exercised to safeguard patient's privacy and maintain clinical practice standards as we gradually incorporate these new technologies into our daily activities.[3] In a country like Pakistan, use of e-mail communication in psychiatry is becoming frequent, used by literate patients mainly as patients with either low educational background or not literate with computers are not being able to obtain benefit. There is a fertile ground for studies on e-psychiatry.

References

1. Day J. E-mail: a new management parameter. J Contemp Dent Pract. 2001,2: 72-81.

2. Steinberg CS. Communicating with patients via e-mail: is it a good idea? J Am Optom Assoc. 1999;70:599-601.

3. Madhavi R Patt et al. Doctors who are using e-mail with their patients: a qualitative exploration. J med internet res. 2003;5:1-11.

4. Shapiro DE, Schulman CE. Ethical and legal issues in e-mail therapy. Ethics Behav. 1996:6:107-24.

5. Kane B, Sands DZ. Guidelines for the clinical use of electronic mail with patients. J Am Med Inform Assoc.1998;280:1333-5.

6. De Ville K, Fitzpatrick J. Ready or not, here it comes: the legal, ethical and clinical implications of e-mail communications. Sem Paed surg 2000:9:24-34.

7. Board of trustees, American Medical Association.2002. Report 24: Physician discretion regarding the inclusion of electronic communications in the medical record. 2000.

8. Carrns A. Employers urge doctors to make "visits" by e-mail, 2001.The Wall Street Journal 2000:23.

9. Bovi M. Ethical guidelines for the use of electronic mail between patients and physicians. Am J Biotech. 2003:3:W 43-W47.

10. Whiting Bay Family Medicine's policy on e-mail communication with patients, adopted in 2000.

11. Evans L, Nicholas P, Hughes-webb P, Fraser CL, Jamalapuram, Hughes B. The use of e-mail by doctors in the West Midlands. J Telemed Telecare 2001,7:99-102.

12. Houston TK, Sands DZ, Nash BR, Ford DE. Experiences of physicians who frequently use e-mail with patients Health Commun . 2003:15:515-25

13. Styra R. The internet's impact on the practice of psychiatry. Can J Psychiatry, 2004:49:5-11.

14. Guidelines for physician-patient electronic communications: www.ama-assn.org/ama/pub/category/2386.html. accessed on 29,4,2005.

15. Podichetty V, Penn D. The progressive roles of electronic medicine benefits, concerns and costs. Am J Med Sci,2004,328:94-9.

16. Seeman MV. E-psychiatry: the patient-psychiatrist relationship in the electronic age. CMAJ, 1999:161;1147-9.