

# Exploring Validity and Reliability of Internet Infidelity Questionnaire among Internet Users in Iran

Roghieh Nooripour,<sup>1</sup> Mohamad Reza Abdi,<sup>2</sup> Saeed Bakhshani,<sup>3</sup> Mostafa Alikhani,<sup>4,\*</sup> Simin Hosseinian,<sup>1</sup> and Taghi Pour Ebrahim<sup>5</sup>

<sup>1</sup>Department of Counselling, Faculty of Education and Psychology, Alzahra University, Tehran, IR Iran

<sup>2</sup>Family Counseling, Avaye Omid Counseling Center, Rasht City, IR Iran

<sup>3</sup>Zahedan University of Medical Sciences, Zahedan, IR Iran

<sup>4</sup>Psychiatry Department, Substance Abuse Prevention Research Center, Kermanshah University of Medical Sciences, Kermanshah, IR Iran

<sup>5</sup>Faculty of Education and Psychology, Department of Counselling, Shahid Beheshti University, Tehran, IR Iran

\*Corresponding author: Mostafa Alikhani, Psychiatry Department, Substance Abuse Prevention Research Center, Kermanshah University of Medical Sciences, Kermanshah, IR Iran. Tel: +98-8338276683, Fax: +98-9119057354, E-mail: M.alikhani18@yahoo.com

Received 2015 November 23; Revised 2015 December 26; Accepted 2016 January 05.

## Abstract

**Background:** Today the internet has become a part of our everyday life; communicating online has made it easy for people to begin and develop interpersonal relationships. Certain problems, however, appear to result directly from relationships online. One of these problems which has been prevalent among couples and families is extramarital internet relationships or internet infidelity. Study of this phenomenon in Iranian users' needs a tool for evaluation.

**Objectives:** This study has been done to validate the internet infidelity questionnaire among internet users in Iran.

**Patients and Methods:** The internet infidelity questionnaire was translated and verified by experts and was conducted via the Internet on 481 Iranians (255 males) who were members at Iranian sites and chatrooms and were selected through sampling.

**Results:** Exploratory factor analysis was conducted on obtained data, resulting in a Persian internet infidelity questionnaire with 43 items as well as three main factors.

**Conclusions:** This internet infidelity questionnaire is a valid and reliable tool to assess the betrayed partner of internet infidelity. This questionnaire can justify 65.89 percent of common variance.

**Keywords:** Internet, Iran, Questionnaires, Validity-Reliability

## 1. Introduction

Today, the Internet is an important part of our daily life. The development of interactive Internet allows people around the world to easily communicate with each other (1). Despite the fact that this public virtual space facilitates interaction between individuals, it has become associated with concerns and problems (2, 3). The many couples involved in extramarital internet relationships and online infidelity is the context in which researchers consider this problem (4, 5).

According to couples, the difficulty of such relationships has led them to seek help from therapists and counselors. Virtual internet relationships, it seems, are as important and significant as romantic and intimate relationships in the "real" world (6, 7).

An Internet relationship is defined as a sexual and romantic relationship that was started online and continues through other electronic communication such as email, virtual communities like chat rooms, interactive games and news groups (8).

This virtual relationship becomes unfaithful when an individual engages in secretive, romantic or sexual behavior with an internet partner, in spite of being in a committed relationship with someone in the real world (9).

A perspective of postmodernism requires that the primary frameworks of our psychological life be considered in order to investigate and treat infidelity. According to this view, reality is defined based on self-reference and people cannot fully understand each other's subjective experience. So, by this definition, the internet infidelity phenomenon takes on a special emphasis because the isolation of each of the spouses emphasizes the belief that each has their own individual experience with their own definitions of who they are, without regard to the other (10, 11).

Previous studies have designated betrayal as either sexual and emotional, or online. But this study has found that online infidelity can be included as real sexual and emotional infidelity as well (12-14).

In foreign studies, tools have been very limited for the investigation of this phenomenon. A review of studies suggested that among the tools used, the Internet Infi-

delity Questionnaire of Docan-Morgan and Docan (15) has high reliability and validity as an investigative research tool, and was found to be reliable and valid in many foreign research studies. The items in this questionnaire consider multiple behaviors such as Internet chat, love and sex conversations in a virtual environment, and exchange of personal information with other internet users in virtual space. Those behaviors that were not considered betrayal by internet users are ranked from 1 (low severity of behavior) to 6 (highest level of infidelity). Therefore, a high score on this scale indicates a negative attitude toward the partner's internet behavior. The Internet Infidelity Questionnaire (IIQ), was used by Alge (13) to assess attitudes toward infidelity according to several demographic variables and were based on the scale "Internet activities of infidelity" of Docan-Morgan and Docan (15).

Because of the wide range of Internet behaviors, Docan-Morgan and Docan found that identifying these behaviors, is a necessary (15) in order to develop a questionnaire for their purposes. For the first time in an open-ended interview, they asked people to clearly state and define the particular Internet activities that are considered betrayal. The participants identified 294 acts of online infidelity. Then all the responses were classified into six categories. Virtual sex; flirtation; emotional connection; posting private videos or photos; intellectual connection; exchanging personal information; and engaging in entertainment such as internet gaming with each other. Based on these finding a 65-item questionnaire was prepared.

In the next step, the questionnaire was given to some professors specialized in the field of virtual relationships to examine its validity. Some of the items were omitted because of duplication. The final questionnaire included 44 items was designed and then given to the participants for final analysis.

Factor analysis led to the extraction of two factors after conducting a sample study of 208 people. The first factor was superficial/non-formal relationships such as talking about news and everyday subjects, sports, telling jokes and sending friendly emails to the online partner.

The second factor was targeted/busy activities such as virtual emotional or sexual relationships with an Internet partner, sending pictures and personal videos, flirting and expressing excessive intimacy to the online partner.

In the questionnaire of Docan-Morgan and Docan (15), subjects were asked to imagine their partners committing any one of these acts in secret, then express their attitude toward each of these actions on a scale of 1 (lack of a betrayal) to 6 (the highest betrayal). Also, single subjects were asked to complete the questionnaire with an imaginary partner. Most of the items in Docan-Morgan and Docan's questionnaire (15) were related to activities that took

place in chat rooms. However, according to research literature on internet relationships, chat rooms are only one of the means for users to meet each other online, hence the term "chatroom" in the internet infidelity questionnaire was changed to "Internet" in the Alge's study (13).

For example, "sending personal photos to someone met in chat rooms" was changed as follows: "sending personal photos to the individual who met on the Internet." This principle has been adhered to in the Persian translation of this study's questionnaire. Factor analysis of the internet infidelity questionnaire (2009) has led to the extraction of 6 factors, which include: (1) Initiating relationships sending emails and superficial internet conversations); (2) Having intimate relationship (virtual sex and romantic self-disclosures); (3) Viewing sexuality explicit material (watching and providing access to porn sites); (4) Showing attraction (flirting and self-disclosures); (5) Seeking advice and (6) Seeking interaction (loading personal information on sites). Overall, 6 factors of the Alge's study (13) could explain 70% shared variance and the amount of variance explained by each of the six factors, 1 through 6, respectively, were as follows: 49%, 10%, 4%, 3%, 2%, and 2%.

A suitable tool, however, is one of the most important issues in studying any phenomenon. Until now, there have been no validated questionnaire tools about internet infidelity. This present study, The internet infidelity questionnaire, has been validated by Iranian users and designed based on the Docan-Morgan and Docan scale. and also provided the basis for the theoretical explanations of this issue (15).

## 2. Patients and Methods

The population in this research includes all of Iranian users who were member of Persian sites and chatrooms during this investigation. In this study, 605 participants were selected by the convenience sampling method, of which 124 people were excluded from the final sample because questionnaires were filled out incompletely. The final sample for the study included 481 internet users (255 males and 226 females) between the ages of 18 and 65 years old with an age mean of 27.14 (SD = 5.814). Table 1 shows the demographic characteristics of participants in this study (i.e. gender, age, education, marital status, etc.). Since the recommended minimum sample size for each shall be equal to 5 to 10 the current study was conducted on a sample of 481 people.

The internet infidelity questionnaire (IIQ) has 43 items scaled to measure each individual's attitude toward the partner's internet behaviors on a 6-point Likert scale, as previously described. The questionnaire was translated

**Table 1.** Demographic Characteristics of Participants

Gender	Number	Mean	SD
Female	226	-	-
Male	255	-	-
Age	-	27.14	5.814
Marital status	-	-	-
Single	355	0.74% participants	
Married	101	21% participants	
Divorced	25	5% participants	
Mean of duration of weekly internet use	-	14.82	11.17

into Persian by the authors and the final Persian questionnaire of 43 items has been loaded on a web site to perform further analysis after verification by seven professors of psychology and counseling.

Then web address were sent with a short message based on the aim of the research by internet users who subscribe to the Iranian sites and chat rooms. The users' response was sent to another URL after completing the questionnaire and all data were analyzed by SPSS software. In the present study, subjects were asked to imagine their partners had committed any one of these acts in secret. Then they were asked to rate their attitude toward each of these actions on a scale from 1 (lack of a betrayal) to 5 (the highest betrayal).

### 3. Results

The data were factor analyzed. Bartlett and KMO were used in order to assess the adequacy of the sample and provide the necessary conditions for the implementation of factor analysis.

In this study, Bartlett's test was used to assess the significance of a correlation matrix of available data, which was significant and the KMO test, which indicates the effectiveness of the scale's sampling of content, obtained 0.947. This indicates suitability of the data for later factor analysis. Forty-three items of the online behavior questionnaire were investigated by an exploratory factor analysis with a principal components analysis.

The cut-off point used in this analysis was 0.30, after drawing the Scree plot to evaluate the results' adequacy and three factors were selected with a higher equity. As shown in Table 1, three factors with values up 1 can explain 65.89% of shared variance.

The Varimax rotation method was used to determine the dimensions of the infidelity on the Internet and the increasing influence of derived factors. Varimax rotation

is suitable when the study is exploratory with a new questionnaire. By examining the content of three items factors were obtained with respect to the meaning of any factor, previous research, and faculty members' ideas. The first factor was called "friendly activities"; the second factor "emotional activities," and the third factor, "sexual activities".

The load for each of the three mentioned factors are as follows: 29.11, 21.98, 14.79 and 65.89% in the total explained shared variance.

The first factor (friendly activities) with 22 items, includes activities like chatting, friendly and regular dialogue with online partner, talking about everyday issues, problems and news, ordinary and friendly e-mails, playing online games and seeing personal information. The second factor (emotional activities) with 9 articles, includes activities such as expression of love and emotional feelings toward the online partner, sending e-mails every day about regular issues to person, sending personal photos, having plans to meet with person, and putting personal information on the Internet, and finally, the third factor (sexual activities) with 12 items, which included activities like having virtual sex with online partner, sending emails and immoral and unpleasant greeting cards, getting in touch through the Internet with a spouse or friend who already has relationship with person, watching pornography on the Internet, showing own image by webcam and discussing sex life with online partner, and sending personal nude photos. Load factor was 0.52 to 0.81 for the first factor items, 0.40 to 0.81 for the second factor, and 0.439 and 0.81 for the third factor. Three load factors have been shown in Table 2.

After obtaining the items of each factor, Cronbach's alpha coefficient was calculated to determine the various elements of the questionnaire and its subscales' internal consistency. Cronbach's alpha coefficient was obtained for three "friendly activities," "emotional activities," and "sex-

**Table 2.** Total Variance in Three Factors of Internet Infidelity Questionnaire

Indicators Components	Total Rotation of Square Factors			Eigen Value		
	Density Percent	Percent of the Variance	Total	Density Percent	Percent of the Variance	Total
Friendly activities	29.111	29.111	12.088	42.315	42.315	17.765
Emotional activities	51.100	21.989	8.165	57.657	15.342	5.307
Sexual activities	65.898	14.798	4.643	65.898	8.241	1.824

ual activities” as follows: 0.95, 0.89 and 0.90. Cronbach’s alpha for total score was 0.91. A significant correlation between the subscales with each other is one way to test the validity. The correlation between 3 factors of Internet Infidelity Questionnaire is shown in Table 3.

According to Cohen (13) 0.5 shows strong correlation; 0.3 indicates average correlation; and 0.1 indicates a weak correlation between factors. In this study, the correlation between all of the factors is high.

#### 4. Discussion

The results of this study in addition to previous studies expanded our understanding of the traditional infidelity concept that was solely limited to in-person sexual and emotional behaviors. In general, the findings of this study suggest that the internet infidelity questionnaire has good reliability and high validity in Iranian society. As far as we know, no particular study has been released about attitudes toward internet behaviors by using a validated questionnaire in Iran. Since some people are involved in infidelity due to a lack of the devastating impact of such relationships on real-world relationships, investigation into the attitude people have towards such internet activities seems necessary. Several studies in different societies and cultures examine the attitudes in this regard. This study was conducted to validate the internet infidelity questionnaire (16, 17).

The factor analysis resulted in 3 main factors: friendly activities, emotional activities, and sexual activity. Each of these three factors in the study had good internal consistency. Factors 2 and 3 (emotional activities and sexual activity) were consistent with previous researches.

Because, as Young (18) stated, there are separate components in relation to betrayal: sexual, emotional, and porn. Due to the high alpha score of Cronbach’s test (0.91 in the present study) it can be concluded that there is high internal consistency between its subscales. In the research of Docan-Morgan and Docan (15) Cronbach’s alpha for the first factor (superficial/non-formal activities) was 0.95 and the second factor (targeted / busy activities) was 0.92.

It can be concluded from the results of this study that for a majority of people having internet relationships outside of marriage are as real and as important as real-world relationships; therefore, can be considered a betrayal of real-world relationships. This result is also consistent with previous studies (14, 19, 20). We also found that some internet behaviors are not sexual or emotional in nature (secretly sending personal photos or information) but for some people, these behaviors are still considered a betrayal. By using factor analysis of the questionnaire and the results, internet activities may understood based on the individual’s’ attitude about infidelity on a continuum from mild (friendly activities) to severe (sexual activity). Previous studies have shown that perhaps much of the Internet behavior by individuals is underestimated and poor, but it’s betrayal when the attitude toward the opposite sex behaviors would evaluated. So one of reasons to explain why some people are involved in such relationships could be applied that their opinions and behaviors about infidelity are not their own (15, 21, 22).

Considering these results, the importance of rules and beliefs about spousal behavior is revealed in relation to online interactions and activities before marriage. Because in a marital relationship maybe one of the spouses has a negative attitude toward some Internet activities, while the other part does not see anything wrong with engaging in Internet activities without the knowledge of the other person (5, 23).

The findings of this study should be interpreted according to its limits. Although married samples in this investigation of attitude toward a partner’s infidelity was better represented than in previous studies, the majority of participants in this study were single. Since the questionnaires’ completion in this study depended on single people imagining a partner for themselves. Therefore, these results cannot be completely generalized to the married population Future research is expected to expand more fully and use the results from more married samples. We expect future research to more deeply analyze the relationship between technology and infidelity as the use of media increases across society and virtual interpersonal relations become more common in the new era.

**Table 3.** Rotation Component Matrix for Three Factors of Internet Infidelity Questionnaire

Item	Component 1, Friendly Activities	Load Factor
2	Chatting with familiar person on the Internet	0.654
7	Giving email address to familiar person on the Internet	0.684
8	Talking about favorite sports team with familiar person on the Internet	0.772
9	Regular friendly chats with familiar person on the Internet	0.838
10	Individual guidance from familiar person on the Internet	0.780
11	Sending email to familiar person on the Internet	0.818
12	Talking about issues and problems to familiar person on the Internet	0.709
16	Having a rational conversation with familiar person on the Internet	0.752
19	Sending friendly email to familiar person on the Internet	0.654
21	Telling jokes with familiar person on the Internet	0.713
22	Philosophical conversation by email about love with familiar person on the Internet	0.717
23	Sending email to familiar person on the Internet asking for interpersonal relationship advice	0.718
24	Making a friendly relationship with familiar person on the Internet	0.664
25	Having serious conversations in chat rooms with familiar person on the Internet	0.685
26	Praising familiar person on the Internet	0.590
27	Having intimate relationship with familiar person on the Internet	0.581
29	Playing Internet games, such as chess with familiar person on the Internet	0.701
33	Viewing the profile of someone else on the Internet	0.654
34	Having conversations about daily issues and news with familiar person in Chatrooms on the Internet	0.797
35	Request doing something with familiar person on the Internet	0.523
36	Send a private message to familiar person on the Internet	0.682
39	Online conversations with different unknown people	0.544
Component 2, Emotional Activities		
4	Having emotional feelings towards the person met on the Internet after only a month of talks	0.776
5	Expressing love to familiar person on the Internet	0.810
6	Chatting about meeting each other soon with familiar person on the Internet	0.777
15	Sending e-mails every day about everyday issues to familiar person on the Internet	0.598
17	Sending email to familiar person on the Internet about secret issues which you do not talk about with others	0.507
20	Sending personal photos to familiar person on the Internet	0.406
30	Putting personal information on the Internet to find someone else	0.589
31	Having a plan to meet a familiar person on the Internet	0.668
38	Having serious emotional relationship with familiar person on the Internet	0.657
Component 3, Sexual Activities		
1	Online flittering with familiar person on the Internet	0.503
3	Talking about sexual life with familiar person on the Internet	0.554
13	Sending emails discussing personal uncomfortable issues to familiar on the Internet	0.439
14	Sending online greeting cards with immoral and unpleasant content to familiar person on the Internet	0.716
18	Contacting the spouse or personal friend of familiar person through the Internet	0.466
28	Watching pornography on the Internet	0.800
32	Friendly conversation with former spouse through a Chatroom	0.494
37	Having virtual sex with familiar person on the Internet	0.633
40	Access to pornographic sites	0.810
41	Showing own image by webcam and talk about sex life with familiar person on the Internet	0.506
42	Sending personal nude and naked photos to familiar person on the Internet	0.678
43	Having relationship by webcam with familiar person on the Internet	0.598

Due to increasing internet access in the community, doing qualitative research into the causes of internet infidelity by some couples will be important. Understanding the variables of intrapersonal and interpersonal relation-

ships is important to understanding what to do about internet betrayal. Perhaps the media can be used to aware people, therapists and counselors discuss, regarding the serious problems of internet infidelity. And the results can

**Table 4.** Correlation Between Internet Infidelity Questionnaire's components

	Component 1, Friendly Activities	Component 2, Emotional Activities	Component 3, Sexual Activities
Component 1, friendly activities	-	0.619 <sup>a</sup>	0.568 <sup>a</sup>
Component 2, motional activities	-	-	0.645 <sup>a</sup>
Component 3, sexual activities	-	-	-

<sup>a</sup>P < 0.001.

be used as one of the significant elements in premarital counseling for couples where one or both misuse the internet.

### Acknowledgments

This study is purely a research study and is not related to a specific project or thesis. The authors would like to thank participants who kindly collaborated in this project.

### Footnotes

**Authors' Contribution:** Study design: Mohamad Reza Abdi, Roghieh Nooripour, Taghi PourEbrahim; data collection and analysis: Saeed Bakhshani, Mostafa Alikhani; manuscript preparation: Roghieh Nooripour, Mohamad Reza Abdi, Mostafa Alikhani, Taghi PourEbrahim.

**Funding/Support:** This paper has been done by authors' expenses.

### References

- Merkle ER, Richardson RA. Digital Dating and Virtual Relating: Conceptualizing Computer Mediated Romantic Relationships. *Family Relations*. 2000;**49**(2):187-92. doi: [10.1111/j.1741-3729.2000.00187.x](https://doi.org/10.1111/j.1741-3729.2000.00187.x).
- Lee CH, Sung YS, Jung N, Jang SA, Park SY, Lee JY. A study on the SNS use of young people. *National Youth Policy Institute. Korea*. 2012:1-396.
- Leung LW. Effects of motives for Internet use, aloneness, and age identity gratifications on online social behaviors and social support among adolescents. Paper presented at the annual meeting of the International Communication Association. Sundeck Singapore International Convention and Exhibition Centre; 2010.
- Mileham BA. Online infidelity in Internet chat rooms: an ethnographic exploration. *Computers in Human Behav*. 2007;**23**(1):11-31. doi: [10.1016/j.chb.2004.03.033](https://doi.org/10.1016/j.chb.2004.03.033).
- Wang CC, Hsiung W. Attitudes towards online infidelity among Taiwanese college students. *Itn J Cyber So Educ*. 2008;**1**(1):61-78.
- Atwood JD. Cyber-Affairs. *J Couple Relatsh Ther*. 2005;**4**(2-3):117-34. doi: [10.1300/J398v04n02\\_11](https://doi.org/10.1300/J398v04n02_11).
- Cravens JD. Social networking infidelity: Understanding the impact and exploring rules and boundaries in intimate partner relationships. Texas: Texas Tech University; 2013.
- Jones KE, Hertlein KM. Four Key Dimensions for Distinguishing Internet Infidelity From Internet and Sex Addiction: Concepts and Clinical Application. *American J Family Ther*. 2012;**40**(2):115-25. doi: [10.1080/01926187.2011.600677](https://doi.org/10.1080/01926187.2011.600677).
- Norton AM. Internet boundaries for social networking: Impact of trust and satisfaction (Master's thesis). Manhattan, KS: Kansas State University; 2011.
- Atwood JD, Schwartz L. Cyber-Sex: The new affair treatment considerations. *J Couple Relatsh Ther*. 2002;**1**(3):37-56. doi: [10.1300/J398v01n03\\_03](https://doi.org/10.1300/J398v01n03_03).
- Petric G, Petrovic A, Vehovar V. Social uses of interpersonal communication technologies in a complex media environment. *Euro J Communication*. 2011;**26**(2):116-32. doi: [10.1177/0267323111402654](https://doi.org/10.1177/0267323111402654).
- Cooper A, Månsson SA, Daneback K, Tikkanen R, Ross M. Predicting the future of Internet sex: Online sexual activities in Sweden. *Sex Relation Ther*. 2003;**18**(3):277-91. doi: [10.1080/1468199031000153919](https://doi.org/10.1080/1468199031000153919).
- Alge SBA. Lithuanians' attitudes toward internet infidelity and its correlates [Dissertation]. Denton, Texas: Texas Woman's University; 2009. pp. 16-79.
- Henline BH, Lamke LK, Howard MD. Exploring perceptions of online infidelity. *Personal Rel*. 2007;**14**(1):13-28. doi: [10.1111/j.1475-6811.2006.00144.x](https://doi.org/10.1111/j.1475-6811.2006.00144.x).
- Docan-Morgan T, Docan CA. Internet Infidelity: Double Standards and the Differing Views of Women and Men. *Communication Quarterly*. 2007;**55**(3):317-42. doi: [10.1080/01463370701492519](https://doi.org/10.1080/01463370701492519).
- Underwood H, Findlay B. Internet Relationships and Their Impact on Primary Relationships. *Behaviour Change*. 2012;**21**(02):127-40. doi: [10.1375/bech.21.2.127.55422](https://doi.org/10.1375/bech.21.2.127.55422).
- Whitty MT. Pushing the wrong buttons: men's and women's attitudes toward online and offline infidelity. *Cyberpsychol Behav*. 2003;**6**(6):569-79. doi: [10.1089/109493103322725342](https://doi.org/10.1089/109493103322725342). [PubMed: [14756923](https://pubmed.ncbi.nlm.nih.gov/14756923/)].
- Young KS. Online Infidelity. *J Couple Relatsh Ther*. 2006;**5**(2):43-56. doi: [10.1300/J398v05n02\\_03](https://doi.org/10.1300/J398v05n02_03).
- Whitty MT, Carr AN. Taking the Good with the Bad. *J Couple Relatsh Ther*. 2005;**4**(2-3):103-15. doi: [10.1300/J398v04n02\\_10](https://doi.org/10.1300/J398v04n02_10).
- Underwood H. Who goes there? Demographics, personality and attachment style of those involved in Internet affairs, Unpublished Doctoral dissertation. Australia: Swinburn University; 2005.
- Whitty MT. The Realness of Cybercheating: Men's and Women's Representations of Unfaithful Internet Relationships. *Soc Sci Comput Rev*. 2005;**23**(1):57-67. doi: [10.1177/0894439304271536](https://doi.org/10.1177/0894439304271536).
- Zola MF. Beyond Infidelity-Related Impasse: An Integrated, Systemic Approach to Couples Therapy. *J Sys Therap*. 2007;**26**(2):25-41. doi: [10.1521/jsyt.2007.26.2.25](https://doi.org/10.1521/jsyt.2007.26.2.25).
- Hertlein KM. Internet Infidelity: A Critical Review of the Literature. *Family J*. 2006;**14**(4):366-71. doi: [10.1177/1066480706290508](https://doi.org/10.1177/1066480706290508).